

UNIVERSITY *of* WEST FLORIDA

STUDENT SCHOLARS

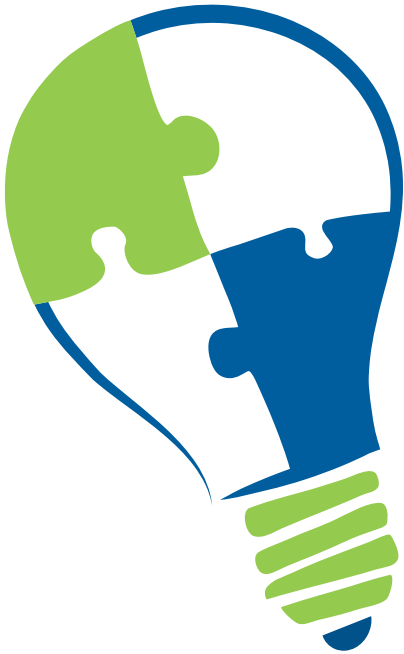
SYMPOSIUM

AND FACULTY RESEARCH SHOWCASE

2024

Event Program

uwf.edu/our



UNIVERSITY *of* WEST FLORIDA

**STUDENT SCHOLARS
SYMPOSIUM**

AND FACULTY RESEARCH SHOWCASE

Programs & Abstracts

April 18, 2024

EDITOR

Allison Beauregard Schwartz, Ph.D.

Director, Office of Undergraduate Research

PUBLICATION DESIGNER

Grace Resendez McCaffery, Latino Media Gulf Coast

EVENT ORGANIZED BY

Office of Undergraduate Research

We gratefully acknowledge the faculty who support undergraduate research at the University of West Florida, both through their mentorship of research students as well as through their time and effort reviewing proposals and serving on the advisory board for the Office of Undergraduate Research, among other things. We also gratefully acknowledge the students, faculty, and staff who have contributed to the organization and have volunteered their time to hosting this symposium.

TABLE OF CONTENTS

Presentation Titles and Information

Organized by college and department, alphabetized by first author

Presentation type included with each listing

College of Arts, Social Sciences & Humanities

Department of Anthropology & Archeology	2
Department of Art & Design	3
Department of Criminology & Criminal Justice	9
Department of English	10
Reubin O'D Askew Department of Government	16
Department of History & Philosophy	18
Dr. Grier Williams School of Music	21
Department of Theatre	21

College of Business

Department of Business Administration	22
Department of Commerce	23

Hall Marcus College of Science and Engineering

Department of Biology	26
Center for Environmental Diagnostics & Bioremediation	34
Department of Chemistry	34
Department of Computer Science	44
Department of Cybersecurity & Information Technology	44
Department of Earth & Environmental Sciences	46
Dr. Muhammad Harnur Rashid Department of Electrical and Computer Engineering	53

Department of Intelligent Systems & Robotics	54
Department of Mathematics & Statistics	54
Department of Mechanical Engineering	58
Department of Physics	62

School of Education

Education Program	63
Education Leadership	64
Instructional Design & Technology Program	65

Usha Kundu, MD

College of Health

Department of Health Sciences & Administration	65
Department of Movement Sciences & Health	66
School of Nursing	72
Department of Psychology	72

Other Programs

Kugelman Honors Program	77
University Libraries	78
Office of Undergraduate Research	78
UWF Argo Cyber Emerging Scholars Program	78
The Robinson Honor Program at Pensacola State College	79

Author Index

Authors and Faculty	88
---------------------	----



DEPARTMENT OF ANTHROPOLOGY

Rin Amos

Anthropology

Coopers and Cobblers: An Analysis of Leather from a Deadman's Island Excavation

Faculty Mentor(s): Jennifer Melcher

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #2

In 1994 an excavation in Gulf Breeze, Florida unearthed the remains of many pairs of leather shoes. The site was located on Deadman's Island, which once served as a quarantine station during outbreaks of Yellow Fever in the 19th and 20th centuries. This project sought to determine an approximate date of origin for the leather material excavated and collect as much data as possible in the given time frame. Using methods such as comparative analysis, the remains of these shoes were examined from the patterns and stitching to the approximate sizes of the feet that once wore them. Footwear fashion through the centuries, the history of disease control, and technological innovations all played a role in attempting to position this material in context with the past. In the wake of the COVID-19 outbreaks and resulting quarantines that took effect around the world, the history of disease control is especially important to the Pensacola residents of today. This project contributes to that history and provides an opportunity for others to learn about artifact analysis.

Mikah Hillman

Anthropology

Globalizing Ayahuasca: Exploring Shamanic Tourism in the Peruvian Amazon

Faculty Mentor(s): Ben Burgen

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #1

Spiritual beliefs and practices are a common feature of all cultures and shape the ways we see and understand the world around us. In some cultures, these practices include imbibing substances to reach altered states of consciousness. In this context, these substances are generally considered sacred and are typically administered by a spiritual leader or healer. For more than a thousand years, the indigenous Shipibo of the Peruvian Amazon have been using a potent psychotropic brew known as Ayahuasca as a sacred medicine in their spiritual

practices. However, many outsiders associate Ayahuasca with recreational drug use. The misrepresentation of Ayahuasca as a recreational drug stems from a lack of cross-cultural understanding on the part of outsiders. This misunderstanding is exacerbated by the notoriety and popularity of Ayahuasca among some westerners seeking alternative spiritual knowledge and experiences, as well as mainstream critiques and stereotypes of westerners who seek to connect with indigenous spiritual traditions more generally. Nevertheless, the internationalization of Ayahuasca is growing through a proliferation of retreat centers catering to western visitors in Peru. These retreats range from small retreats operated by Shipibo families with generational experience to large retreats owned by western investors. My poster explores the realities of Ayahuasca use in today's globalized world. A survey of the latest ethnographic research provides insights on the ways both alternative spiritual pilgrims and tourists seek to experience the purported benefits of Ayahuasca under the guidance of Shipibo shamans to have an experience that they frame as both rewarding and ethical.

Mikayla Schad

Anthropology

How To Pull Artifacts From UWF Collections

Faculty Mentor(s): John Worth

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #3

The Systematic Process of Artifact Retrieval Inside UWF's Archaeology Collections
The University of West Florida's archaeology collection houses a number of artifacts that are utilized by researchers and students every day. This poster displays the systematic procedure on how to properly retrieve artifacts from an archaeological collection. I have chosen this topic because of my work with collections personnel to retrieve artifacts for an anthropology graduate student's thesis on the 1559 Luna Shipwrecks. While the process may seem straightforward there are many opportunities for error and for artifacts to be misplaced. Because there are numerous collections housed within this archaeological facility, it is important for the collections manager to identify any of these errors or locate any misplaced objects. Whilst doing our work, the collections assistant and I noticed several artifacts were missing and needed to be tracked down. A majority of these artifacts were found to be on display in exhibits on campus but did not have any recorded information inside the object's original housed location. It is essential to keep track of every item within an archaeological collection, this should be not only documented inside a database but also within the archival-safe box that the collection is housed inside of. A step by step procedure helps guarantee artifacts are well tracked and taken care of. The collections assistant and I were able to assist that student by not only locating the misplaced objects but by updating all information about those objects for future research opportunities later. Since I will be spending more time in collections, I wanted to contribute to the retrieval process by providing a poster for the collections manager to alleviate some of the workload on educating future researchers and students on the proper methods of acquiring objects out of a collection for analysis and to gain my own experience in collection management.

Natalie Stanemir***Revisiting the Archaeology of Peace Mound Park*****Faculty Mentor(s): Ramie Gougeon****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 1:00–2:00; Location: Conf Room AB****Presentation Time: 1:00–2:00; Poster #1**

Peace Mound Park, located on the outskirts of the Everglades, serves as a reminder of the prehistoric occupation of South Florida. The Tequesta people inhabited this region during the late-Archaic period for approximately two thousand years, spanning from 500 BCE until the early 1700s CE. This research aims to reexamine the 1970s excavation of site 8BD74, known as Taylor Head, within the broader context of the Tequesta culture. The focus lies on cataloging and analyzing the collections by unit and level in order to better understand the Tequesta peoples' material culture. By comparing this data with artifact assemblages from recognized Tequesta sites, the findings provide a broader context for understanding 8BD74 through a comprehensive overview of Tequesta lifeways. Through this contemporary reassessment of the material culture, this research concludes with a reaffirmation of the significant presence of the Tequesta people in Peace Mound Park.

Heather Stewart***Aquatic Subsistence of Santa Rosa-Swift Creek Culture*****Faculty Mentor(s): John Worth****Lead Author Classification: UWF Undergraduate Student****Session: Main Oral Presenters****Session Time: 12:30–1:45; Location: Auditorium****Presentation Time: 12:45PM**

The Santa Rosa-Swift Creek culture is located on the Northwest coastline of Florida. Santa Rosa-Swift Creek sites are Woodland period sites best identified by their unique pottery types. Nearly all the sites are associated with shell middens which offer a look into the diet of the culture. The coastal nature of the sites and artifacts found during excavations of shell middens suggest the primary diet of the inhabitants consisted of local fish and shellfish. The goal of this study is to identify possible fishing methods by analyzing the artifact assemblages from the shell midden sites. A comparative analysis with the more thoroughly investigated Calusa culture farther south on Florida's Gulf coast is also conducted to offer insight into possible fishing techniques used by the Santa Rosa-Swift Creek people.

Allysha Winburn***Biocultural CT Research at UWF: The Structural Vulnerability Profile*****Co-Author(s): Jonathan Meronvil****Faculty Mentor(s): Allysha Winburn****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 1:00–2:00; Location: Conf Room AB****Presentation Time: 1:00–2:00; Poster #2**

The notion that socioeconomic inequity is embodied within skeletal remains is the basis of the Structural Vulnerability Profile—a biocultural anthropology approach to amassing data in relation to the impact of socioeconomic

Anthropology

stratification on the human body. An individual's lived experiences—including racism, classism, and sexism—are concretized within dental and skeletal indicators. Structural inequality and violence can manifest in individuals' bones, highlighting the role of forensic anthropologists in understanding accumulated injuries. Previous studies lack adequate context for injuries across demographic groups and lived experiences. Our UWF Biocultural Research Group has begun to fill that gap. Analysis of the interplay between social factors and skeletal/dental health facilitates the utilization of a profile which allows anthropologists to focus on variation that is contingent on social structure, rather than emphasizing customary usage of anthropology's "Biological Profile." Structural vulnerability refers to social phenomena's biological effects, leading to suffering among marginalized populations. The Structural Vulnerability Profile seeks to provide tangible data that validates the relationship between aspects such as oppression and economic scarcity with particular biomarkers—indicative of embodied social processes. Methods employed within this project include skeletal and dental analyses conducted on anonymized postmortem CT scans from New Mexico forensic case decedents. Thus far, our research group has investigated biomarkers of dental disease, incidences of traumatic injury, and differences in surgical interventions between gender, race, and SES-based subsamples. Our emerging research is revealing a complex relationship between systemic vulnerability, dental health, and injury recurrence, particularly in marginalized populations marked by class and gender-based differences. This poster will present an overview of our findings, along with proposed future directions and applications both within and beyond forensic anthropology.

Anthropology


DEPARTMENT OF ART & DESIGN

Robin Bailey***Explorations in Identity*****Faculty Mentor(s): Carrie Fonder****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Session Time: 11:00–1:00; Location: Conference Room C****Presentation Time: 11:00–1:00**

Florida has become a hotbed for political discourse surrounding LGBTQ+ people and their rights. This can be seen every day in the news, in social media, and even in the laws being written. However, what is often overlooked is the toll this takes on those same people who are being discussed and demonized. My pieces are an attempt to explore how this discourse in the political world and our culture at large has affected these people both mentally and emotionally, in how they identify themselves and how they feel about that identity. This exploration will be done through a series of portraits sketched in person while conducting an informal interview with the subjects. After the interview, these sketches are then rendered in ink and the questions and answers provided will be used to create an interpretation of how the subject views themselves and their gender identity. My hope is that by providing these interpretations, as well as the questions asked (but not the answers), viewers will begin to both question the strict adherence to the gender binary and how that adherence has negatively impacted those that choose to question it.

Art & Design

Jordan Bassett***Experimenting with UV Blacklight Paint*****Faculty Mentor(s): Carrie Fonder****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Session Time: 11:00-1:00; Location: Conference Room C****Presentation Time: 11:00-1:00**

My paintings use the theme of fantasy to enact a sense of childlike innocence and create an interactive experience for the audience. This project was influenced by my father, as painting with him as a kid was the highlight of my childhood. His paintings were mostly scary, and so I, too, began with the concept of horror. Over time, I slowly realized my artwork and childhood weren't about horror itself but rather the ability to have fun and play. I refocused my work around fantasy and incorporated the theme as a way to display children's innocence. For my research project, I created a painting using acrylic paint and UV blacklight paint. With the addition of blacklight flashlights and UV paint, I was able to hide the truths of the fantasy while also providing an interactive experience for the audience to create a more shocking experience when viewing the painting. This project altogether allowed me to further experiment with different materials to display the theme of horror, child's innocence, and fantasy while also bringing about the audience's inner child.

Yasemin Bishop***A Timeline of PFAS: From Discovery to Contemporary Concerns*****Faculty Mentor(s): John Dougherty****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Session Time: 11:00-1:00; Location: Conference Room C****Presentation Time: 11:00-1:00**

This research project constructs a timeline of per- and polyfluoroalkyl substances (PFAS), from their initial synthesis in 1938 to contemporary concerns and emerging research findings. PFAS are a group of chemicals known for their durability against water, heat, and oil and have been extensively utilized in various industrial and commercial applications since their discovery. The timeline highlights significant events, including the accidental discovery of Scotchgard in 1953 and the widespread adoption of PFAS in firefighting foam and firefighting equipment in the 1970s. Key events include regulatory approvals, such as the FDA's authorization of PFAS in particular food packaging in 1965, and studies revealing the adverse health effects of PFAS exposure, such as increased cancer risk and immune system impairment. Recent investigations have unveiled alarming contamination levels in water sources, consumer products, and blood samples, emphasizing the urgent need for mitigation strategies. Advancements in research, including potential methods to neutralize PFAS, offer hope amidst growing environmental and public health concerns. This research aims to raise awareness about PFAS contamination and its implications by designing a poster to communicate the findings to the public. By bringing together historical events and contemporary research findings, this project emphasizes the importance of proactive measures to address the threat of PFAS to human health and the environment.

Art & Design**Liliana Blouin*****Bridging the Gap: An open source water quality monitor*****Faculty Mentor(s): Thomas Asmuth****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session; Session Time: 1:00-2:00; Location: Conf Room AB****Presentation Time: 1:00-2:00; Poster #4**

Environmental sensor technology and data interfaces are often expensive and difficult to obtain or maintain. These factors present a challenge for researchers who need to fund and overcome learning curves when developing new methods. However, the challenges can be even greater for the public. Lack of transparency in environmental and public health data, where it's difficult to access or comprehend, further hinders accessibility to science. This makes it challenging for citizens to gain actionable knowledge they can apply to individual action and participation in community policymaking. The main objective of this project is to demonstrate that merging science and art can be an effective strategy to enhance communication and knowledge. To achieve this, the project includes prototyping a low-cost water quality data buoy and designing an interface that allows various stakeholders to access the collected data. To ensure that the device is affordable and accessible, it will be made from inexpensive materials such as open-source RGB sensors, Arduino microcontrollers, and hardware store materials. The collected water quality data will be transmitted to an off-site device to engage the public. This will provide a visually interesting interface and bridge the knowledge gap between science and the community. The project will involve both a scientific process and a creative process, including technological and aesthetic planning, material testing, prototyping, construction, and field testing.

Art & Design**Maddie Burnett*****Retaining Wall Sculpture, Iteration II*****Co-Author(s): Yesi Mendoza, Lilly Stark, Syn Defelix****Faculty Mentor(s): Carrie Fonder****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Session Time: 11:00-1:00; Location: Conference Room C****Presentation Time: 11:00-1:00**

The heart of our project was reimagining and revamping a previous iteration of a sculpture that lived on campus from 2019- 2024 in front of the 160-foot-long cement wall near Building 12. In our iteration, we strove to engage the surrounding environment by finding a perfect balance between aspects of nature and aspects of architecture. Our design, constructed of wood and steel, features an asymmetrical composition that celebrates the diversity of nature on campus with abstracted native flowers. There is an emphasis on the use of light through the juxtaposition of positive shapes with a lively and rhythmic use of negative space that travels along the length of the fence-like sculptural structure.

Art & Design**Maddie Burnett*****The Relationship Between Humans and Grotesque Imagery*****Faculty Mentor(s): Carrie Fonder****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Art & Design**

Session Time: 11:00-1:00; Location: Conference Room C

Presentation Time: 11:00-1:00

There is a strange relationship between humans and the barrier we create when it comes to grotesque imagery associated with the human body. I want to be able to take away that barrier to show just how beautiful the dark can be. We spend our time focused on the lighter aspects of our body. The way our skin shines in the light of the sun, our smiles, laughs, the beauty it all holds is still truly remarkable but so are the tears we cry, the blood that beats within our veins, and the organs that keep us alive. If one is to accept a human for what it is, we must accept the duality of it all: the good and the bad. After taking the time to research different materials and techniques, I found that an interactive fabric piece, specifically cotton fabric, was the best way to go. Cotton is a common fiber we use when we construct the clothing we wear and with that in tandem with the idea of an interactive grotesque piece, I believe there is a balance of familiarity and the unknown. I found that with my whimsical approach to it all, many have found my piece approachable even with it addressing a more serious topic and that is the goal I am looking to achieve.

Adrianna Campagna

Art & Design

Contemporary Memento Mori

Faculty Mentor(s): Carrie Fonder

Lead Author Classification: UWF Undergraduate Student

Session: Visual Art Exhibit

Session Time: 11:00-1:00; Location: Conference Room C

Presentation Time: 11:00-1:00

In my research, I am looking at how historical artists have used the tradition of Memento Mori to explore subject matter related to the natural world. Memento mori is a form of artistic symbolism that translates directly to “remember you must die” and it is a significant tool used by artists to encourage individuals to contemplate mortality and ultimately accept the inevitability and beauty of death. By looking at how other artists have used memento mori in their work, I am able to stay true to the tradition in terms of subject matter and connect to artists of the past who have explored the same ideas in their pieces. In my work, I incorporated the use of textiles sandwiched between layers of paint to mimic the corporal and fleshy qualities of each subject. This works to add unexpected visceral texture that echoes the layers by which organic matter experiences decay. In my process, I am directly referencing organic decay in the way that paint is sequentially applied and removed from the surface. Thin and thick layers of paint are buffed, dripped, and scraped onto the surface and subsequently scrubbed off in a manner that is reminiscent of the degradative process of rot or erosion. Furthermore, the use of multimedia will be a new take on an ancient idea, keeping the painting tradition of memento mori alive and fresh in the modern era.

Kel Crownover

Art & Design

Additive Manufacturing and Letterpress Printing in Contemporary Poster and Graphic Design

Co-Author(s): Kaylee Koether

Faculty Mentor(s): Richard Rodriguez

Lead Author Classification: UWF Undergraduate Student

Session: Visual Art Exhibit

Session Time: 11:00-1:00; Location: Conference Room C

Presentation Time: 11:00-1:00

For our project, we will report on and present various letterpress posters and 3D printed blocks we have created. They will be shown in the format of a visual art gallery exhibit. We will give verbal insight about our research and reference the posters we have created, along with the 3D blocks to explain our process of creation. Our research combines digital technology and machinery, and historical letterpress printing techniques. We are utilizing our resources by creating our project at SEA Makerspace and UWF Historic Trust. This project draws inspiration and invaluable knowledge from Hatch Show Print and Hamilton Wood Type, among others. They allow us to learn from past letterpress techniques and integrate them into contemporary design. It also allows us to make a connection between both. One of our goals in creating this project is to create a personal collection of type, borders, and ornaments used for letterpress projects. This collection will live at UWF Historic Trust and be used and built upon by students in future printing projects.

Tia Eckles

Art & Design

Artistic Study of Repulsion and Attraction Regarding Fears and Eroticism

Faculty Mentor(s): Carrie Fonder

Lead Author Classification: UWF Undergraduate Student

Session: Visual Art Exhibit

Session Time: 11:00-1:00; Location: Conference Room C

Presentation Time: 11:00-1:00

The objective of my research was to explore the concept of giving yourself to someone in your entirety in the form of consumption. Repulsion and attraction are subjects that walk a fine line between one another, and I have explored where that line blurs. I sought to examine human sexuality and fear through an abstract, mixed-media piece that combines what humans find disturbing and what we find beautiful. We see this most commonly displayed in supernatural/apocalyptic media, specifically regarding vampirism, cannibalism, and the undead. This theme has become more prevalent in recent years through the rise of media centering around the act of cannibalism, and it poses an interesting question: Do humans use this sexualization of consumption as a coping mechanism for a fear of death? Or can a person's love be so overwhelming that there is no other way to fully express that emotion than through consuming their lover in their entirety? I have created an abstraction of horrifying and somewhat erotic subject matter through a combination of materials. The interaction between rigid, dry materials and fluid, wet materials often creates compelling effects that mimic semi-realistic gore and macabre subjects. With the blurring between the two-dimensional and the three-dimensional plane, something extremely compelling is created. It elevates a piece off of the page and invades the viewers' space, forcing them to confront the work in an incredibly intimate manner.

Sandy Harrison

Art & Design

Investigating Voyeurism in Art

Faculty Mentor(s): John Markowitz

Lead Author Classification: UWF Undergraduate Student

Session: Visual Art Exhibit

Session Time: 11:00-1:00; Location: Conference Room C

Presentation Time: 11:00-1:00

Every painting is a self-portrait. As such, an artist is practically an exhibitionist. In my OUR project, I explore themes of voyeurism in its relation to the art world. As a very private person, I grapple with the idea of putting my work into the world as it's a vulnerable thing to do, and I don't want to expose myself. To combat this, I've decided to explore self-portraiture in a way that is at once revealing and concealing, presenting myself as a series of abject limbs and veiled body parts. Researching artists of the past allows me to employ their techniques and ideas in my own work and bring them into a contemporary setting where I question the desire to observe and to be observed. By painting scenes that recall genre paintings, I hope to foster a sense of familiarity in my work that is in direct opposition to the subject matter. I hope to make one question what it means to be a fly on the wall.

Rayne Henry**Art & Design*****To Capture a Memory, a Series of Paintings*****Faculty Mentor(s): Carrie Fonder****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Session Time: 11:00-1:00; Location: Conference Room C****Presentation Time: 11:00-1:00**

Using mixed media, such as acrylic paint and oil pastels, I attempt to bridge the gaps of my own memory and turn fleeting moments in time into reflective and tangible works of art. I am interested in how the cycle of recalling and forgetting memories impacts the accuracy of our recollections and what this can look like, outside of our heads, through an observable media. These works have manifested as a fusion of elements from representational and abstract artwork. I take symbolism and references from my personal memories and combine them, overlaid on top of an undefined landscape of vivid color, in order to emphasize the fluid and oftentimes unreliable nature of memories, more specifically, the memories from childhood and adolescence. The process of creating my recent work has allowed me to reflect on my own memories and explore how my past experiences have influenced who I currently am.

Al Johnson**Art & Design*****Textile and Wallpaper Design and Fabrication*****Faculty Mentor(s): Joseph Herring****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Session Time: 11:00-1:00; Location: Conference Room C****Presentation Time: 11:00-1:00**

As a graphic designer and illustrator with an interest in pattern design for textiles, my project is focused on the process of designing and fabricating repeating pattern designs for fabrics and wallpapers. Textile production is not a discipline that is currently taught within the Art and Design department, so this research project has allowed me to expand my knowledge of this skillset. I am creating illustrated patterns that will then be fabricated into physical wallpaper and fabric materials for display. Once this process is complete, I will document my process so that future students are able to access the information that I have acquired and use these methods for their own projects.

Bethany Jollie**Art & Design*****Rod Chairs Sculptures*****Faculty Mentor(s): Carrie Fonder****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Session Time: 11:00-1:00; Location: Conference Room C****Presentation Time: 11:00-1:00**

During my process, I have independently explored the use of materials and the properties of various common (and less common) sculptural materials through research and hands-on exploration. I have created three sculptures using rod chairs, and my goal is to develop interest by utilizing natural lines, space and depth. Rod chairs serve as a sculptural support for concrete. Placing the rod chair face down allows you to rest larger metal rods in the three grooves found on top of the rod chair. This process assures structural stability when concrete is poured. In the beginning, my sculptures have an overall sense of chaos. They appear stressed and nervous, but somewhere in the middle of this conflict, I see places and spaces that can be defined. Defining them brings simplicity and organization to the sculpture. It offers a sense of relief a place for your eyes to rest and your mind to retreat. Even though rod chairs stabilize larger forms of structure, in my sculpture, I allow them to give life to something organic. I also like the idea of taking an unseen object and making it visible; softening the aesthetics of something industrial, as to bring individual beauty to a highly manufactured object.

Jack Kaiser**Art & Design*****Experimental Short Film*****Faculty Mentor(s): Jim Jipson****Lead Author Classification: UWF Undergraduate Student****Session: Main Oral Presenters****Session Time: 9:30-11:00; Location: Auditorium****Presentation Time: 10:45AM**

This OUR creative project is a short film where the narrative is told through abstract imagery and music. An overarching theme of the film is a strong connection to the natural world fractured by the intervention of technology and having to find oneself in between the two. The film runs about 20 minutes in length and features an original score. What started as an experiment in representing physical landscapes through audio synthesis blossomed into an experimental film shot entirely on a VHS camcorder. The film breaks the norm of traditional work in the genre and does not feature any dialogue or discernible characters. Instead, the film is concerned with placing the viewer in an emotional state with imagery and composition to reflect a human's relationship with the world of thought.

Kaylee Koether**Art & Design*****Additive Manufacturing and Letterpress Printmaking in Contemporary Poster and Graphic Design*****Co-Author(s): Kel Crownover****Faculty Mentor(s): Richard Rodriguez****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit**

Session Time: 11:00-1:00; Location: Conference Room C

Presentation Time: 11:00-1:00

For our project, we will report on and present various letterpress posters and 3D printed blocks we have created. They will be shown in the format of a visual art gallery exhibit. We will give verbal insight about our research and reference the posters we have created, along with the 3D blocks to explain our process of creation. Our research combines digital technology and machinery, and historical letterpress printing techniques. We are utilizing our resources by creating our project at SEA Makerspace and UWF Historic Trust. This project draws inspiration and invaluable knowledge from Hatch Show Print and Hamilton Wood Type, among others. They allow us to learn from past letterpress techniques and integrate them into contemporary design. It also allows us to make a connection between both. One of our goals in creating this project is to create a personal collection of type, borders, and ornaments used for letterpress projects. This collection will live at UWF Historic Trust and be used and built upon by students in future printing projects.

Sheryl Larence

Art & Design

Reflections

Faculty Mentor(s): Caroline Ennis

Lead Author Classification: UWF Undergraduate Student

Session: Visual Art Exhibit

Session Time: 11:00-1:00; Location: Conference Room C

Presentation Time: 11:00-1:00

As an artist, my research and practice respond to the beauty and serenity of the ocean. I grew up in the Panhandle of Florida, and the sea has always brought me joy and peace, specifically the movement and reflection of the water. For this project, I am exhibiting a series of ceramic relief tiles that will be displayed on the wall. These tiles will be of my design and will be both hand-carved and sculpted, drafted from photos that I took at Navarre Beach. With the tiles, I carve out the clay to create texture. I also work in the subtractive and additive methods. The result is a relief carving, which gives it a more textural and personal touch. Once the carving is done, I glaze these tiles using colors that one would relate to the water: blues, blue-greens, gray-blues, white, and tan. I am planning on three series of tiles, each consisting of a single picture made up of a number of ceramic tiles about an inch apart. My goal for this show would be to invoke a peaceful reaction from viewers. I want to share my interpretations with others so they may also experience the majesticness and tranquility that the ocean brings me.

Lawrence Lazare

Art & Design

Art Making and Brainwave Tracking Test Construction Demonstration

Co-Author(s): Madison Spradlin, Farrah Philips, Rowe Elmore

Faculty Mentor(s): Jim Jipson

Lead Author Classification: UWF Undergraduate Student

Session: Visual Art Exhibit

Session Time: 11:00-1:00; Location: Conference Room C

Presentation Time: 11:00-1:00

The tie between stress reduction and art-making has been investigated in recent books such as "Your Brain on Art: How the Arts Transform Us. The idea of tracking brainwaves and their tie to stress and art-making is explored in Advanced Ideas

and Concepts. Using a new generation of affordable EEG (electroencephalogram) devices, our team is designing an experiment that will allow us to observe a user's brainwaves to help validate the linkages between the practice of art-making and stress reduction. For the symposium, members of the team will be demonstrating our test methodology and data collection process.

Bryce Lorton

Art & Design

Emotional Entanglement

Faculty Mentor(s): Carrie Fonder

Lead Author Classification: UWF Undergraduate Student

Session: Visual Art Exhibit

Session Time: 11:00-1:00; Location: Conference Room C

Presentation Time: 11:00-1:00

My capstone art piece is an abstract installation primarily utilizing oil painting and sculpture to display an entire emotional state, with the complexity of simultaneously present feelings captured and frozen in time. I see this as a self-portrait of the soul, which can give insight into human connection through art. A work that's seeped in emotionality in raw form, without using clearly identifiable or targeted messaging, can connect with a diverse group of viewers more personally. The installation is given structure by three stainless steel sculptures that hold one canvas each. These three sculptures have been arranged so that each section comes together to create a single structure.

Gyleishka Moreno Rodriguez

Art & Design

3D Paper Art

Faculty Mentor(s): Joseph Herring

Lead Author Classification: UWF Undergraduate Student

Session: Visual Art Exhibit

Session Time: 11:00-1:00; Location: Conference Room C

Presentation Time: 11:00-1:00

As a graphic Designer, I find inspiration in the craftsmanship of 3D paper art. Paper is the most commonly used material known to date. Its intended purpose is to write things down, there are other ways to use this material. A challenge to use this material in a paper art form. My work is a constant search for the best way to interpret paper into children's fairy tale structure. Countless artists have used paper as inspiration to create stunning works of art. Today, paper art is more popular than ever, and it's not just limited to traditional mediums like painting and drawing; paper can be used to create sculptures, collages, origami, and much more. Paper art is a form of artistic expression that transforms ordinary sheets of paper into an intricate creation. Artists use many detailed designs of paper cutting, delicacies of quilling, and mesmerizing marbling patterns. My Paper Art is inspired by the infamous Brothers Grimm fairy tales. I have been experimenting with different methods of crafting, staging, and storytelling. I try to create soothing and impactful imagery to be memorized by the beauty of its colors and story without giving a story to tell but just imagery. My work speaks, not only for me but for the people who stay and watch.

Megan Morrison

Art & Design

The Color and the Light

Faculty Mentor(s): John Markowitz

Lead Author Classification: UWF Undergraduate Student**Session: Visual Art Exhibit****Session Time: 11:00-1:00; Location: Conference Room C****Presentation Time: 11:00-1:00**

My research project, "The Color and the Light," explores the use of natural materials and processes within the medium of oil painting through a series of four landscape paintings. My current work involves an analysis of color and light relationships found in nature, and I wanted to further my research with the implementation of new materials and methods. I chose to experiment with more environmentally friendly materials as an alternative to more toxic solvents traditionally used in oil painting. A goal of my research was to integrate the idea of observation and concern for the natural world with the consideration of materials that go into creating the works. My research process included initially testing different colors of paint with different solvents and oils on cotton canvas pads. The materials I tested include lavender spike oil, linseed oil, walnut oil, and stand oil, which are all naturally derived. After conducting tests on drying times and how each material affected the paint, I created four oil paintings outdoors from direct observation. In the landscape paintings, I sought to capture a particular environment at a specific time of day, a practice that is frequently associated with the Impressionist movement of the nineteenth century. Overall, the research project allowed me to discover what methods and recipes are most conducive to a direct, observational approach to landscape painting that also incorporate more environmentally friendly materials.

Sua Parson**Art & Design*****The 5th Gospel*****Faculty Mentor(s): Carrie Fonder****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Session Time: 11:00-1:00; Location: Conference Room C****Presentation Time: 11:00-1:00**

The inspiration for this research came from my pastor when in one of his sermons he told us as Christians we need to write our story, walk our path, test our faith as if we were the 5th Gospel and that has stuck with me ever since. I would like to explore the timeless struggles between good and bad morality, the perpetual debate over what is wrong versus what is right. These conflicts, inherent to every individual, fascinate me as they mirror the complexity of our choices and the essence of free will.

Callie Russell**Art & Design*****FILM SOUP: Digital Tools for an Analog Process*****Faculty Mentor(s): Joseph Herring****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Session Time: 11:00-1:00; Location: Conference Room C****Presentation Time: 11:00-1:00**

In the form of a magazine publication, digital presets, and posters, my project combines the research I have done with the help of my OUR grant and the skills that I have gained through my time in the University of West Florida's BFA Graphic Design program such as the practices of experimental photography,

photo editing, typography, product design, editorial design, and layout design. Through my research, I have learned about the film development process and the effects that Film Soup recipes have on the chemical composition of a roll of film, and how to use film scans in the creation of digital photo presets that can be used without limit at no extra cost to the user. The driving force behind my project is that the film photography process is timely, unpredictable, and expensive. By researching this process, I have created an archive of materials, tests, and presets that can help educate future students on the possibilities of turning analog processes into digital works.

Lilly Stark**Art & Design*****Cypress Roots*****Faculty Mentor(s): John Markowitz****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Session Time: 11:00-1:00; Location: Conference Room C****Presentation Time: 11:00-1:00**

Embarking on a transformative journey through the bewitching realm of Big Cypress National Park, I delved into the intricate mosaic woven by its majestic cypress trees. Guided by the wisdom of renowned conservation photographer Clyde Butcher and a National Park Ranger, I immersed myself in intimate conversations with these ancient giants, capturing their essence through sketches and oil paintings. Drawing inspiration from Butcher's monumental work in the Florida Everglades, I translated the raw energy and dominance of the cypress trees onto canvas, employing photorealistic techniques reminiscent of his grandiose silver gelatin photography. Each brushstroke bore witness to the nuanced details of the landscape— from the vibrant new green growth on the trees to the stark pools of water reflecting the sky and branches above. Beyond personal artistic fulfillment, my creations served as visual narratives raising awareness about the vulnerability of these ancient giants. Through these artworks, I aimed to foster conversations on conservation, advocating for the preservation and restoration of Big Cypress' invaluable natural wonders. My series of sketches and oil paintings stand as testament to the enduring beauty and ecological significance of Big Cypress National Park, encapsulating the timeless narratives of resilience and endurance embodied by its towering sentinels.

Maliya Tilley**Art & Design*****Other Love: Factors in Intimate Relationships*****Faculty Mentor(s): Carrie Fonder****Lead Author Classification: UWF Undergraduate Student****Session: Visual Art Exhibit****Session Time: 11:00-1:00; Location: Conference Room C****Presentation Time: 11:00-1:00**

This project focuses on a personal lens of investigating and studying the isolation, othering, and root causes of unstable or otherwise toxic relationships involving an intimate partner, often resulting in what is known as intimate partner violence (IPV). Being African American, my artwork focuses on the introspection of identifying the roles at play due to this, implementing various technical artistic elements including scale, mixed media, and narrative utilizing a triptych— or three columned— format. These all culminate in a series of works

presented in multiple mediums including gouache, acrylic, oil pastels, and printmaking. For many, hearing stories of conflict and dysfunction within one or more individuals' intimate and private lives is a common and generationally open secret. Experiences of divorce, partner or spousal troubles, and separation are topics of conversation and debate in a 21st-century contemporary society. Matters that escalate into causing severe distress in another, however, are still often left in the realm of taboo. Physical, emotional, sexual, financial, and psychological damage inflicted on an individual or individuals is commented on, but never followed through on resolving, preventing, and ultimately empathizing with victims and survivors of past or ongoing violence against them. In a world overlapping and intersecting with variables regarding race, gender, sexual orientation, religious affiliation, class status, and ability, voices from the cries of help of any afflicted are met with ridicule, undermining, and uncomfortable compliance. Thus, this aims to analyze and discuss the variables, factors, and circumstances that often breed environments of distrust, voicelessness, and power imbalance in an intimate relationship.

Murphy Webster

Ethereal Armor

Faculty Mentor(s): Carrie Fonder

Lead Author Classification: UWF Undergraduate Student

Session: Visual Art Exhibit

Session Time: 11:00-1:00; Location: Conference Room C

Presentation Time: 11:00-1:00

Escapism can be defined as the seeking out of distraction from your current reality, even for just a moment. This also defines why I make my art. To have the ability to be able to make someone to get lost in my piece and forget, just for a moment, their surroundings is ultimately what I strive for in each of my pieces. Creating a piece that evokes a whimsical emotion within someone on a deeper, possibly nostalgic level is my main goal. If I can get the audience to remember the joys of childhood and what their own imaginations can do for their happiness in a not-so-happy world, it will prove to me that my art is worth something more. *Ethereal Armor* explores this through the idea of taking something from a fictional world and bringing it to life in our real world. Through extensive research into some of the most popular fictional stories came the development of a fictional reality that is unlike our own in any way. *Ethereal Armor* stems from the creation of a coat of arms from a far-off planet, imitating the idea of what could possibly stand as a ceremonial coat of arms from another world. This process overall stems from the experimentation with multiple mediums of sculpting and digital art, to achieve the end goal of creating a piece that looks like it is from a story book.

Art & Design

DEPARTMENT OF CRIMINOLOGY & CRIMINAL JUSTICE



Michael Fraser

Criminal Justice

Influences of Police Line Officer Training: Jujitsu, Self-Efficacy, and Officer Perception

Co-Author(s): Dr. William Crawley, Dr. Amy Crawley

Faculty Mentor(s): Nicholas Buker

Lead Author Classification: UWF Graduate Student

Session: Main Oral Presenters

Session Time: 9:30-11:00; Location: Auditorium

Presentation Time: 9:30AM

Law enforcement officers (LEO) 'use of force' has become a prevalent topic of discussion in recent years. The public has voiced a need for more police training in defensive tactics and better management of stressful situations. Despite these calls for increased training, many law enforcement officers remain under-trained while simultaneously being asked to meet higher professional standards. The training program and accompanying research initiative under review herein addresses two problems of practice: 1) many traditional hand-to-hand techniques taught in LEO training have proven antiquated (e.g., many of hand-to-hand combat scenarios progress to ground encounters, reducing striking options and requiring enhanced grappling strategies), and 2) subsequent to initial training, often received at the novice stage (i.e., academy training), there are few requirements or support for ongoing and advanced hand-to-hand training. These issues have contributed to increasing reports of diminished officer self-confidence and stress management. The current presentation will report the effect of attending Gracie Survival Tactics (GST) on participants' self-efficacy, confidence, stress management, and perceptions of self-assessment on the related abilities of themselves and their peers. This training intervention is aimed at 1) improving officer self-efficacy and confidence during 'use of force' encounters, 2) enhancing self-perceived defensive tactics (DT) skills proficiency, and 3) improving self-perceived stress management during 'use of force' encounters. Following a review of the literature regarding defensive tactics and GST, quantitative data will be presented, followed by a discussion of policy and practice implications.

Ali Ramos Nichols

Criminal Justice

Mass Incarceration: The Impact the U.S. Prison System Leaves Behind.

Faculty Mentor(s): Kimiko Lumsden

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #23

Mass incarceration has always been a major player at the forefront of the corruption within the criminal justice system. From unjust sentencing to daily arrest quotas, the United States has become the home of the world's largest incarceration system ever seen. With the economy thriving off of the free labor

provided by prisoners, it is likely this country could stop flourishing without this corrupt system. But how does this affect you as an individual? How can you personally be affected by a system that you don't have to encounter one on one? A series of interviews and numerous sources can help to explain just how serious the impact of mass incarceration can be. And it just might change your outlook on the matter forever.



DEPARTMENT OF ENGLISH

Justin Bagomolny

Burnout in Nursing

Faculty Mentor(s): Kimiko Lumsden

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #13

I did this research and wrote this paper on burnout in nursing. It is a major problem throughout the nursing field especially throughout COVID and with the continuing nursing shortages. I spoke with and interview a nurse who experienced burnout and worked through it to get her masters degree and become a nurse practitioner. Throughout this research I discuss what she went through and ways to combat the problems.

Nicholas Mohlmann

Roundtable on History and Temporality in Contemporary Native Literature

Student Participants: Jordan Baxter, Keirstin Bureson, Austin Mason, Sophia Schriever

Faculty Mentor(s): Nicholas Mohlmann

Session: Roundtable Discussion

Session Time: 10:00-11:00; Location: Lounge

In this session, students from AML 4640: History and Temporality in Contemporary Native Novels will lead a roundtable discussion of the role that representations of time and history play in constructing narratives of Native survivance in a postmodern world. Students will consider work by N. Scott Momaday, Louise Erdrich, Leanne Howe, and James Welch as they explore the narrative strategies contemporary Native writers use to resist and counter dominant settler discourses that place the figure of the Indian firmly in the past.

Dane Christiansen

The Complexity of The Modern Day Recruiting Process

Faculty Mentor(s): Kimiko Lumsden

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #14

Over the past 20 years, the college soccer recruiting process has experienced massive change. Leading to the modern-day recruiting process is a very complex process. The college recruiting process is defined as the process in

English

English

English

which college coaches add prospective student-athletes to their roster each off-season. Measuring the complexity of the recruiting process is pretty simple the more players available the more complex the recruiting process will be for coaches In recent years, however, the recruiting process has had a massive rise in international student-athletes. A consequence of the rise in international student-athletes is that there are now more student-athletes available for coaches in the offseason. Making the recruiting process more complex. Another change in the recruiting process over the years is the transfer portal. Another aspect of college soccer that is new is the transfer portal. The transfer portal is a portal where college athletes can enter and change schools without any consequence. Other factors that have made the recruiting process more complex include gap years, the rise in internet access, etc. In my paper, we will discuss the rise of international student-athletes in college soccer and their effect on the recruiting process, go in-depth regarding the transfer portal and how it makes college recruiting decisions more complex, and go over primary research that I have conducted in a survey and interview to demonstrate how the recruiting process has become more complex in recent years.

Sarah Dickens

Strength Shown in Security

Faculty Mentor(s): Nicholas Mohlmann

Lead Author Classification: UWF Undergraduate Student

Session: Critical Methods for Literary Studies: Analyzing The Last of the Mohicans

Session Time: 9:00-10:00; Location: Lounge

The fictional novel *The Last of the Mohicans*, by James Fenimore Cooper, is set in the time frame of the French-Indian war in upstate New York. This novel reveals many different levels of hierarchy structures. One of these structures is the relatively progressive, for its time, perspectives on gender roles. Cooper presents two main female characters who vary in different standards of strength. The main female characters in this novel are the two sisters being escorted through the woods on their adventurous journey as they face many dangerous challenges. Of these two sisters, Cora, the older sister, is shown to have a higher level of strength, although both are still viewed as weaker compared to the male present in the narrative. Cora holds a considerable amount of strength in view of how most women were seen during this period. As the novel progresses, multiple layers of Cora's strength are shown in her self-security. Within the multi-layered character of Cora, the different progressive perspectives of women are shown in the text, revealing the strength shown within women despite the unequal hierarchy of gender roles exhibited at this time.

English

Sarah Dorr

"Poison 't near the head": Monstrous Masculinity in The Duchess of Malfi

Faculty Mentor(s): Kevin Scott

Lead Author Classification: UWF Undergraduate Student

Session: English Department Thesis Showcase

Session Time: 11:00-12:00; Location: Lounge

In John Webster's Jacobean revenge tragedy *The Duchess of Malfi*, the Duchess's corrupt brothers, Ferdinand and the Cardinal, imagine their sister as a "lusty widow" who has tainted their pure Arragonian blood by marrying her manservant Antonio in secret. Alternatively, Antonio proposes that the head

English

of the state is akin to a fountainhead vulnerable to poisoning from within, and several characters imagine the Cardinal and Ferdinand as demonic, poisonous figures corrupting the state. Thus, the Duchess's brothers cast her supposedly sinful female body as a threat to the good of the state while they themselves are the true tyrannical figures in power over the church and state respectively. I argue that the key issue in the play is the male characters' positioning of the female body and consequently affective marriage as well as a political system opposing a tyrant sovereign figure as demonic. However, the brothers use early modern cultural conceptions of the monstrous female body as the scapegoat for the true poison tainting the state: monstrous animalistic masculinity that is eventually exposed as the greedy, tyrannical force it is.

Makayla Ellison

What makes for an effective autism treatment plan?

Faculty Mentor(s): Kimiko Lumsden

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #15

Within the field of autism therapy, historical approaches have often been criticized for their coercive nature and failure to recognize the diverse needs and strengths of individuals on the spectrum. This paper examines the evolution of autism treatment methodologies, focusing on the transition from outdated, one-size-fits-all interventions to modern, person-centered approaches. Criticisms of past practices, including coercive behavior modification techniques and the neglect of individual autonomy, are addressed alongside the paradigm shift towards ethical, evidence-based care. Interview insights from Sarah Kent, a Board-Certified Behavior Analyst (BCBA), provide practical perspectives on effective treatment planning. Emphasizing individualization, parental collaboration, and the preservation of client dignity, Kent underscores the importance of holistic, respectful interventions. She highlights three key components of effective treatment plans: direct observational evidence, validated assessments, and informal evidence, which collectively inform tailored interventions aligned with individual goals and preferences. Furthermore, the paper advocates for the adoption of inclusive principles in autism treatment. Recognizing the multifaceted nature of autism, an inclusive approach prioritizes client dignity, individualized care, establishment of clear boundaries, and nurturing therapist-client relationships. By embracing inclusivity, practitioners aim to foster environments conducive to holistic well-being and long-term success for individuals on the autism spectrum. The significance of inclusion extends beyond individual treatment plans, encompassing diversity, ethical considerations, long-term success, collaboration, and positive societal impact. Ultimately, this paper emphasizes the importance of moving beyond restrictive and coercive practices towards inclusive, person-centered approaches in the treatment of autism.

Blake Gaither

The Complexities of US Trial Delays and the Right to a Speedy Trial

Faculty Mentor(s): Kimiko Lumsden

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

English

Location: Gather Town

Poster #16

This study investigates trial delays within U.S. court systems, focusing on the defendant's right to a speedy trial as described by the Sixth Amendment. Relying on the insight of Dr. Jennifer Brinkley, a law professor and attorney, this research studies the complex situation underlying trial delays and the right to a speedy trial. Dr. Brinkley provides expert advice and first hand experience in the subject matter, as she is both a legal studies professor and a licensed attorney who practiced for 13 years, granting her substantial experience on the topic. Her insight allows this research a more direct view of the subject with her firsthand accounts, and she helped to point towards raw data that is used to support the conclusion. Contrary to initial assumptions, defense attorneys will often leverage the control the 6th amendment grants them as needed in order to destabilize the prosecution's case or to optimize preparation time for their own case. The study also explores external factors influencing trial delays, including court congestion and mismanagement, as well as how these factors can vary based on region. This research also examines raw data on court case dates in Florida to investigate how often trials are delayed, and to determine the scope of the issue using real world examples. Finally, the research uses secondary sources to examine the historical context of trial delays to prove an extended and long term connection that has been unaddressed for decades.

Robin Blyn

Fictions of Globalization II

Student Participants: Kristy Garthwaithe, Rachel Juchniewicz, Cheryl Morris, Stephan Niznik

Faculty Mentor(s): Robin Blyn

Session: Roundtable Discussion; Session Time: 3:00-5:00; Location: Zoom (<https://uwf.zoom.us/j/84724844419?pwd=bUJrbmVYZE9oV3YyWGFIR3ZoZlBwQT09>)

This panel addresses the myriad ways that contemporary literature and film respond to the conditions of precarity that attend neoliberal globalization and the extent to which they conceive of alternative models of globalization that privilege social, political, and economic justice.

Maegan Grissom

The Construction of Violence Through Racial Superiority

Faculty Mentor(s): Nicholas Mohlmann

Lead Author Classification: UWF Undergraduate Student

Session: Critical Methods for Literary Studies: Analyzing The Last of the Mohicans
Session Time: 9:00-10:00; Location: Lounge

Throughout the early development of the United States, many conflicts broke out between competing European countries and, unfortunately, these kinds of conflicts led to the destruction of many Native Americans' homes and forced the various tribes to either align themselves with the colonizers or be killed by them. The lack of options worked to show how the white colonizers viewed themselves as superior to the native people since they believed the ways of the Native Americans were primitive, violent, and racially inferior to them. However, as North America became more settled and colonized, some developments in the way that the Native Americans were viewed began to take place. One such

English

English

English

writer who dealt with these topics extensively was James Cooper, who was widely known for his work *The Last of the Mohicans*. In the novel, Cooper does make several attempts to display Native American characters in a positive light, but mainly maintains a lot of the 'savage' ideals that were placed on the natives during this time; this ultimately makes his work of humanizing the Native Americans fall flat as it becomes clear that the white narrative of the novel is affecting their portrayal. In James Cooper's novel, *The Last of the Mohicans*, the use of a white narrative allows the book to construct an image of the Native Americans in a way that benefits the colonizers, which then displays how racial superiority is something based on power, not inherent nature.

Kate Holloway

The Future of Music

Faculty Mentor(s): Kimiko Lumsden

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #17

In the presentation titled "The Future of Music," I will take you on an informative journey through the Bachelor of Music Education (BME) major, emphasizing its significance in the education experience. This presentation will primarily focus on the BME program offered by the esteemed University of West Florida. My research on the subject has been based on the personal experiences of Kayla Neely, a UWF student, and myself. Additionally, I have conducted further research through the UWF and Florida School Music Association (FSMA) websites. This presentation will be highly beneficial for individuals who aspire to a career in music education.

English

Chase Jennings

Texas vs Federal Government Border Conflict

Faculty Mentor(s): Kimiko Lumsden

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #18

I am researching on the conflicts the Texas vs Federal Government has on citizens surrounding the border. I interviewed a close friend who has relatives that has experienced different situations dealing with crossing the border. I used a listing method to list off all the questions I have so I can keep track which ones I have asked during the interview. I also used the listing method to keep track of the most important parts of my subjects responses. The results I got is that generally if things are done properly the border will not cause conflicts to the person, but if done improperly and immigrating illegally, it can cause a lot of hassle and trauma. This is important so citizens who have not had the need to go through the immigration process can be more aware of how it works and the troubles it can cause if not done the right way.

English

Maggie Johnson

An Investigation on What Makes Cosplay Recognizable

Faculty Mentor(s): Kevin Scott

Lead Author Classification: UWF Undergraduate Student

English

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #12

Cosplay, a portmanteau of "costume" and "play" has increasingly become a major attraction of pop culture conventions worldwide. Cosplay combines both costume and performance to transform the cosplayer into the character they are portraying. This art form transcends the boundaries of media, with cosplayers performing as characters from film, animation, video games, music, and more. Despite its reputation as "weird year-round Halloween", cosplay as a form of expression can give creators of popular media an insight into how to make their characters more memorable to audiences (Cole, 2021, p.1). This mixed-methods study uses interviews with cosplayers to investigate what features of character design make a cosplay recognizable to other convention visitors. Using 55 interviews conducted over 2 days at this year's Pensacon, responses to the question "What is the most recognizable feature of your cosplay?" were coded into different categories. The preliminary findings indicated 7 main categories for what makes characters recognizable: color scheme, article of clothing, body modification, hairstyle, accessories, headpieces and masks, and weapons and staffs. These findings can lead to further speculation on how fans respond to representations of their favorite characters outside of their original form of media.

Robin Blyn

English

Fictions of Globalization I

Student Participants: Matthew Josephs, Leigh Mann, Calla Phillips, Zion Zeigler

Faculty Mentor(s): Robin Blyn

Session: Panel Discussion

Session Time: 1:00-2:30; Location: Lounge

This panel addresses the myriad ways that contemporary literature and film respond to the conditions of precarity that attend neoliberal globalization and the extent to which they conceive of alternative models of globalization that privilege social, political, and economic justice.

Julia Lepley

English

The Impact of Second Chance Laws

Faculty Mentor(s): Kimiko Lumsden

Lead Author Classification: UWF Undergraduate Student

Session: Main Oral Presenters

Session Time: 9:15-10:45; Location: Athens (rm 260)

Presentation Time: 10:15AM

My research is focused on the Impact that Second Chance Laws not only bring to a community but the country at large. Second Chance Laws are a new beginning for so many Americans. By implementing Second Chance Law we can provide an easier transition back to society, safety, economic increase, and a new sense of hope for released felons. Second chances are something I have always believed in so, when I came across these new laws I wanted to know more. By allowing criminal record expungement we can help millions of citizens re enter society. I have interviewed a professor of mine, as well as looked into personal stories people have shared about Second Chance Laws greatly impacting their lives. Second Chance Laws are so important because it allows for a multitude of new beginnings and a sense of hope for the future for so many.

<p>Jordyn Lott <i>The Impacts and Solutions to Coral Extinction</i> Faculty Mentor(s): Kimiko Lumsden Lead Author Classification: UWF Undergraduate Student Session: Virtual Presentation Location: Gather Town Poster #19</p> <p>Coral species worldwide are facing the threat of extinction. Today, around twenty-five species of coral are considered threatened with extinction. Many of the world's most incredible coral reefs have experienced mass degradation due to bleaching events. The increased degradation of coral is problematic for much of the ocean's ecosystem, may disrupt the economic functions of many coastal cities, and even increase the effects of shoreline erosion. Many people may not understand the value of coral reefs as an ecosystem and its importance to the balance of oceanic life. Despite this, everyone must be aware of this threat and strive to change for the better of the world.</p>	<p>English</p> <p>Payton Odea <i>Rhetorical Analysis on Developmentally Disabled Students</i> Faculty Mentor(s): Kimiko Lumsden Lead Author Classification: UWF Undergraduate Student Session: Virtual Presentation Location: Gather Town Poster #21</p> <p>My presentation discusses an interview that took place with Jill O'Dea. Jill O'Dea works on the board of directors for a developmentally disabled facility, along with working in special education classes. I interviewed her to help bring more information to students on the realities of working, living, and dealing with a special needs student, both in the adult and child range. Through asking her hard hitting questions, I was given much information on the difficulties that teachers, parents, and volunteers work through everyday. I was given so much information that it made finding secondary sources kind of difficult. Luckily, through further research, I was more capable of diving into the topics my mother was discussing. Specifically regarding certain laws and tests that allowed more freedom to have physical or mental ailments. Along with my struggle for secondary information, I was capable of researching deeper on the earliest ways to test a child on if they have a disability. After researching my topic, I took to writing. Writing this paper was decently easy because my paragraphs bridged together nicely. This was highly beneficial whenever I was forming my questions because I could narrow down my topics and already envision my paragraphs, and how I would make them blend together. Once I finished my paper, I had it peer reviewed by a fellow student in my class and took his feedback. This paper is not incredibly long, but it is a deep well of information that I was lucky enough to hear and be able to impart on those who read it.</p>
<p>Emily Morales <i>Strategies for Maintaining Resilience in the Face of Adversity</i> Faculty Mentor(s): Kimiko Lumsden Lead Author Classification: UWF Undergraduate Student Session: Virtual Presentation Location: Gather Town Poster #12</p> <p>The coronavirus pandemic of 2019 significantly impacted societies worldwide. The pandemic brought tremendous challenges to people regardless of their discipline. As cases continue to rise, healthcare facilities have been overwhelmed with patients seeking medical attention. The strain on hospital resources, including beds, ventilators, and healthcare workers, became critical. Moreover, the psychological impact on ICU nurses was excruciating. They had to go through emotional exhaustion and trauma, increased workload, and burnout. This paper will address the numerous psychological consequences of the pandemic on frontline healthcare workers, an academic student, and health promotion specialists; the discussion will emphasize resilience-building strategies. It also will discuss how I, as a Respiratory Therapist, experienced the pandemic. The literature review shows that stress, burnout, and moral distress result from elevated workloads, particularly among professional nurses in the healthcare sector. Qualitative interviews give actual descriptions by people that make it clear that an extensive support network of family and friends themselves, self-care activities like meditation, journaling, exercising, and being a leader play an essential role in life's resilience. Student participants examine the disadvantages of remote education, such as poor communication and academic pressures, by highlighting the importance of self-care, interpersonal interactions, and social support. Through all this, the pandemic has revealed the need for personalized interventions and resources for grassroots workers, students, and educational promotion professionals to cope with mental distress. Recovery policies and resilience approaches aimed at risk mitigation, mainly psychological, serve as a protective measure against the adverse impact of COVID-19.</p>	<p>English</p> <p>Marissa Pettit <i>Prescription Opioid Addiction</i> Faculty Mentor(s): Kimiko Lumsden Lead Author Classification: UWF Undergraduate Student Session: Virtual Presentation Location: Gather Town Poster #22</p> <p>For this research paper I wanted to know all about prescription opioid addiction. Diving into what exactly causes these addictions how they got so bad, what can be done to prevent them, etc. To find all the answers I interviewed two people, an emergency room nurse who works with doctors who prescribe opioids on a daily basis, and a family member of a person who recently lost their life to an opioid addiction. I found that these addictions often begin with doctors overprescribing opioids then addicts turning to the streets for more and stronger drugs. This topic is so important as thousands of people lose their lives to addiction and college students are at risk being exposed to drugs everyday, it is important to spread awareness of this issue to get it under control before it goes to a point of no return.</p> <p>Cole Sahr <i>Why is Graphic Design Important?</i> Faculty Mentor(s): Kimiko Lumsden Lead Author Classification: UWF Undergraduate Student</p>

Session: Main Oral Presenters**Session Time: 11:00-12:30; Location: Athens (rm 260)****Presentation Time: 12:15PM**

Why is Graphic Design important? First, what is Graphic Design, graphic design is the art or skill of combining text and pictures in advertisements, magazines, or books. So that includes wayfinding signs (the signs used at hospitals) Street signs, Posters such as movie posters, and event posters like the ones you see around the UWF campus. Graphic design is also used as an umbrella term. Under the word, graphic design are careers such as web design, UI/UX design, illustration design, comic book design, typography, game design, motion graphics, and animation. Graphic design is all around us; we use it every day of our lives and consume it every day. One of the types of graphic design I mentioned is Typography, well what is that? Typography is the study of, arranging letters and text to make the copy legible, clear, and visually appealing to the viewer. Looking at your favorite television show's title See how they use the text or words to reflect that of the show is it bold and in color red like Grey's Anatomy or does it have a simple text with a sense of an old-world charm like that of the series Downtown Abbey. Some of the earliest examples of graphic design is that of Cave paintings, followed by the next great invention of printing. The three main purposes of Graphic design for any project to be successful are communication, function, and aesthetics. Hopefully, just this little bit can help you understand why graphic design is important and another reason why it's in constant demand.

Christopher Satterwhite***International Collaboration in Zines from UWF to the UK*****Co-Author(s): Brandon "Grover" Ballard****Lead Author Classification: UWF Faculty Member****Session: Main Oral Presenters****Session Time: 9:30-11:00; Location: Auditorium****Presentation Time: 10:15AM**

In 2023, Professor Mark Gubb of Coventry University in the United Kingdom and Professor Scott Satterwhite at UWF began international collaboration projects that took student writing to an international stage. Both Gubb and Satterwhite cut their teeth as artists in the punk scenes of the 1990s and have now taken this work into the classroom through the literary medium of punk culture—zines. As the emerging field of Zine Studies grows, professors across the globe have brought zines into the classroom, and Gubb and Satterwhite are no exception. Yet where their work stands out is in the overseas collaboration. From the first day of class, UWF students prepared creative writing projects, based on personal experiences, and exchanged the writing with their colleagues at Coventry University in the UK. The UK students used their writing to create a visual rhetoric through collage and design, merging the student writing with student design to create the international publications that are unique in both format and intention. These zines are currently on display at the Alabama Contemporary Art Center. To continue their work, in 2024 Professor Grover Ballard joined Satterwhite and Gubb as they began a new semester by expanding the project, bringing in another UK professor. In this presentation, Ballard and Satterwhite will discuss the benefits and challenges of international collaboration, ideally as the second round of zines arrives in the U.S. Furthermore, both UWF professors will show examples of the international zines and show how similar projects could work at UWF.

English

Brad Simmons***Surgical precision*****Faculty Mentor(s): Kimiko Lumsden****Lead Author Classification: UWF Undergraduate Student****Session: Virtual Presentation****Location: Gather Town****Poster #24**

High risks of failure of surgical tools to safety and effectiveness of patients involve a wide range of factors and this necessitates a deep understanding of the causes, impacts, and potential measures to address this. This article covers surgical tool failure from different angles through the comprehensive examination of interacting technological advancements, surgical methods, and patient characteristics. Taking a view of the complications associated with surgical instrument failure (particularly dulling knives, breakage, and manufacturing defects) within the context of the existing literature, the study provides the underlying issues with surgical tool failure. The role of surgeons and residents in today's operating room is also explored. As the article points out, these challenges can have significant implications for patient safety, surgical outcomes, and healthcare delivery. Besides that, the paper is also concerned with novel solutions for surgical tool hiccups, for example, using the application of surgical safety checklists and further development of robot-assisted surgery. By a detailed study of the development of robotic surgery and its relevance to modern surgical practice, the research gives an insight into ways a well-advanced technology can help with risk-reducing failures in surgical tools and bring about perfect patient care. This paper highlights the contemporary direction and future developments concerning surgical tools and furnishes precise recommendations for the upgrade of surgical interventions in clinical settings to ensure effective results. Our studies reveal the multi-dimensional problems of the tool failures in the surgical operations such as the dullness of the blades to the structural failures and defects that could be discovered during the manufacturing of the tools. Consequently, via a combination of the well-studied literature and the already conducted research, we get the picture of the adverse influence of these obstacles on patient safety, surgical outcomes, and the whole quality of healthcare delivery.

English

Ivey Simpson***The Scenic Painting Industry: A First-Hand Account and Expectations*****Faculty Mentor(s): Kimiko Lumsden****Lead Author Classification: UWF Undergraduate Student****Session: Main Oral Presenters****Session Time: 2:00-3:00; Location: Auditorium****Presentation Time: 2:00PM**

The scenic painting industry can be a difficult field to navigate. Despite how simple it seems, a lot goes into it beyond basic painting skills. By interviewing Holly Komula, a professor and scenic painter at UWF, I gained insight into the scenic painting industry. She discussed the expectations of the professional world, such as the skills required to succeed and how to handle the "hustle culture" of show business. In addition, she also discussed how the industry impacted her personal and family life. Through her experience, I hope to give advice to aspiring scenic artists and possibly help others consider a career in the industry.

English

Elizabeth Tannous***Analysis of Intergenerational Trauma in Americans and Immigrants*****Faculty Mentor(s): Kimiko Lumsden****Lead Author Classification: UWF Undergraduate Student****Session: Main Oral Presenters****Session Time: 11:00-12:30; Location: Athens (rm 260)****Presentation Time: 11:45AM**

After careful analysis of my family roots, history and trauma, I choose to create a dynamic paper regarding the effects of intergenerational trauma on Americans and immigrants. Intergenerational trauma is a unique and relatively new idea within psychology where the frightening exposure to a traumatic event alters the generations that survivors produce in following years. I conducted my research on psychological papers, family documents, news articles, and a retelling of my grandparents' experiences in war. I also interviewed my own father to better understand the role that trauma plays in individuals upbringings. Each of these aspects of research created a clear picture of the cause and effects of intergenerational trauma on my personal life; whether reflects the Arab American perspective of life; or the lives of countless American and immigrant generations. The results of my research compiled into a devastating truth of mental illness, substance use, abuse, and unforeseen challenges of the children and close relatives of survivors of traumatic events. In conclusion, my analysis of intergenerational trauma on Americans and immigrants displays a collective understanding of the results of our populations mistakes and atrocities, and how it further effects the population to come.

English

● sentimentality, he grows to respect both David and David's beliefs. This
 ● demonstrates how the typical survival of the fittest mindset is willing to accept
 ● gentle Christian values, provided such values are willing to evolve.

Meredyth Watkins***David and the Giant: An Examination of Religion in The Last of the Mohicans Through the Character of David Gamut*****Faculty Mentor(s): Nicholas Mohlmann****Lead Author Classification: UWF Undergraduate Student****Session: Critical Methods for Literary Studies: Analyzing The Last of the Mohicans****Session Time: 9:00-10:00; Location: Lounge**

This essay examines the role of David Gamut in *The Last of the Mohicans*, specifically how he represents the development of Christian ideas during the expansion of the American frontier. Despite his position as a primary character, David Gamut holds little personal stake in the narrative, instead frequently being relegated to minor comedic scenes. However, because of this reduced personal role and as the only character with an identity based in Christianity, David is able to serve as a narrative representation of the early flaws of religious ignorance and tenderheartedness through his interactions with the dangerous wilderness. This essay closely examines David's various scenes, such as his introduction, the execution of his pony, his musical outburst during the attack at the fort, and his determination to face Magua, in order to chart his growth as a character across the novel. Through specific religious allusions and references within these scenes, David's character developments parallel the development of his Christian beliefs. Instead of rejecting his Christianity or stubbornly holding to his opinions, these scenes demonstrate how Christianity itself can adapt to thrive in hostile environments. This essay also uses commentary from Hawkeye, a brutal survivalist with a passive view on religion, to represent the wilderness perspective of David's growth. While Hawkeye initially resents David's Christian

English**Hannah Wetherell****English*****What Is The Importance of Historical Conservation*****Faculty Mentor(s): Kimiko Lumsden****Lead Author Classification: UWF Undergraduate Student****Session: Virtual Presentation****Location: Gather Town****Poster #25**

● Historical preservation can be a very multifaceted issue, but is critical to our
 ● understanding of the past. Especially in the public and commercial spheres it
 ● can ride a fine line between the need to preserve our shared past, and the need
 ● to change and evolve for the sake of the future. I have spoken on this subject
 ● with Lori McDuffie, a collections manager for the UWF Historic Trust. Historic
 ● preservation can range from a wide number of things, from the general upkeep
 ● and maintenance of historic sites and buildings, to detailed repairs on artifacts. A
 ● large part of Pensacola's history can be seen within its variety of historical sites
 ● and buildings. Preserved artifacts give more perspective to modern thinking,
 ● on the subject of history. They add another layer to the written historical record
 ● as confirmation and concrete evidence of recorded happenings. Historical
 ● conservation of the artifacts and sites also adds to the modern culture, such as
 ● through art and architecture. What would our modern life look like without the
 ● ancient Grecian style that would in turn influence the Romans, and then in turn,
 ● a large part of the Western world, throughout the ages. This influence can even
 ● be seen in the historical homes of Pensacola, with columns and Romanesque,
 ● Regency period furnishings.

Adam Williams**English*****"Natural Things Would Make More Sense": Black Hole as Neo-Pastoral*****Faculty Mentor(s): Kevin Scott****Lead Author Classification: UWF Graduate Student****Session: English Department Thesis Showcase****Session Time: 11:00-12:00; Location: Lounge**

● In an epigraph in Charles Burns's *Black Hole* #11, a teen provides one of twelve
 ● retrospective accounts of the events of *Black Hole*'s narrative. The teen proclaims
 ● that "[Humanity would] be happy if we could live simple lives, enjoy each other
 ● and... I mean maybe live on a farm or something and grow things... You know,
 ● get back to the Earth." The teen's statement along with the teens' framing
 ● of *Planet Xeno* as a "soft, insulated green world" invokes the language of the
 ● classical literary mode of the pastoral. However, *Black Hole*'s invocation of the
 ● pastoral mode and its binary of country and city is a far cry from the traditional
 ● pastoral as its pastoral idyll is fractured from the start because of the increasingly
 ● modernized world that no longer facilitates a rural existence. In the graphic novel
 ● publication of *Black Hole*, though, the epigraph setting out the teens' displeasure
 ● with life in the city and penchant for the rural is no longer present, leaving only
 ● the pastoral mentions found in the story. This omission, I argue, is paramount
 ● when interpreting *Black Hole* among landmark pastoral works: it not only
 ● suggests that Burns's neo-pastoral exists as an ongoing index of the modernity

that began the initial fracturing of the pastoral form but also suggests that this lack of retrospection reveals that the end of the pastoral in the graphic novel is a visible end of the pastoral dream and the end of futurity as we know it.

Sean Williams

English

Twain's West: The Rhetoric of the Wild West in Twain's "Roughing It"

Faculty Mentor(s): Kevin Scott

Lead Author Classification: UWF Graduate Student

Session: Main Oral Presenters

Session Time: 11:00-12:30; Location: Athens (rm 260)

Presentation Time: 12:00PM

Much of *Roughing It* explores the extent and results of the then-nascent forays into the West. The text visits places on the fringes of American civilization on its way to place the narrator and his brother in positions of legal authority in the Nevada territory, associating the text's adventure narrative with the subjugation of the "uncivilized" West to the laws of the "civilized" East. This disparity between the two is at the heart of the West as it appears in *Roughing It*. Frederick Jackson Turner's *Frontier Thesis* notes a similar disparity as he looks back at Westward expansion: "American social development has been continually beginning over again on the frontier...the frontier is the outer edge of the wave – the meeting point between savagery and civilization" (Turner Thesis). That the frontier is a place "between savagery and civilization" points toward the notion that civilization and the natural world (my way of referring to "savagery") are not only separate but also at odds, with civilization being the ultimate end to the natural world, an unstoppable progression that Turner suggests is necessary for the American identity. If we look at the history of American Westward expansion, we can see this cultural development occur with each expansion toward the Pacific coast. The image of self reliance, of the cowboy and frontiersman, of a burgeoning city struggling to survive are all paramount to the history of American expansion even as they are predicated on violent encroachment of Native lands and environmental exploitation. In a similar manner, *Roughing It* presents the West as a natural space ripe for exploitation. I will explore that natural space as it appears in *Roughing It* and how it creates a rhetorical West that, in its use as an end for the narrator and his brother, presupposes that the West is American land.

Marcus Archer

English

The Effect of College Expectations

Faculty Mentor(s): Kimiko Lumsden

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #18

This paper looks at how students feel about college before they start and how it affects their experience. By talking to different students and reading articles, it explores what they expect and how it shapes their time in college. It finds that having realistic expectations helps students do better and enjoy college more. It also looks at whether students know about and use the help offered by colleges. The paper shows that many students don't know about these services or don't use them, even though they could be helpful. It suggests that colleges should pay attention to students' expectations and make sure they know about the support

available. Overall, the paper highlights the importance of understanding students' feelings and providing the right support to help them succeed in college.

Natalie Duphiney

English

Feminist Spaces

Co-Author(s): Jurnee French, Ashley Byrd

Faculty Mentor(s): Robin Blyn

Lead Author Classification:

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #19

Feminist Spaces is an online, interdisciplinary academic journal that invites students, faculty, and independent scholars from institutions worldwide to submit formal essays, creative writing, and multimodal artistic pieces per our annual Call for Works. The journal is published by the Department of English at the University of West Florida and designed by the Department of Art and Design at the University of West Florida. Each issue of the journal is conceived, managed, edited, and designed by UWF students under the guidance of faculty advisor Robin Blyn.

REUBIN O'D ASKEW DEPARTMENT OF GOVERNMENT



Maggie Brown

Government

Evaluating Great World Leaders in the 20th Century

Co-Author(s): Gavin Knettle, Anthony Ruse, Gracie Whitley

Faculty Mentor(s): Alfred Cuzan

Lead Author Classification: UWF Undergraduate Student

Session: Great World Leaders

Session Time: 2:00-3:00; Location: Nautilus Chamber

In this panel, all four presenters will be comparing "great" world leaders from the 20th century to the leadership qualities of Machiavelli's *The Prince* and Henry Kissinger's book *Leadership*. Listed below are a short summary of each presenter and their leader: Maggie Brown: This paper analyzes the political life of the first President of the contiguous Philippines, Manuel L. Quezon, and draws comparisons between Quezon's leadership and that of Charles de Gaulle and Konrad Adenauer in how all three leaders re-united their nation after significant internal and external turmoil. Anthony Ruse: This paper analyzes the leadership dynamics of D.S. Senanayake and compares the early Sri Lankan administration to that of Lee Kuan Yew in Singapore. The ability of these leaders to adapt to gaining independence in reference to Machiavelli and Kissinger's ideals of leadership would determine the fate of their nations. Gracie Whitley: This paper seeks to analyze and detail Éamon De Valera's life as a political leader of an emerging nation at a time of deep political turmoil. In analyzing his life and his choices as President of Ireland, this paper compares Niccolo Machiavelli's ideal prince and Henry Kissinger's ideal statesman to determine if Éamon De Valera can be historically regarded as a great world leader. Gavin Knettle: This paper analyzes the leadership of Mustafa Kemal Atatür and his role in founding the Republic of Turkey, explaining both his transformative deeds and shortcomings.

Gavin Knettle**Government*****Mustafa Kemal Atatürk: Leadership as it was under the Father of Turks*****Faculty Mentor(s): Alfred Cuzan****Lead Author Classification:****Session: Great World Leaders****Session Time: 2:00-3:00; Location: Nautilus Chamber**

This paper analyzes the leadership of Mustafa Kemal Atatürk and his role in founding the Republic of Turkey, explaining both his transformative deeds and shortcomings. The paper also focuses on comparisons to Machiavelli's *The Prince* and Henry Kissinger's *Leadership*.

Lanie Knight**Government*****The Educational Philosophies of Plato and Aristotle*****Faculty Mentor(s): David Ramsey****Lead Author Classification:****Session: Political Philosophy and the Question of Regime****Session Time: 12:00-1:00; Location: Nautilus Chamber**

Explores the views of Plato and Aristotle on the role of education in forming political associations as developed in the *Republic* and *Politics*. Concludes with considerations on the relationship between education and political association today.

Eli Mace**Government*****Fear and the Death of the Just*****Faculty Mentor(s): David Ramsey****Lead Author Classification:****Session: Political Philosophy and the Question of Regime****Session Time: 12:00-1:00; Location: Nautilus Chamber**

Xenophon, Plato, and Augustine offer competing perspectives on the consequences of living a just life. Whether the just man should fear death and what comes after are up for general debate, but they all come to the same conclusion that people who live according to justice should welcome death when it comes because the afterlife cannot possibly be painful for those who live the good life.

Emily Mariani**Government*****On Happiness*****Faculty Mentor(s): David Ramsey****Lead Author Classification:****Session: Political Philosophy and the Question of Regime****Session Time: 12:00-1:00; Location: Nautilus Chamber**

Examines the treatment of human happiness Plato's *Republic* and Augustine's *City of God*.

Anthony Ruse**Government*****Interplay and Strategy in the NATO Cybersecurity Landscape*****Faculty Mentor(s): Jacob Shively****Lead Author Classification: UWF Undergraduate Student****Session: Main Oral Presenters****Session Time: 9:15-10:45; Location: Athens (rm 260)****Presentation Time: 9:15AM**

This presentation explores the web of cybersecurity policies within NATO member states, analyzing their interconnectedness and mutual influence. Through comparative analysis, it highlights commonalities and divergence in employed strategies, offering insights crucial for fostering collective resilience and coherence in addressing emerging cybersecurity threats.

Anthony Ruse**Government*****Leadership Dynamics: D.S. Senanayake vs. Lee Kuan Yew*****Co-Author(s): Maggie Brown, Gracie Whitley, Gavin Knettle****Faculty Mentor(s): Alfred Cuzan****Lead Author Classification: UWF Undergraduate Student****Session: Great World Leaders****Session Time: 2:00-3:00; Location: Nautilus Chamber**

This paper analyzes the leadership dynamics of D.S. Senanayake and compares the early Sri Lankan administration to that of Lee Kuan Yew in Singapore. The ability of these leaders to adapt to gaining independence in reference to Machiavelli and Kissinger's ideals of leadership would determine the fate of their nations.

Anthony Ruse**Government*****Interplay and Strategy in the NATO Cybersecurity Landscape*****Faculty Mentor(s): Jacob Shively****Lead Author Classification: UWF Undergraduate Student****Session: Foreign Policy and the American Political Tradition****Session Time: 1:00-2:00; Location: Nautilus Chamber**

This paper explores the web of cybersecurity policies within NATO member states, analyzing their interconnectedness and mutual influence. Through comparative analysis, it highlights commonalities and divergence in employed strategies, offering insights crucial for fostering collective resilience and coherence in addressing emerging cybersecurity threats.

Brandon Sessions**Government*****Alexander Hamilton's Principles on Foreign Policy: Russian Invasion of Ukraine*****Faculty Mentor(s): Jacob Shively****Lead Author Classification:****Session: Foreign Policy and the American Political Tradition****Session Time: 1:00-2:00; Location: Nautilus Chamber**

In 1793, Alexander Hamilton advocated for neutrality during the war between France and Great Britain under the pseudonym "Pacificus." His arguments relied on fundamental principles, which are still relevant in today's context. These principles suggest that Hamilton would encourage the United States to support Ukraine's defensive war against Russia.

Kaitlyn Stephens**Government*****Using a GSA Framework: Analyzing the Grand Strategy of Sweden*****Faculty Mentor(s): Jacob Shively****Lead Author Classification: UWF Undergraduate Student****Session: Foreign Policy and the American Political Tradition****Session Time: 1:00-2:00; Location: Nautilus Chamber**

This paper employs Grand Strategy Analysis (GSA) to study Sweden's application to NATO, reframing Swedish grand strategy in terms that will be readily

comparable across other cases and arguing that Sweden's grand strategy is not ad hoc, but relatively consistent over time.

Riley Warrick

The Poets and the Philosophers

Faculty Mentor(s): David Ramsey

Lead Author Classification:

Session: Political Philosophy and the Question of Regime

Session Time: 12:00-1:00; **Location:** Nautilus Chamber

The paper focuses on comparing the position of the arts in society as seen by the ancient political philosophers Aristotle and Plato. Aristotle seems to have a more inclusive role for the arts, while Plato seems to be skeptical of their value. However, both value political philosophy and the pursuit of the good life.

Government

Gracie Whitley

The Life and Leadership of Éamon De Valera

Faculty Mentor(s): Alfred Cuzan

Lead Author Classification: UWF Undergraduate Student

Session: Great World Leaders

Session Time: 2:00-3:00; **Location:** Nautilus Chamber

This paper seeks to analyze and detail Éamon De Valera's life as a political leader of an emerging nation, at a time of deep political turmoil. In analyzing his life and his choices as President of Ireland, this paper compares Niccolo Machiavelli's ideal prince and Henry Kissinger's ideal statesman to determine if Éamon De Valera can be historically recognized as a great world leader.

Government

Aubrey Young

The Weight of Primacy: The Evolution of American Foreign Policy

Faculty Mentor(s): Jacob Shively

Lead Author Classification:

Session: Foreign Policy and the American Political Tradition

Session Time: 1:00-2:00; **Location:** Nautilus Chamber

Analyzes historical debates on the role of the United States in the international system, tracing the evolution of foreign policy through the twentieth century. Argues that evolution is a combination of intent and fortuitous circumstances, with foreign policy adapting reactively to the troubles of the twentieth century.

Government

DEPARTMENT OF HISTORY & PHILOSOPHY



Lane Brooks

The Origins of PensaPride: From Emma Jones to Grassroots Pensacola (1954 - The 2000's)

Faculty Mentor(s): Erin Stone

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; **Location:** Conf Room AB

Presentation Time: 1:00-2:00; **Poster #13**

When considering LGBTQ+ Pride in Pensacola, people often think of Memorial

History & Philosophy

Day Weekend or summertime Pride Celebrations. However, the general public rarely discusses the local histories of these annual festivals. In 1957, a group of gay men started a book club. This club evolved into the Emma Jones Society, the precursor to PensaPride. The Emma Jones Society rapidly increased in popularity. They hosted Pride celebrations for gay men and lesbian women under the patriotic guise of Independence Day. Despite intense homophobia, transphobia, and racism, queer individuals celebrated annually for nearly twenty years. The society disbanded in 1974 following a devastating July 4th police raid. Still, the fight for freedom of sexuality continued. An analysis of the promotion and growth of Pensacola's queer population reveals an audacious community that values education, political representation, and support. The presentation utilizes newspapers, government reports, self-published pamphlets, novels, and secondary scholarship to explore the development of a local marginalized community, a topic particularly relevant in the contemporary political climate.

Erin Stone

Exploring Historical Research

Student Participants: Lane Brooks, Jackson Freeman, James Seabrooke, Allison

Spradlin, and Hanna Torino

Faculty Mentor(s): Erin Stone

Session: Panel Discussion

Session Time: 11:00-12:20; **Location:** Auditorium

Graduate students in the History MA program will be presenting their yearlong primary sources-based research projects on a variety of topics. Their presentations range across centuries and continents and touch on themes from sexuality to medicine and the environment.

History & Philosophy

Norma Brown-Duncan

Philosophy in Japanese Society: Foundation of Cultural Norms

Faculty Mentor(s): James Simpson

Lead Author Classification: UWF Undergraduate Student

Session: Main Oral Presenters

Session Time: 12:15-1:15; **Location:** Great Hall

Presentation Time: 12:45PM

"Foundations of Society: Understanding Japanese Philosophy and Perspective" is a research film composed of my research summaries from my work in Japan. My research explored the philosophical underpinnings of Japanese society and the interplay between Eastern and Western philosophies, furthered by conducting in-depth interviews with individuals possessing bicultural and tricultural experiences. Through coursework, cultural immersion, and philosophical studies, I was able to expand my knowledge and gain a deeper understanding of the foundations of the Japanese society and relate it to other societies. My research aimed to create a bridge between these different cultures by illuminating the moral and philosophical foundations that underlie cultural differences. By presenting my research in the form of a film, I aim to engage the audience in a visually compelling and thought-provoking experience. Through and through, in academic spaces, you hear "We are still working on understanding the cultural differences." or "We're still working on understanding how culture skews this data." Often this data does not include populations that aren't White. I want to understand the lack of cultural research, work on it, and start to explain it.

My research is not a conclusive endpoint, but rather a steppingstone for future explorations. I intend to continue delving into the foundations of society to foster a deeper understanding between different cultures, comprehend moral upbringings, and establish a stronger foundation for therapy in diverse cultural contexts in hopes of inspiring a dialogue that will contribute to the growth of intercultural understanding and collaboration.

Jackson Freeman

History & Philosophy

Paradise Lost: Apalachicola Bay's Fight to Keep their Oyster

Faculty Mentor(s): Erin Stone

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #15

The oyster industry at Apalachicola Bay once produced 90% of the oysters gathered from Florida waters; today, the Bay is closed off to the oyster harvesters that dominated waterfront years before. Despite this industry's historical significance to the region as well as the industry's messy and public collapse, little scholarship exists that focuses on the men and women who composed the oyster industry of Apalachicola Bay. My project aims to tell the story of the Apalachicola Bay oyster industry's collapse from 1980 through 2021, with most of the attention given to how it affected the oystering families and others related to the industry. My project also focuses on the actions that those in the oyster industry took to change the worsening condition of the Bay through various public campaigns and initiatives. I will look at newspapers written about relevant subject matters that obtained insight from oyster industry workers, scientific studies focusing on conditions in the Bay, interviews with oystering men and women, legal proceedings, and statements made by organizations representing the oyster industry to give agency to the seafood workers of the Bay. The oystering families of Apalachicola spent 40 years trying to reverse drastic changes that brought their industry crashing down. However, worsening environmental conditions and poor political maneuvering from Florida's Senators left them fighting a losing battle. Despite their best efforts, the state of Florida closed the Bay in 2020, leaving the few remaining workers searching for answers. In conclusion, the project uses various source materials to show the fight by industry workers and leaders to save the Bay's oysters.

Samantha Hatley

History & Philosophy

From Sharecropping to Poverty

Faculty Mentor(s): Joyce Southard

Lead Author Classification: UWF Undergraduate Student

Session: Main Oral Presenters

Session Time: 9:30-11:00; Location: Auditorium

Presentation Time: 10:30AM

The post-Civil War sharecropping system profoundly impacted society, particularly in the South. The institution perpetuated economic dependence and poverty, disrupted community cohesion, and limited educational opportunities. Sharecropping shaped a distinctive cultural identity rooted in communities' shared struggles. Current research on sharecropping attacks the institution within its existence, from the end of the Civil War until roughly the Great Depression.

However, this research focuses on the cultural implications permeating society into the modern day. This research uses various data from primary sources and interpretations of that data. It will also investigate statistics from cultural development and economics. This research will show that contrary to certain opinions, the institution of sharecropping is a major factor in why the South has never recovered economically from the Civil War. First, we will dive into the history of sharecropping and how it was structured. We will plunge into the dynamics of the landowners and the sharecroppers. Second, we will investigate the data. This investigation will lead us to develop ideas on how the institution of sharecropping perpetuates poverty for multiple reasons. Third, we will examine the cultural implications of sharecropping and its effects on multigenerational poverty and cycles of debt. Finally, we will see how the research has led us to say that the institution of sharecropping has led to poverty in the South and is a proponent of why the South never fully recovered from the Civil War.

JP Peters

History & Philosophy

Soldiers' Life as a Lens for Empire Collapse: Roman Legions and the Medieval Armies that Followed

Faculty Mentor(s): Marie Champagne

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #21

Few depend upon society, and what that society can or cannot provide, more than soldiers in the field on behalf of their civilization. They are entirely focused upon moving, encamping, and fighting, unable to dedicate time to sustainment and production for their own support. For this, they depend upon the civilization that sent them into the field, and thus are immediately susceptible to any changes, or even collapses, of that society. As such, an analysis of the conditions a Roman legionnaire faced in the field, compared with those faced by medieval armies several hundred years later is an opportunity for a stark comparison of what the collapse of the Roman empire meant for the typical soldier, and another means of understanding society writ large in Europe during the medieval period. This project examines the effects that the collapse of the Roman Empire had upon the daily lives of soldiers on campaign, showing that the standing professional armies of Rome enjoyed a better quality of life while in the field than did the levy armies of Medieval Europe after the fall of Rome. At the heart of this analysis lies the professional logistic systems of the Romans, and the lack of this logistic support system for Medieval armies, such as those that fought during the Crusades. Logistics has decided the course of history and defined the human condition innumerable times.

Nic Reagan

History & Philosophy

A Weighty Metal: Lead Poisoning in the Middle Ages

Faculty Mentor(s): Marie Champagne

Lead Author Classification: UWF Graduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #8

Lead has long caused disease and death to those unaware of its harmful

properties. This was particularly true in the Middle Ages. It was consumed in food and drink, used medicinally, and slathered on the skin as a cosmetic. Because of its high rate of use among the elite, it may have even been to blame for periods of social instability. This research considers historical documents and archaeological evidence to reveal the harmful role lead has played in the past among an unassuming public.

James Seabrooke

History & Philosophy

Hadassah: Jewish Women and Humanitarianism in Pensacola

Faculty Mentor(s): Erin Stone

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #16

In 2023, the Pensacola Jewish Federation donated \$150,000 to Israel after the October 7th Hamas attack. Although such a large sum might be considered a significant contribution, it hardly scratches the surface of Pensacola's Jews and their humanitarian efforts for Israel. Jewish women were essential to the Zionist movement in Pensacola from 1947 to 1971. The local Pensacola chapter of Hadassah supported Israel through tea lunches, "linen showers", and various events throughout the mid-twentieth century. The most significant fundraising event in Hadassah's local history was the "Night of Stars", a talent show hosted by local entertainers that featured performers from various backgrounds across the Greater Pensacola Area. Members of Hadassah contacted Chambers of Commerce members, local newspapers, and other affluent individuals and businesses to support and increase publicity for the Night of Stars. The event's talent acquisition and organizational process followed a year-round cycle that closely monitored potential acts throughout the Atlantic coast of the United States from Florida to New York. The Night of Stars was hosted for a quarter of a century. It was intertwined with the city of Pensacola and the community's overall support of the Zionist movement, led by the sisterhoods of Beth-El and B'nai Israel.

Allison Spradlin

History & Philosophy

Leprosy of the Middle Ages: A Catalyst for Social Neglect?

Faculty Mentor(s): Erin Stone

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #17

The societal treatment of individuals with leprosy in the Middle Ages has been widely debated with many scholars arguing that these individuals were either shunned or embraced by society. However, the scholarship thus far has not addressed which, if any, of these main arguments are correct. My paper explores how the treatment of these individuals may have differed depending on the region or location they were in; thus, arguing that there was not one uniform experience held by those with leprosy. I explore the laws set by the government(s), as well as regulations for leprosaria, or leper houses, to help determine the experience that these individuals had in different locations. I

also explore secondary sources over time to examine how historiographical perceptions have changed, and why. I argue that the location in which these individuals resided directly affected their experience in society. In conclusion, this project examines laws and regulations of the Middle Ages to help determine how they varied geographically. These differences in law and regulation helped to impact the experience of individuals with leprosy.

Allison Spradlin

History & Philosophy

Medieval Surgery: Preserver of Life or Harbinger of Death?

Faculty Mentor(s): Marie Champagne

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #22

Medieval surgery, including battlefield surgery, and the effectiveness of such, has been debated by historians over the past few decades. Many believe that these attempts at surgery were crude and caused more harm than good given the lack of sterilization practices and anesthesia. However, by exploring medical treatises of the time, as well as battlefield accounts, a clearer picture can be found. Archaeological findings were also used to highlight signs of healing found on skeletons from this time period, supporting the idea that surgeries of the time helped soldiers. Some of the medieval practices, such as cauterization and amputation, are still used today with a greater understanding of how these surgeries can be performed successfully. This poster argues that medieval surgical practices helped to preserve the lives of injured soldiers rather than causing greater harm prior to death. This research helps to promote medieval medical practices, including battlefield surgery, as an important stepping-stone in the history and advancement of surgery.

Hanna Torino

History & Philosophy

Mary Queen of Scots; A misunderstood life

Faculty Mentor(s): Erin Stone

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #14

Mary Queen of Scots is a well-known monarch who famously ruled over France and Scotland. Due to a series of unfortunate events, Mary lost her head at the command of her beloved cousin. She was a forward-thinking, powerful woman who was ultimately dealt an unfair set of cards. However, there is rarely a mention of what led to her untimely demise. Her poor counsel, undiagnosed mental illness, and, above all, the malicious men in her life brought her to the chopping block. Mary Queen of Scots was manipulated and taken advantage of by the people who swore to protect and care for her. The audience will see the other side of Mary Stuart's life through this presentation. This accumulation of data is pulled from various historians who specialize in the period or of the Queen of Scots herself. This presentation also utilizes letters from multiple contemporaries at the time.

Caleb Wilder***Holy War and Healing: Effects of the Crusades on European Medicine*****Faculty Mentor(s): Marie Champagne****Lead Author Classification: UWF Graduate Student****Session: Main Poster Session****Session Time: 10:00-11:00; Location: Conf Room AB****Presentation Time: 10:00-11:00; Poster #23**

The Crusades were a series of conflicts that stretched over hundreds of years in the Middle Ages, beginning with the First Crusade in 1095. These wars, religious in nature but also motivated by a variety of political and economic factors, led to a transition in European medicine. While previously there had been some limited interaction between the two regions, these conflicts led to an influx of Arabic texts coming into Europe and being translated into Latin. These included the works of classical Greek and Roman physicians along with medical texts written by Arab scholars. These developments corresponded with the establishment of knightly orders that provided shelter and medical care, such as the Knights Hospitaller. While not leading to as many translations as the Reconquista in Iberia, the crusades for the holy land still demonstrated evolutions in European medicine.



DR. GRIER WILLIAMS SCHOOL OF MUSIC

Ashley Decker***The Advancement of Music Notation Software*****Faculty Mentor(s): Kimiko Lumsden****Lead Author Classification: UWF Undergraduate Student****Session: Virtual Presentation****Location: Gather Town****Poster #7**

The Advancement of Music Notation Software traces the historical evolution of music notation from ancient times to modern digital software, exploring its profound impact on music creation, editing, and dissemination. Beginning with early methods of music transcription on cuneiform tablets, illuminated codices, then to paper, and eventually sophisticated software systems. The paper delves into the pivotal role of computers in music notation, from the inception of programs in the 1950s by the University of Illinois to the groundbreaking integration of MIDI (Musical Instrument Digital Interface) technology in the 1980s, revolutionizing composers' capabilities to hear, refine, and share their compositions. Through an elaborate interview with Dr. Joseph T. Spainola, a distinguished composer and educator renowned for his work with the United States Air Force Academy and a professor at the University of West Florida, the paper provides insights into the nuances of synthesized playback in music notation software. While acknowledging the efficiency and convenience brought about by technology, it emphasizes the paramount importance of preserving artistic authenticity and creativity in music composition. Despite the rapid progress of notation software, the paper underscores the enduring legacy of craftsmanship, dedication, and innovation that have sculpted the musical landscape, highlighting music as a dynamic and timeless art form that transcends technological boundaries.

History & Philosophy**Music**


DEPARTMENT OF THEATRE

Barrett Ho***The Southeastern Theatre Conference (SETC)*****Co-Author(s): Tayla Roberts****Faculty Mentor(s): Glenn Breed****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 1:00-2:00; Location: Conf Room AB****Presentation Time: 1:00-2:00; Poster #28**

Our attendance at the 75th annual Southeastern Theatre Conference (SETC) was an exercise in personal and professional development. Our goal was to further our understanding of the entertainment industry and how we may contribute to it in the future. The uniqueness of theatre, film, opera, and corporate event planning lends itself to an abundance of mystery and insider knowledge. Events such as SETC allow students and rising professionals to better understand the world they will be immersed in and present them with the opportunity to enter it in the way that suits their talents and interests. The various workshops led by industry professionals provided invaluable information about the many facets of theatre and entertainment. The career fair allowed us to further learn about the many opportunities available and what is expected within one's professional portfolio and resume specifically tailored to the entertainment industry.

Theatre**Rajah Pound*****SETC 2024- Rajah Pound*****Faculty Mentor(s): Marci Duncan****Lead Author Classification: UWF Undergraduate Student****Session: Main Oral Presenters****Session Time: 9:15-10:45; Location: Athens (rm 260)****Presentation Time: 10:00AM**

The Southeastern Theatre Conference (SETC) is a conference held in the southeastern region of the United States involving professional auditions, job fairs, design exhibits, workshops, and competitions for all performers and technicians. The location changes every year, with the previous year being Kentucky and this year in Alabama. It allows people all over the southeast or anywhere in the country to connect and network with a common love for theater. I sent a video audition and application back in October for a chance to audition live at the convention. In December, I was notified that I passed through with a score of 48 out of 60. I was fortunate to audition at the Southeastern Theatre Conference and show my skills to professional theater companies around the country, including Missoula Children's Theatre. Through SETC, I have made amazing friendships and connections with people who live as far away as Nevada! It was at this conference that I received my first professional callback. The conference offers performance opportunities for both students who wish to work during the summer and professional or out-of-school actors who wish to work year-round. Undergraduate and graduate school opportunities are also given out during this convention. My dream is to be a successful working performer, and I have the OUR Travel Grant to thank for helping me get closer to

Theatre

this dream. This presentation will highlight my experience and process through SETC 2024.

Kelsey Valente

Theatrical Lighting and Sustainability

Faculty Mentor(s): Connie Smith

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #3

Theatre High-Performance Lamp (HPL) has been used in theatrical light systems for many years. While HPLs have served the theatre industry for many years, there is a growing need to discover other lighting fixtures, mainly focusing on efficient performance. As issues about environmental sustainability and electricity consumption upward push, the theatre industry is faced with transitioning from traditional light technology to greater green alternatives. Light-emitting diode (LED) technology has emerged as an opportunity against standard HPLs. The transition to LED lights aligns with worldwide efforts to lessen electricity intake and might ultimately reduce operational price savings. As theatres try to meet sustainability desires internationally, these venues must assess and enhance their energy consumption patterns. These goals are to delve deeper into the environmental effects of theatrical lighting fixtures at the University of West Florida. This analysis is a foundation for proposing an energy-efficient lighting system that meets the unique needs of UWF's theatres and contributes to the university's broader sustainability objectives. To develop data for this project, an inventory of all HPL lamp-powered theatrical lights within the Mainstage Theatre and the Besser Theatre was created. Within this inventory, the lamps are measured by their efficiency and wattage. Using the recorded information, the Kilowatt-hours (kWh) consumption is compared to data reported by the manufacturer of the LED fixtures. This then calculates the carbon emissions of both fixtures.

Theatre



**DEPARTMENT OF
BUSINESS ADMINISTRATION**



Istiaq Mahmud

Development of Risk Assessment for Mobile Banking

Faculty Mentor(s): Dr. June (Jun) Wei

Lead Author Classification: UWF Graduate Student

Session: Virtual Presentation

Business Administration

Location: Gather Town

Poster #30

The paper aims at developing a risk assessment mechanism for mobile banking. Specifically, first we develop a dynamic information flow model to show information passing among major entities in mobile banking, and a static threat model to show five types of information threats from three major sources. Then, we developed a combined model to show which threat is possibly happening on each of the information flow. Second, we use the weighted analysis method to illustrate the mechanism for assessing risks for mobile banking based on the combined model. The research helps mobile banking developers and decision makers when they develop mobile banking systems.

Gray Marier

Business Administration

Enhancing a Business' Performance: A Strategic Management Approach

Faculty Mentor(s): Shelby Solomon

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #24

This presentation will be a comprehensive analysis of strategies aimed at enhancing the performance of a business by using various strategic management concepts. Acting as a business consultant for a hypothetical situation, the research delves into the intricacies of external and internal analyses to identify key factors influencing the company's performance. The presentation employs a multi-faceted approach, incorporating PESTEL (Political, Economic, Social, Technological, Legal, and Environment) Analysis, Porter's 5 Forces, Group Maps, and various other strategic management tools. By using the aforementioned tools to analyze the data that is found in industry reports, market research, financial statements, and internal assessments, critical insights are formed to help aid in upper management's decision-making. Furthermore, the presentation explores a range of strategic options tailored to address identified challenges and capitalize on opportunities for growth and improvement. Drawing upon established strategic management theories, the research evaluates the feasibility, risks, and potential outcomes associated with each proposed strategy. The culmination of the analysis culminates in the formulation of actionable recommendations aimed at optimizing the company's performance and positioning it for long-term success. These recommendations are presented to upper management, providing valuable insights and guidance for informed decision-making and strategic planning. Overall, this presentation contributes to the body of knowledge in strategic management by offering a practical framework for addressing complex business challenges and driving performance improvement in dynamic and competitive environments.

Emily Miner

Business Administration

Product Development

Faculty Mentor(s): Kimiko Lumsden

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #20

Most people, when shopping, tend to only buy their desired product and use it; they never seem to think about all that goes into a product for it to be available to the public. Hopefully, this paper will inform people about how the process of getting a product onto the sales floor involves numerous steps, multiple responsibilities, and many challenges. This research uses information gathered from an interview, which is the experience of someone who has worked on a product's development. As a result of the interview and further research, readers will learn about some of the steps, roles, and challenges that are part of a product's development. With the help of research conduct and the interview of real-life experience working on a product's development, hopefully it will inform readers' about all the work that goes into a product and result in them appreciating their beloved products more.

Milena Quaresma Franzini

Business Administration

Improving Student-Faculty Virtual Connections Via Emojis in Online Classes

Co-Author(s): Pedro Ganatchian Barros Pilli

Faculty Mentor(s): Helen Soter

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #5

College online classes often lack the interpersonal connections found in traditional classrooms, mainly because of the absence of non-verbal communication cues. This paper explores the potential of emojis to bridge this gap in virtual learning environments. Emojis, graphical representations of emotions, expressions, and gestures, have become part of digital communication, especially among college students. However, their place in academic settings remains a question. This paper addresses the hesitation of both students and faculty to use emojis in educational communication caused by concerns about maintaining professionalism and perceived credibility in an educational relationship with asymmetric power. Research reveals that, despite these reservations, emojis can enhance the emotional quality of messages, clarify intentions, prevent miscommunications, and create a sense of connection in the digital realm. Findings indicate that emojis, when used appropriately, do not undermine the credibility of faculty. Instead, emojis can humanize educators, enhance student engagement, and build a warmer online classroom community. This paper explores the possibility that integrating emojis into online educational communications, with mindful consideration of context and professional boundaries, can be an effective strategy to enrich the virtual learning experience, resulting in more engaged and empathetic student-faculty interactions.

Julie Williams

Business Administration

Integrating Concise Writing Practices into Business Forecasting

Co-Author(s): Ashanae Pinder, Philip Billings

Lead Author Classification: UWF Faculty Member

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #1

To foster a business forecasting experience, students may write about forecasting as they role-play hospital managers forecasting various elements of laboratory

operations. In this active learning exercise for a core quantitative business class in operations management, students practice and briefly write about their forecasting preparation and analysis and later reflect on the insights gained. Student teams composed of three different managers create and share visualizations of fictitious scenario data sets and write their ideas about qualitative and quantitative forecasting factors. Following instructor feedback, students use the scenario data to practice forecasting with three different statistical techniques and calculate the mean absolute percent error for each forecast. Next, students choose their own forecasts for the next period and write a description and justification for the selected method. Finally, students reflect on what and how the exercises help them learn about data visualization and forecasting. In Spring 2024, 97% of 67 participants recommended this active learning exercise that includes roleplaying, data visualization, concise writing, and business forecasting.

DEPARTMENT OF COMMERCE



Commerce

Sydney Alger

The "U Choose Awards": A Measure of Brand Equity as Defined by UWF Students

Co-Author(s): Patrice Egan, Sophia Kraus, Kay Parris, Jasmin Guillen

Faculty Mentor(s): James Mead

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #9

The U Choose Awards is an independent marketing research project conducted by the University of West Florida (UWF) chapter of the American Marketing Association (AMA). The purpose of this study is to measure the brand equity of Pensacola businesses by surveying UWF students. The ultimate goal is to gain a better understanding of how these businesses successfully deliver exceptional value to the UWF student community.

Shoei Arita

Commerce

Impact of Overall Rate on Average Daily Rate in Lodging Industry

Faculty Mentor(s): Xuan Tran

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #9

Although many consumers often decide their stay based on the hotel's rating, little research has discussed the impact of considering overall rate on the average daily rate (ADR), the key indicator in hotel performance metrics. The purpose of this paper sheds light on the gap and reveals the impact of considering the overall rate on the ADR. Theory of attribution is the background literature for this study and structure equation modelling is the approach to measure the causal relationship between overall and ADR. The findings indicate that the impact of overall satisfaction on ADR is significant, and the results contribute to the extension of disposal and situational attributes to revenue and provide the cues to practitioners in revenue management.

Isabella Baggett***Impact of Hotel Cleanliness on Average Daily Rate*****Faculty Mentor(s): Xuan Tran****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 1:00-2:00; Location: Conf Room AB****Presentation Time: 1:00-2:00; Poster #10**

The significant impact of overall hotel and lodging cleanliness has contributed to average daily rate by affecting customer impressions of an establishment. Previous research has primarily focused on how recessions and economic booms impact a hotel's revenue. While this is true, we examine the different aspects that influence average daily rate for hotels. We use data from TripAdvisor reviews and structure equation modeling to dissect customer opinions and expectations on hotel and lodging cleanliness standards. Based on the data collected from our research, guests look for clean, minimalist furnishings and room design. Furthermore, proper training can help teach housekeeping staff about a lodging company's goals based on its mission. Our findings indicate that a proper cleanliness program can increase the likelihood of satisfied customers and influence repeat bookings. These ramifications, or side effects, cause an increase in average daily rate in the lodging industry.

Declan Carr***Game Theory and Hotel Pricing Strategy Concerning Perceived Value*****Faculty Mentor(s): Xuan Tran****Lead Author Classification: UWF Undergraduate Student****Session: Main Oral Presenters****Session Time: 2:00-3:00; Location: Auditorium****Presentation Time: 2:30PM**

Game theory displays a situation where one player's strategy depends on another's actions, and the payoffs hinge on the strategies employed. Hotel managers can implement their KPIs to compare against reports from other businesses. The core of this research revolves around the transposition of KPI values set into matrices. Game theory matrices show that acquiring the best room standard among resort and suburban hotels is pivotal in ADR analysis. Research combining ADR data and TripAdvisor reviews shows that guests are willing to pay higher prices when expecting higher room standards. Hotel criteria that establish the guest's evaluation of a hotel's standard include cleanliness, location, room quality, sleep quality, service, and value. Linked with the associated qualities, mathematical models can determine how guests perceive the standard and their willingness to pay the current price (ADR) given the previous criteria. Since hotels increasingly serve as both workplaces and family connections, travelers are spending more time inside the rooms, thus becoming more subject to evaluation. Regarding operations, managers can utilize these values to form their strategy for maximizing the guest's perception of benefiting from a higher standard, resulting in appropriate pricing for the rooms. Although the major hotel properties of Pensacola are critical in understanding revenue performance, they have not yet been combined with Game theory practices. This method has provided powerful insight into operational changes that can lead to more satisfied guests. We suggest that the resort hotels (Hilton, Hampton Inn, Holiday Inn Resort, and the Surf and Sand) need to increase the price during the peak season, while Hyatt

Commerce

- Place (suburban hotel) needs to decrease the price during the peak season so that both areas can increase room standards and guest satisfaction.

Sophia Cohen**Commerce*****Influence of Innovators on Tourism after COVID-19*****Faculty Mentor(s): Xuan Tran****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 1:00-2:00; Location: Conf Room AB****Presentation Time: 1:00-2:00; Poster #11**

- The purpose of this study is to examine the price elasticity of demand of new tourists after COVID-19 who travel to Pensacola, a white beach sand in Florida. The study has used average daily rate, guests' income, and demand to conduct an error correction model for the 103 properties with 9163 rooms in Pensacola from January 2018 to Dec 2023. Error correction modeling was conducted to find a long-term cointegration that is characterized by the property of three variables average daily rate, demand, and income moving together through time in a long-run equilibrium. Other popular tourist destinations across the country, such as San Francisco, New York City, and Las Vegas continue to attract high volumes of tourists across all seasons. If hotels on Pensacola Beach can replicate this model, they can become a prominent leader in the country for hospitality. This change would also allow for an increase in job opportunities for the area, wealth, and financial stability.

Sophia Cohen**Commerce*****Influence of Protestant Christianity on the Concept of Southern Hospitality*****Faculty Mentor(s): Jill Plumer****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 12:00-1:00; Location: Conf Room AB****Presentation Time: 12:00-1:00; Poster #10**

- Southern hospitality is a concept embedded into the culture of the American South, but the term itself is very broad and vague in definition. The origins of Southern hospitality can be deeply tied to the prominence of Protestant denominations within the area. This paper seeks to examine the relationship between Protestant Christianity and the concept of what is perceived to be Southern hospitality using identity theory. The implications of this research can be applied to businesses within the Northwest Florida region to help better meet the desires of consumers.

Patrice Egan**Commerce*****Impact of Motives in Comments on Hotel Average Daily Rate*****Faculty Mentor(s): Xuan Tran****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 10:00-11:00; Location: Conf Room AB****Presentation Time: 10:00-11:00; Poster #16**

- While hotel ratings commonly shape consumer decisions regarding lodging, there has been limited exploration into how various factors, such as motives, influence the Average Daily Rate (ADR), a crucial metric in evaluating hotel

performance. This paper aims to address this gap by investigating the influence of honesty, emotion control, extraversion, agreeableness, conscientiousness, and openness (HEXACO) from guest prearrival to departure on hotel ADR. Drawing on the Theories of Motivation and Attribution as its theoretical foundation and utilizing Structural Equation Modelling (SEM), the study examines the causal relationship between guests' motives and ADR. The findings highlight the significant impact of agreeableness and conscientiousness during guest prearrival and occupancy, respectively. Furthermore, considering the price elasticity of demand of hotel guests also affecting ADR, this research contributes to expanding the understanding of dispositional and situational attributes in revenue management, providing valuable insights for revenue optimization strategies among practitioners.

Arimsay Huertas Rodriguez

Commerce

Average Daily Rate, Revenue Per Available Room, and Hotel Breakeven

Occupancy in Illustrated

Faculty Mentor(s): Xuan Tran

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #8

Anatolia: An International Journal of Tourism and Hospitality Research
Introduction The purpose of this research note is to illustrate the three key performance indices and develop their relationships, which can be taken up by future researchers in hotel revenue management. Using the graph report on preliminary findings, the study develops a new approach to measuring hotel breakeven occupancy using the average daily rate and revenue per available room. Literature Contemporary research in hospitality and tourism has used hotel income statements to find fixed and variable costs for finding hotel breakeven points. It takes time for hoteliers to find breakeven occupancy, so the application for this approach is limited to comparing breakeven rates among hotel classes and segments. The new approach has used a linear system with x and y axes for room revenue and number of rooms, respectively. In terms of hotel revenue with profit, ADR has been used. ADR is the Average Daily Rate, which is the revenue per day per occupied room. In terms of hotel revenue with zero profit, the term RevPAR has been used. RevPAR is the Revenue per available room. That is the revenue for rooms that have not been sold or rooms with zero profit. To consider the profit of hotel revenue, hotel managers aim only maximize revenue per available room (RevPAR) (Chatopadhyay & Mitra, 2018). In terms of hotel breakeven point, the term breakeven occupancy (BE_{Occ}) indicates the ratio between rooms sold with zero profit. Methodology Using the calculus in the linear system, the study has proved there is an equal relationship between the ratio of ADR and RevPAR with the RevPAR and the Breakeven occupancy as follows. $ADR = OA$ (sales for every room with profit) $RevPAR = OB$ (sales for every room with zero profit (for every room available without sales) Breakeven occupancy = Rooms sold with profit / rooms sold with zero profit = $B'A' / OB'$ We have $(ADR \text{ \– } RevPAR) / RevPAR = (OA \text{ \– } OB) / OB = BA / OB$ But: $B'A' / OB' = BA / OB$ Therefore, Breakeven occupancy = $(ADR \text{ \– } RevPAR) / RevPAR$

Andrea Macareno Lopez

Commerce

Using Slutsky equation to break down ADR, OCC, and RevPAR

Faculty Mentor(s): Xuan Tran

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #17

The purpose of this study is to examine the impact of hotel room rate on occupancy and hotel profit. Using the sample of 65,566 properties with 5,588,295 rooms in the US from January 1990 to December 2023, the study conducts structure equation modelling to find a fit model that contributes to academia and practice. In academia, the Slutsky equation has been extended to average daily rate (ADR), occupancy (OCC), and revenue per available room (RevPAR) in hospitality literature. In practice, the hoteliers can use the study findings to change room rate to optimize hotel revenue.

Kaleigh McCullough

Commerce

Impact of Value and Room on Hotel Average Daily Rate

Faculty Mentor(s): Xuan Tran

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #20

While many consumers commonly base their lodging choices on hotel ratings, limited research has examined how value and room quality affect the Average Daily Rate (ADR), a critical metric in assessing hotel performance. This paper aims to address this research gap by elucidating the influence of value and room quality on ADR. The study draws upon the Theory of Attribution as its theoretical framework and employs Structural Equation Modeling (SEM) to analyze the causal relationship between value, room quality, and ADR. The findings underscore the significant impact of room quality and value satisfaction on ADR. Furthermore, this research extends the understanding of dispositional and situational attributes to revenue management, offering valuable insights for practitioners in revenue optimization strategies.

Rowan Rayon

Commerce

Is Cosplay a Labor of Love or Dollars? Part 1: Love is Winning

Faculty Mentor(s): Richard Hawkins

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #8

This research is about cosplay, a process of bringing a fictional character to life via costuming and acting. More specifically, cosplay has been described as an act of transformation and self-expression in the production of a chosen identity through performances within a certain time and space. In cosplay, a chosen identity may fluctuate as the participant moves from one temporary identity to another based on their changing interests and passions. Prior research has found that cosplay participants often form groups with others from the same fandom. As individual cosplayers move fluidly between characters, they also move between groups in a more ephemeral form of communal organization

recognized as “neo-tribalism.” Neo-tribes are based on shared experiences and shifting cultural patterns rather than traditional demographics. Because much cosplay is enacted during pop-culture fan conventions (e.g., San Diego Comic-Con), it has personal, communal, and commercial relevance. Thus, we are interested in exploring the meaning of cosplay from the perspectives of various stakeholders. The study presented here is the first part of a planned three-part research project to examine the meanings of cosplay from the perspectives of participants, fan convention organizers, and convention venue management. During our interviews with avid cosplayers, key questions included, “What is your motivation for cosplay?” and “What makes cosplay authentic for you?” Early findings reveal the importance of personal values, “resonating with the character you portray,” and the joy of tribal communion for both motivation and authenticity. A related theme that emerged was freedom of expression, i.e., “exercising choice in what is revealed versus what is reserved.” Finally, as one participant succinctly stated, “Cosplay is the highest form of fandom.” This research will continue with quantitative surveys of participants and interviews with fan convention organizers.

Summer Simone

Impact of Service, Agreeableness, Conscientiousness, and Neuroticism on

Average Daily Rate

Co-Author(s): Kendall Morman

Faculty Mentor(s): Xuan Tran

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 1:00–2:00; Location: Conf Room AB

Presentation Time: 1:00–2:00; Poster #18

Tripadvisor is an online travel website that has current information such as reviews and photographs, which helps millions of travelers each month. The importance of Service, Agreeableness, Conscientiousness, and Neuroticism affect the average daily rate (ADR) of a hotel. The average daily rate of a hotel is calculated by taking the average revenue earned from rooms and dividing it by the number of rooms sold. This study analyzed 100 Tripadvisor reviews and findings indicated a significant relationship was observed between service, agreeableness, in the prearrival stage of the guest cycle and ADR. This study concluded that managers can use HEXACO personality tests to provide valuable insights into traits associated with effective leadership. Each letter in the HEXACO personality traits stands for a valuable trait employers look for in a great leader, H: honesty, E: emotion control, A: agreeableness, C: conscientiousness, O: openness. Providing excellent service by hiring agreeableness front desk clerks or conscientiousness housekeepers is the key to increasing the average daily rate of a hotel. However, if the hotel maintenance is always in trouble by neuroticism technician, the ADR will decrease. Introduction While hotel ratings often influence consumers’ decisions about lodging, there has been limited research into how service and agreeableness affect the Average Daily Rate (ADR), a crucial metric for evaluating hotel performance. This paper aims to fill this research gap by examining the influence of dispositional and situational attributes on ADR. Drawing on the Theory of Attribution as its theoretical framework and utilizing Structural Equation Modeling (SEM), the study found the significant impact of service, agreeableness, conscientiousness, and neuroticism on ADR.

Commerce



Hal Marcus
College of Science
and Engineering

DEPARTMENT OF BIOLOGY



Biology

Julia Allgeyer

A Look Inside the Jelly: a microplastics quantification study on gelatinous zooplankton in the northern Gulf of Mexico

Faculty Mentor(s): Alexis Janosik

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 2:00–3:00; Location: Conf Room AB

Presentation Time: 2:00–3:00; Poster #1

In the past few decades, the presence of microplastics in the world’s oceans has become an increasingly concerning issue. Microplastics are defined as plastics less than five millimeters in diameter. Increased microplastics concentration in the oceans has caused increased contamination of microplastics by various organisms. In particular, gelatinous zooplankton have little selectivity in their diet due to filter feeding methods of predation; consequently, contamination from suspended microplastics has become an increased occurrence. By acting as prey for many species and filtering substantial quantities of water, gelatinous zooplankton play a vital role in marine ecosystems. Gelatinous zooplankton act as indicator species for ecosystem health by mirroring environmental aspects which are difficult to directly measure. The goal of this project is to quantify microplastics concentrations in gelatinous zooplankton in the northern Gulf of Mexico based on protocols for digestion of organic samples with respect to microplastic quantification. Microplastic concentrations in gelatinous zooplankton will also be compared to concentrations in water samples. The results of this study will expand the current database of microplastics concentrations in gelatinous zooplankton in the northern Gulf of Mexico. These data are vital to the understanding of gelatinous zooplankton’s role as bioindicators as well as the continued monitoring of marine ecosystem health in the northern Gulf of Mexico.

Hope Barrett

Protecting the Locals: Expanding Knowledge of Non-indigenous Species in the Florida Panhandle

Faculty Mentor(s): Dr. Viktoria Bogantes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00–10:00; Location: Conf Room AB

Biology

Presentation Time: 9:00-10:00; Poster #1

Non-native species often play a part in the loss of native ecology in ecosystems, and they are one of the biggest causes of biological homogenization. When a non-native species is introduced to an environment, they face no natural predators and can usually out-compete native species. The takeover of one species can result in a loss of native organisms, and overall decrease the natural biodiversity of the area. The goal of this study is to survey marinas and ports in the Pensacola area to create an inventory of marine invertebrates and identify non-native species if present. Previous studies have accomplished similar goals in different bodies of water, so this protocol aims to use those methods and acquire data for the Pensacola area. Sediment samples and sessile marine invertebrates associated with pylons will be collected and preserved so that the collected specimens can be used for morphological and molecular studies. Specimens will be separated based on morphospecies (i.e. morphologically similar organisms), and DNA sequence data. This information will provide a gauge for the size of the issue of non-native species invasion in the Gulf of Mexico area.

Baye Bowman**Biology*****Assessment of Microplastics in the Gut Contents of Vermilion Snappers (*Rhomboplites aurorubens*) in the Gulf of Mexico*****Faculty Mentor(s): Alexis Janosik****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 11:00-12:00; Location: Conf Room AB****Presentation Time: 11:00-12:00; Poster #6**

When plastics enter the ocean it is broken down by sunlight and physical processes that make the plastics smaller and smaller until they range from 1 um to 5 mm and this size range classifies the plastics as microplastics. Microplastics are becoming more widespread due to the amount of plastic that enters the ocean. The ocean serves as a major food source and as such, human microplastic consumption from seafood is rising in concern. Fishes are a primary food source next to crustaceans and mollusks but with bioaccumulation, fishes can have a higher concentration of microplastics than other marine species lower on the trophic scale. Unfortunately, microplastic research on specific fish species is limited or overshadowed by popular sports fish such as tunas and swordfish. Microplastic studies have been conducted throughout the world, but in the Gulf of Mexico research is also lacking. The objective of this study was to quantify the amount of microplastics found in the digestive system of a popular commercial fish, Vermillion snapper or *Rhomboplites aurorubens*. The digestive system from the anus to the esophagus of the fish was extracted then digested with 10% Potassium Hydroxide, which was then filtered and observed under a microscope. Microplastics were counted and characterized. This study adds critical data in understanding microplastic quantities in fishes of a lower trophic scale which will aid a better understanding of microplastics in the Gulf of Mexico.

Heaven Brandt**Biology*****Characterizing the effect of dopamine-1 like receptor agonists on neutrophil adhesion*****Faculty Mentor(s): Peter Cavnar****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 10:00-11:00; Location: Conf Room AB****Presentation Time: 10:00-11:00; Poster #1**

Neutrophils, constituting 70% of leukocytes, play a pivotal role in combating infections by exiting the bloodstream and employing various mechanisms to eliminate pathogens. However, low neutrophil counts, known as neutropenias, significantly increase the risk of severe infections. Dopamine signaling has emerged as a possible factor influencing many neutrophil functions, including their ability to adhere to surfaces. This study explored the impact of dopamine on neutrophil adhesion and infection response, utilizing the HL-60 cell line as a model. Methodology involves differentiating HL-60 cells into neutrophils through treatment with DMSO. Fibrinogen-coated plates were utilized to mimic tissue surfaces. Following staining with Calcein-AM, cells are exposed to D1-like receptor agonists, both in the presence and absence of bacterial peptide stimulation. Adhesion is quantified by measuring fluorescence intensity before and after a series of washing steps. This investigation promises insights into the interplay between dopamine signaling and neutrophil adhesion, shedding light on potential therapeutic avenues for immune-related disorders.

Bonnie Bruner**Biology*****Isolating Transfected Epidermal Growth Factor Receptor HEK293 cells via Antibiotic Resistance*****Faculty Mentor(s): Rodney Guttmann****Lead Author Classification: UWF Undergraduate Student****Session: Main Oral Presenters****Session Time: 12:30-1:45; Location: Auditorium****Presentation Time: 1:30PM**

Receptor Tyrosine Kinases (RTKs) serve as critical transmembrane proteins, orchestrating essential cellular functions by transmitting extracellular signals into the cell. Among these, Epidermal Growth Factor Receptors (EGFR) stand out as a pivotal subgroup, particularly implicated in various cancers. This study focuses on EGFR due to its profound involvement in physiological processes and its significant role in cancers such as lung, colorectal, and glioblastoma. The multifaceted objective of this research involves optimizing transfection techniques using antibiotics (G418) to isolate and monitor the effects of EGFR expression in HEK293 cells. Successful isolation of transfected cells is on the precipice of being achieved, paving the way for the next phase of the project, which focuses on identifying phage binding partners for EGFR RTK. This crucial step aims to leverage the specificity of bacteriophages for bacterial receptors to selectively target EGFR RTKs in mammalian cells. While the initial phase has yielded positive results in isolating transfected cells, the subsequent stages of panning and identifying phage binding partners remain unexplored due to time constraints. This continuation of the project will delve into these aspects, contributing valuable insights towards the development of novel therapeutic strategies targeting EGFR RTKs. The study's comprehensive approach promises to enhance our understanding of phage-based inhibition of EGFR and may open new avenues for cancer treatment; specifically additional immunotherapies that may work in tandem with traditional treatments.

Denise Carrillo***Exploring the Neuroprotective Benefits of Exercise in the Context of Binge Alcohol-Induced Neuronal Damage*****Co-Author(s): Simon Talcott****Faculty Mentor(s): Youngil Lee****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 10:00-11:00; Location: Conf Room AB****Presentation Time: 10:00-11:00; Poster #3**

Alcohol use disorder (AUD) is a very prevalent issue in today's society.

Consistent binge drinking has been shown to decrease brain matter within the hippocampus and piriform complex, which regulate learning, memory, and olfactory processes. Moderate alcohol use and exercise stimulate similar areas of the brain, specifically the mesocorticolimbic pathway, which is involved in our body's natural reward system. Because exercise has been shown to have protective effects on the body, it was hypothesized that exercise might help protect brain cells against the effects of binge drinking. Human brain cells were cultured, subjected to excessive ethanol consumption, and then exposed to either 5mM or 10mM lactate, a product of exercise. Cell death was observed via fluorescent markers and compared among the groups. Western blots were then completed to analyze and compare concentrations of specific cellular proteins. It was found that the samples containing 5 mM and 10 mM lactate attenuated cellular death, compared to their ethanol-only counterparts. To investigate the potential protective mechanisms of lactate against ethanol-induced cellular injuries, future research will be completed through an analysis of antioxidant proteins and autophagy by western blots as well as mitochondrial biogenesis. This project was supported by the UWF Office of Undergraduate Research and the UWF MARC scholars.

Anessa Carter***Proficiency in molecular laboratory techniques through the OUR Works Program*****Faculty Mentor(s): Alexis Janosik****Lead Author Classification: UWF Undergraduate Student****Session: Virtual Presentation****Location: Gather Town****Poster #10**

Gaining research experience as an undergraduate student is essential for a career in marine biology. The biggest accomplishment to date for this program has been the achievement of a higher level of understanding of the inner workings of molecular research. The laboratory's projects offered a variety of opportunities to gain experience including DNA purifications and sequencing of the CO1 gene in Queen Snapper samples. Training was also provided in general laboratory duties such as refilling pipette tips, cleaning and sterilizing supplies, and making TAE buffers for PCR gels. The current project involving the processing of environmental DNA from water samples has sparked an interest and resulted in an individual project involving environmental DNA being designed. To be able to confidently and accurately assist in the extraction, purification, amplification, and polymerase chain reaction of samples obtained will be applied in future research. The projected outcome of this experience is to become knowledgeable and familiar with molecular techniques and procedures to assist in career

Biology

development. Priceless laboratory experience, exposure to accomplished researchers in action, and learning about research were the objectives of participating in this program. The amount of experience that has been attained through my time in Dr. Janosik's lab has established the foundation of a laboratory-specific skillset, which is crucial for a career in my chosen field. The ultimate goal consists of conducting individual molecular research which this program has been influential in attaining.

Beloved Choi***Synthesis of Halogen Disubstituted Benzo[b]thiophene Derivatives*****Faculty Mentor(s): Prerna Masih****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 11:00-12:00; Location: Conf Room AB****Presentation Time: 11:00-12:00; Poster #7**

Previous studies have highlighted the significant antimicrobial, anti-cancer, anti-inflammatory, anti-oxidant, anti-tubercular, anti-diabetic, and anticonvulsant properties of benzo[b]thiophenes. Particularly, recent research has found that 3-halobenzo[b]thiophene derivatives have antibacterial qualities. A practical three-step synthesis method of benzo[b]thiophenes involves the formation of a terminal alkyne from an aldehyde through a Grignard reaction. Sonagashira Coupling reactions, utilizing a palladium catalyst and copper co-catalyst to facilitate bond formation between the precursor terminal alkynes and aryl or vinyl halides can then be used to form a precursor for the final cyclization step. Subsequent electrophilic cyclization employs an environmentally friendly reaction utilizing NaCl and CuSO₄ in ethanol solvent forming the benzo[b]thiophene product. Prior studies have focused on substitutions at the 3-position. This research aims to expand the synthesis of benzo[b]thiophene derivatives by synthesizing novel halobenzo[b]thiophenes with di-halogen substitution at the 3,4, and 5 positions. The synthesized compounds underwent confirmation through spectral analysis, including HNMR, CNMR, GCMS, and HPLC.

Biology**Josh Cook*****Informed Consent in the Age of Artificial Intelligence: A Leap Forward for Clinical Research*****Co-Author(s): Kristina Robison****Faculty Mentor(s): Rodney Guttmann****Lead Author Classification: UWF Graduate Student****Session: Main Oral Presenters****Session Time: 12:00-1:00; Location: Lounge****Presentation Time: 12:00PM**

Revolutionizing the ethical backbone of clinical research, this project pioneers an artificial intelligence (AI)-infused approach to informed consent, enhancing comprehension and engagement. Where traditional consent is mired in paperwork and complexity, our method harnesses AI's prowess – specifically OpenAI's API for natural language processing (NLP) – to tailor questionnaires from dense consent forms, distilling them into essential questions that measure participant understanding. This innovation in consent paves the way for more accessible, personalized engagement. Not only does it distill complex information into digestible insights, but it also tailors interactions to the unique aspects of

Biology

each study, bolstering patient autonomy with a participatory experience. This is especially pivotal in studies where cognitive function is at stake, like those concerning Alzheimer's Disease. Here, our standardized questionnaire doubles as a cognitive screen, ensuring that consent is both informed and cognitively sound, thereby elevating both data integrity and patient welfare. Embodying a significant advance, the fusion of AI with informed consent processes holds promise for enhancing ethical rigor, sharpening the fidelity of participant comprehension, and streamlining trial operations. In a healthcare domain where evolution is constant, adopting such AI-driven methodologies is not just innovative – it's imperative. These tools are instrumental in nurturing a patient-centered research ethos, vital for fostering informed, engaged participation in the transformative field of biomedical research.

Tori Costilow

Biology

Three-step Synthesis and Antifungal Analysis of Novel dihalo Benzo[b] thiophene ring structure derivatives

Co-Author(s): Sharmin Afroz, Maria Jose Pena Bu

Faculty Mentor(s): Prerna Masih

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #4

Antimicrobial infections have become a growing threat in medical facilities worldwide. Presently, there are over 1.5 million fatalities annually attributed to invasive fungal infections alone. Unfortunately, there are a minimal amount of safe and effective treatments for these infections, and microbial infections. For researchers, two of the most hindering problems in solving this issue are antimicrobial resistance and toxicity. Benzo(b)thiophene is a core structure that has shown promising biological activity in previous studies and is already a core structure in FDA approved medications like sertaconazole and raloxifene. Past research by Masih et al has shown favorable MIC results for a novel benzo[b] thiophene derivative as an antimicrobial agent. The aim for this project includes continuing the research performed by Dr. Masih et al involving the synthesis of benzo[b]thiophene derivatives and monitoring the structure activity relationships (SAR) through targeted halogen diversification, then analyzing the antimicrobial effects of the compounds. The addition of halogens to the molecules changes their biological, pharmacokinetics and dynamic properties. In this project, a difluoro derivative benzo[b]thiophene was synthesized. Three-step organic synthesis methods were used that involved a Grignard reaction under inert anhydrous conditions, a Sonogashira coupling reaction, and electrophilic cyclization. Thin Layer Chromatography is performed to monitor the reactions throughout, rotary evaporation is utilized to dry the samples, and flash chromatography is used for column chromatography to separate the molecules. The final compounds are analyzed by proton and carbon nuclear magnetic resonance (¹H-NMR and ¹³C-NMR), and gas chromatography mass spectroscopy, while purity is confirmed through high-performance liquid chromatography (HPLC). Finally, the biological activities are tested by microdilution susceptibility assays. In previous experiments, results showed that functional group type as well as placement had a significant effect on the antimicrobial activity of the product. It is hypothesized that the addition of difluoro in benzo[b]thiophene

structure will lead to successful microbial inhibition. In conclusion, this project intends to assist in the search for potent antifungal compounds with extensive effectiveness against diverse fungi species.

Brenna Cunningham

Biology

Morphological and Molecular Catalog of Echinoderms in the Gulf of Mexico along the Florida Panhandle

Faculty Mentor(s): Viktoria Bogantes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #2

DNA-based databases for biodiversity research are important when it comes to studying the taxonomy of a group of organisms because the identification of species can be conducted even with a lack of taxonomic expertise. Thus, a common approach for species identification is DNA barcoding, which is a tool that facilitates the identification of organisms by using a short region of DNA from a specific gene. In many animal groups, a region of the Cytochrome Oxidase I (COI) gene is commonly used as a marker for species identification. Publicly available databases such as GenBank and Barcode of Life (BOLD) contain COI barcodes that can be used as a reference for quick identification of newly generated sequences that are compared against the reference database. The practicality of these databases is limited because of the reduced representation of barcodes for many invertebrate groups. Most invertebrate species have barcodes available for less than 25% of the species known. Marine invertebrates with reduced representations of DNA barcodes are echinoderms. This group includes Crinoidea (sea lilies), Asteroidea (starfish), Ophiuroidea (brittle stars), Echinoidea (sea urchins and sand dollars), and Holothuroidea (sea cucumbers). This project aims to increase the representation of molecular barcodes for the COI region for Echinoderm species in the GoM along the Florida Panhandle. This study will facilitate the identification of cryptic and invasive species of echinoderms in the GoM. Given the lack of molecular data for echinoderms in the GoM, the results of this research will help to create a basis and genetic record for various echinoderms.

Allie Dalton

Biology

Investigating the Effects of Dopamine 2 Like Receptors on Neutrophil Cell Adhesion

Faculty Mentor(s): Peter Cavnar

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #2

Neutrophils are vital components of the innate immune system that play a pivotal role as first responders to infections. Chemotaxis guides them to sites of inflammation, where they interact with endothelial cells and respond to inflammatory cues through various activation processes. Deficiencies in neutrophil levels or functionality can lead to severe infections and immune related disorders like neutropenias and leukocyte adhesion deficiency. Recent studies suggest a potential link between dopamine signaling and neutrophil function. Dopamine, known for its role in neuronal regulation, may influence

neutrophil activity through specific dopamine receptors. Previous research indicated that dopamine and its receptors modulate neutrophil activity, affecting processes such as phagocytosis and oxidative stress. The proposed methodology involves differentiating HL-60 cells and treating them with D2-like receptor agonists. Neutrophils will be fluorescently stained and assessed for adhesion to fibrinogen-coated plates in the presence and absence of the bacterial peptide fMLF. Fluorescence reading will be compared to quantify adhesion differences. This study aims to elucidate the role of dopamine signaling, particularly through D2-like receptors, in regulating neutrophil adhesion, providing insights into potential therapeutic targets for immune-related disorders and infectious diseases.

Cristina Gonzalez

Environmental Enrichment Scoring Tool for Optimized Neuroplasticity

Co-Author(s): Josh Cook

Faculty Mentor(s): Rodney Guttmann

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #3

The project we have been working on takes a closer look at the elements of environmental enrichment and how they increase neuroplasticity. Neuroplasticity is a measurable phenomenon that modifies synaptic connectivity, neurogenesis, cortical thickness, dendritic branching, and synaptic density. The brain's inherent ability to reorganize and adapt to environmental stimuli offers an opportunity for improving cognitive functions such as learning, memory, and maintaining mental agility, especially among elderly adults. Yet environmental enrichment, a factor that has proven to influence neuroplasticity heavily, is difficult to standardize and define. However, some standards have been found that effective environmental enrichment engages motor and sensory function, requires active recall and task sequencing, and encourages building significant personal relationships and communication. This project aims to develop a scaling tool that activity coordinators and caretakers can use to determine whether activities at an ALF are conducive to encouraging neuroplasticity by exposing the patient to a maximally enriched/ stimulated environment. We want to help activity coordinators and caretakers maximize every patient's experience while living at an AFL, improving their overall quality of life. The broader scope of this project aims to empower caregivers, patients, and individuals concerned about cognitive decline with a comprehensive understanding of the steps they can take to enrich their environment effectively, thereby facilitating neuroplasticity and mitigating the risk of cognitive decline. Ultimately, developing an environmental enrichment scoring tool will bridge the gap between scientific knowledge and the practical application of creating enriched environments that promote neuroplasticity and a higher quality of life.

Chandler Grammer

The Effect of Cost and Education on a Patient's Willingness to Vaccinate

Co-Author(s): Mike Johnston, Paul McLeod

Faculty Mentor(s): Katie Riesenber

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Biology

Jacob Hardin

Biotic Drivers of Microheterogeneity of Soil Fertility in a Slash Pine Ecosystem: Effects of a Carnivorous Plant

Co-Author(s): Lindsey Crawford, Alexis Bjornstad

Faculty Mentor(s): Frank Gilliam

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #4

The purpose of this research was to determine how carnivorous plants, specifically pitcher plants (*Sarracenia* spp.) found in acidic soils within NW Florida, impact the nutrient fertility of the soil they inhabit. To test this, soil was collected from Tarkiln Bayou Preserve State Park from underneath pitcher plant colonies, and also soil within 2-3 meters away from where the plant was located (Used *Sarracenia leucophylla* and *Sarracenia rosea*). After sample collection, soil was dried and sieved at UWF to remove any large organic material. The prepared samples were sent to the University of Maine Analytical Laboratory for nutrient composition analysis. The analyses were then run through statistical analysis to determine significant values for each nutrient. The results indicated that although some nutrients were significant in a few comparisons, overall there was no pattern to indicate that the presence of *Sarracenia* species within the ecosystem studied had any clear impact on soil fertility. There was a clear connection between organic matter within the soil on major macronutrients required for plant growth, which is independent from effects of pitcher plants. This study highlights the variability of microheterogeneity of macronutrients in acidic, sandy soils, and suggests that smaller plants such as pitcher plants do not play a major role in affecting soil fertility in these ecosystems.

Biology

Briley Krouse***Analysis of the Ctenophore, Mnemiopsis leidyi, Feeding Rates Under Differing Conditions*****Faculty Mentor(s): Christopher Pomory****Lead Author Classification: UWF Undergraduate Student****Session: Main Oral Presenters****Session Time: 12:30-1:45; Location: Auditorium****Presentation Time: 1:15PM**

The ctenophore *Mnemiopsis leidyi* A. Agassiz (1865), is able to thrive in a wide range of conditions, including salinity levels from 6 ppt to 35 ppt, which allows them to survive in both bays and estuaries, as well as in the ocean. The effects of salinity on *M. leidyi* diet and feeding rates have largely been studied in the Baltic Sea, where *M. leidyi* has become an invasive species in recent decades. Studies have shown that salinity has no effect on feeding rates of *M. leidyi* in the Baltic Sea, but little research has been done on the Gulf of Mexico population. Some studies suggest that the species may make vertical diel migrations, but there is little information on how their diet may change with the migration. This study aimed to examine the effects of both salinity and diurnal cycles on *M. leidyi* feeding rates in the Gulf of Mexico. Two salinity levels were tested, a low value of 20 ppt and a high value of 35 ppt, along with two light levels, 12 P.M. for light and 9 P.M. for dark. There was no difference in number of plankton consumed based on differences in light level or salinity level. The interaction term was small, suggesting there was no relative differences in feeding rates under the different salinities and light levels. It is likely that salinity levels and diurnal cycles do not affect the feeding rates of *Mnemiopsis leidyi* from the Gulf of Mexico.

Allie Linkous***Bacteriophage's Impact on EGFR-Mediated Cancer Pathways*****Co-Author(s): Bonnie Bruner****Faculty Mentor(s): Rodney Guttmann****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 9:00-10:00; Location: Conf Room AB****Presentation Time: 9:00-10:00; Poster #3**

Cancer is the second leading cause of death worldwide according to the World Health Organization. Despite the plethora of medical advances in the field of cancer biology, continued research is key to bridging current gaps in our understanding. Bacteriophage offer a unique opportunity for further research related to cancer biology. The focus of this study is to explore bacteriophage's potential effect on epidermal growth factor receptor (EGFR). EGFR mutations have been identified in a range of cancer types. With our current understanding, we propose that bacteriophage can specifically target EGFR and offer therapeutic benefit. Outside of therapeutic uses, we recognize the potential to utilize bacteriophage as a diagnostic tool. To test our hypotheses, we have transfected human embryonic kidney (HEK) cells to express EGFR. At this current stage we are developing conditions necessary to ensure most effective transfection methods. Furthered research will involve panning using a 7-mer library. This stage will collect bacteriophages with the ability to uniquely bind to EGFR. Once collected we will use fluorescence resonance energy transfer (FRET) to monitor the protein interactions occurring. With this information we can test whether

Biology

or not bacteriophage have the ability to modulate EGFR activity in reference to cancer cell pathways.

Martha Londoni**Biology*****Evaluating the anti-biofilm activity of novel benzo[b]thiophene derivatives with potential antibacterial activity*****Faculty Mentor(s): Prerna Masih****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 10:00-11:00; Location: Conf Room AB****Presentation Time: 10:00-11:00; Poster #5**

The need for new antibiotic classes is increasing as antibiotic resistance becomes a bigger threat to patient care. One of the major reasons for this bacterial resistance is the increasing prominence of biofilm-related infections. A biofilm is a complex community of microorganisms such as bacteria and fungi that are found within a self-produced matrix of extracellular polymeric substances (EPS) such as polysaccharides and nucleic acids. Biofilms can grow on living tissue, medical devices, and industrial equipment. The EPS can hinder the diffusion of antibiotics to eradicate the microorganisms within the biofilm. This weak penetration makes it challenging for antibiotics to eradicate biofilm-related infections. While planktonic infections often have severe symptoms, biofilm-related infections are chronic and have generally mild symptoms, yet can be debilitating, particularly for those with suppressed or weakened immune systems. To test the efficacy of antibacterial compounds, MBIC (minimum biofilm inhibitory concentration) and MBEC (minimum biofilm eradication concentration) will be determined. The Minimum Biofilm Inhibitory Concentration (MBIC) is the lowest concentration of an antimicrobial that halts the initial formation of biofilm, while the Minimum Biofilm Eradication Concentration (MBEC) is the minimum concentration required to eliminate pre-existing biofilm. Generally, the MBEC is higher than the MBIC for antimicrobials due to the higher concentration of antimicrobials needed to penetrate the already-formed biofilm compared to inhibiting its growth. Consequently, assessing compounds against biofilm aids in gauging their antimicrobial efficacy. This project investigates the effectiveness of antimicrobial agents in both preventing biofilm formation and eradicating established biofilms through comprehensive biofilm assays and subsequent evaluation.

Sarafina Mowe**Biology*****Temporal Variation of Microplastics Accumulated in Marine Demosponges in Pensacola Sound*****Faculty Mentor(s): Alexis Janosik****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 9:00-10:00; Location: Conf Room AB****Presentation Time: 9:00-10:00; Poster #28**

Microplastics are ubiquitous within marine ecosystems. Their diverse composition, size, and shape have made categorization very difficult in understanding the natural effect microplastics have on marine inhabitants and the overall environment. To address and resolve the issues caused by microplastics within the marine environment, an in-depth analysis of the accumulation rate and characterization of microplastics is needed. Marine

sponges serve as large filtration systems that pump large quantities of seawater within a marine environment. Thus, filtration capacity marine sponges to potentially obtain microplastics from the water column within their inner tissue make them ideal candidates to sample and analyze the variation and temporal trends of microplastics. The objective of this study was to determine and measure the accumulation of microplastics in common demosponges over a temporal pattern. For this study, sponges were collected from Naval Live Oaks National Seashore located in Gulf Breeze, Florida. A total of 69 sponges were collected from November 2022 to October 2023. Furthermore, a 1-liter sample of seawater was collected in close proximity and similar depth of the sponges obtained to serve as the control variable. Once collected, selected demosponge tissue was processed and digested to identify the quantity and characterize types of microplastics present to establish a correlation in microplastics filtered. Additionally, DNA barcoding was employed to determine the taxonomic identification of the demosponge collected. Microplastics from sponges and water samples were compared and also compared temporally. By studying the classification and abundance of microplastics within demosponges, a concrete trend can be supported in order to create a better understanding of how the amount of microplastics change overtime in marine ecosystems.

Brianna Nicholson

Biology

Quantification of Microplastics in Atlantic Ghost Crabs (Ocypode quadrata) along the Florida Gulf Coast

Faculty Mentor(s): Alexis Janosik

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #5

Microplastics in our oceans have become a pervasive threat toward marine life as well as human economics, agriculture, and health studies. These small plastic particles threaten the health of ocean organisms and can result in issues relating to the food chain and biomagnification. As such, the objective of this study was to quantify and categorize microplastics contamination found in Atlantic ghost crabs (Ocypode quadrata) compared with seawater samples along the Northwest coast of Florida. The quantification of microplastics was conducted through the dissection, digestion, and microscopic examination of stomach contents of Atlantic ghost crabs from six sites. Microscopy results indicate that there are minimal levels of microplastics contamination present in crab samples. However, microplastics contamination is present in seawater samples. A QFTIR microscopy will be employed to identify the chemical composition of the microplastics. As a bioindicator species, data surrounding Atlantic ghost crabs is relevant to understanding human impacts.

Emily Ramsden

Biology

Development of MaSp2 Spidroin using M13 Phage Display

Faculty Mentor(s): Rodney Guttman

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #5

Spider silk is recognized as one of the strongest biomaterials, but is difficult to replicate artificially. This research attempts to use M13KE bacteriophage display techniques to synthesize the spider web protein, spidroin. Spidroin is composed of repeating amino acid sequences, called MaSp2's. While initial investigations in the prior year demonstrated promising outcomes; the amino acid sequence of the spidroin-containing DNA needed refinement by Dr. Guttman and myself. The resulting sequence contained the necessary spidroin sequence, consensus sequence, and cleavage sites for the protease, furin. The methodology of the project is foundational to creating unique phage libraries, a technique new to the Guttman lab. These included annealing the sequence to the primer, amplifying and purifying the annealed DNA, and joining that with the phage backbone M13KE vector. The resultant mixture was plated on LB/Xgal/tetracycline-resistant media, anticipating the growth of blue colonies indicative of successful MaSp2 integration. Once it is proven the colonies contain the MaSp2 analog, the phage will be incubated with the protease Furin. Furin will free the MaSp2 sequence to polymerize, or replicate, freely. A cloudy (turbid) solution is indicative of self-polymerization; this leads to extruding spider silk into strands. So far, I have successfully annealed, amplified, and purified the spidroin sequence as well as the M13KE phage, but have not achieved blue colonies containing the correct sequences. Overall, this research opens avenues for biomaterial and biotechnological innovation. The creation of custom phage libraries can advance biomedical research, including drug development and peptide and antibody discovery.

Hannah Roscom

Biology

Investigating the Cytotoxicity of Novel Therapeutic Agents via XTT Assay

Co-Author(s): Zahra Alikhani, Dr. Prerna Masih, Dr. Tanay Kesharwani

Faculty Mentor(s): Peter Cavnar

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #9

Developing novel therapeutic agents is becoming increasingly important as pathogenic species continue to evolve. In previous studies, benzothioephene derivatives have shown to have therapeutic effects and have been used to treat a wide range of high therapeutic potency diseases. In order to continue developing novel therapeutic agents, investigating the cytotoxicity of these novel compounds is necessary. In this project, the cytotoxicity of 13 novel benzothioephene derivatives is tested by treating HL-60 cells with the compounds and performing an XTT assay. The XTT colorimetric assay is based on the reduction of a yellow tetrazolium salt to a formazan dye by metabolically active cells. If the compounds display cytotoxic effects, then the wells will display a yellow color in order to indicate that the cells are no longer viable. The results showed that all but one compound displayed cytotoxic activity.

Maddy Scott

Biology

Inhibition of Calpain By LSEAL

Co-Author(s): Dr. Enid E. Sisskin, Allie N. Linkous, Sydney L. Truax, Lauren S.

Kemp

Faculty Mentor(s): Rodney Guttman

Lead Author Classification: UWF Undergraduate Student**Session: Main Poster Session****Session Time: 9:00-10:00; Location: Conf Room AB****Presentation Time: 9:00-10:00; Poster #4**

Calpains are a family of calcium-dependent thiol-proteases that selectively cleave their substrates. These include two major isoforms, calpain I and calpain II that are ubiquitously expressed. Calpain I or II hyperactivation is of interest because of the role proteolytic processing plays in multiple diseases and conditions including Alzheimer's disease (AD), muscular dystrophy, cataracts, and traumatic brain injury. A common theme among these pathologies is an increase in intracellular calcium levels that directly lead to increased calpain proteolysis of disease-relevant proteins. Specifically, calpains are thought to play a role in forming neurofibrillary tangles of the tau protein, one of the main pathologies associated with AD. The discovery of an inhibitor for calpain hyperactivity therefore will have potential therapeutic benefit. Because calpastatin is the endogenous inhibitor of calpain proteolytic activity it is a model for the development of small-molecule calpain inhibitors. Previous work identified the pentapeptide LSEAL as a calpain I inhibitor that shares structural homology with Calpastatin. Contrasting work by others questioned the efficacy of LSEAL as a calpain inhibitor using a fragment of the protease core of calpain I and full-length calpain II (Low et al., 2014). The present study aimed to evaluate the inhibitory capacity of LSEAL more extensively with human calpain I, porcine calpain II, and the human catalytic subunit of calpain II. We have shown that LSEAL inhibits calpain I and does not affect porcine calpain II. Experiments with LSEAL and the human calpain II catalytic subunit of calpain II are ongoing.

Ally Velez**Biology*****Synthesis of Novel Benzo[b]thiophene Derivative with Tri-Halobenzene Substituent with Potential for Antimicrobial Activity*****Co-Author(s): Hope Francis****Faculty Mentor(s): Prerna Masih****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 10:00-11:00; Location: Conf Room AB****Presentation Time: 10:00-11:00; Poster #6**

Since the development of antibiotics in the early 1900's, antibiotics have revolutionized medicine and treatment of infectious diseases worldwide. However, with the increasing use of antibiotics comes the increase of antimicrobial resistance (AMR). AMR can be attributed to improper use and abuse of antimicrobial drugs, and also to the highly mutative nature of microbes. Bacteria evolve faster than our medical advancements can keep up, costing the world nearly 5 million deaths in 2019. The chemical compound benzo[b]thiophene and its derivatives have garnered that attention and fascination of many in medical and chemical research for its purported antimicrobial, antifungal, anticancer, antidepressant, anti-inflammatory, analgesic, and antioxidant properties. Previous studies have indicated that certain substituents may increase the antibacterial activity of the benzo[b]thiophene derivatives while other substituents decrease the activity of the compounds. This study was conducted to explore the structural activity relationships (SAR) and antimicrobial

activity of a tri-halo benzyl alcohol (3-chloro-2,4-difluorobenzaldehyde) substituent on benzo[b]thiophene to hopefully improve its potency and specificity. Grignard reaction, Sonogashira coupling, and electrophilic cyclization reactions were utilized to synthesize the novel 3-halobenzo[b]thiophene compound. Flash column chromatography and rotary evaporation were used to purify the compound, which was confirmed using thin-layer chromatography. Success of synthesis was verified using Hydrogen Nuclear Magnetic Spectroscopy (¹H-NMR), Carbon Nuclear Magnetic Spectroscopy (¹³C-NMR), and Gas Chromatography-Mass Spectroscopy (GC-MS) to determine identity of starting compounds and final product. A 96-well plate microdilution assay was performed to determine the minimum inhibitory concentration (MIC) of the 3-chloro-2,4-difluorobenzaldehyde substituted 3-halobenzo[b]thiophene, which was then compared with the determined MIC of the cyclohexanol substituted 3-halobenzo[b]thiophene to determine whether the tri-halo benzyl alcohol substituent improved or impaired antimicrobial activity.

Lindsay Wolfe**Biology*****Synthesis of novel halogen substituted benzo[b]thiophene derivatives with potential antibacterial activity*****Co-Author(s): Mckenzie Peterson****Faculty Mentor(s): Prerna Masih****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 11:00-12:00; Location: Conf Room AB****Presentation Time: 11:00-12:00; Poster #8**

Antibiotic resistance (AMR) is a global health concern with an increasing number of infectious diseases caused by antibiotic-resistant bacteria. The discovery of novel antibiotics has failed to keep pace with antibiotic resistant bacteria. Benzo[b]thiophene has proven to be an important biological core structure in the development of pharmaceuticals and is present in several FDA-approved drugs. This study aims to evaluate structural activity relationship (SAR) by chemically modifying compounds and investigate the antibacterial activity. Changes upon this core structure may allow for differences in antibacterial activity potency and specificity. Halogens are important to alter the bioactivity of molecules such as increasing pharmacokinetics and virulence inhibition and enhancing antimicrobial activity. A recent study has shown that halogen size and electronegativity have an impact on antibacterial activity. This project explores whether the addition of halogens would increase antibacterial activity. Halogen substituted benzo[b]thiophene derivatives were synthesized using electrophilic cyclization, Grignard reactions, and Sonogashira coupling reactions. Purification of the desired product was conducted via flash column chromatography. Thin-layer chromatography (TLC) was used to confirm purity within each respective fraction. Structural analysis confirming compound identity was conducted via proton nuclear magnetic resonance (¹H-NMR), carbon nuclear magnetic resonance (¹³C-NMR), and gas chromatography mass spectroscopy (GC-MS). Microdilution susceptibility assays investigate the impact of the respective compounds as an antimicrobial agent. Minimum inhibitory concentration (MIC) results have shown promising effectiveness as an antibacterial agent. The MIC values of *S. aureus*, *M. luteus*, and *E. faecalis* range from 4, 8, and 8 Qg/ml, respectively. Preliminary

results have indicated the addition of some groups may increase the antibacterial activity of the benzo[b]thiophene derivatives while addition of certain groups decrease the activity of the compounds. In conclusion, this project will give strides towards identifying more potent benzo[b]thiophene derivatives with broader efficacy against microorganisms.



CENTER FOR ENVIRONMENTAL DIAGNOSTICS & BIOREMEDIATION

Lindsay Wolfe

Enterococcus within Santa Rosa Sound: Evaluating Fecal Contamination regarding Human Health Concerns

Co-Author(s): Barbara Albrecht

Faculty Mentor(s): Jane Caffrey

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #2

Recreational activities such as swimming, kayaking, and fishing are common throughout Santa Rosa Sound and surrounding areas. Human contact means it is imperative to routinely evaluate water quality. Fecal contaminants negatively impact human health from pathogenic bacteria such as *Enterococcus*. This bacteria is often found in the intestinal tract of humans and animals and the indicator of fecal contamination used by the Florida Department of Health (FDOH) in estuaries. *Enterococcus* has impacts on human health such as skin rashes, gastrointestinal distress, and diseases of the eye, ears, and respiratory tract. The FDOH has set the Beach Action Value (BAV) of acceptable *Enterococcus* levels within the environment for determination of human health at 70 MPN/100 mL. FDOH monitoring of Santa Rosa Sound has found *Enterococcus* levels above this standard. Identifying possible contamination sources to the Sound is critical. This project focused on six tidal creeks feeding into the Sound: Lands End Lane, Tidewater Dr. east, Williams Creek upper, Williams Creek lower, Navarre Park Beach, and a stormwater outfall at Navarre Park. Two methods of counting *Enterococcus* are compared: R-cards and Enterolert (QT). Water quality parameters including temperature, dissolved oxygen, salinity, pH, turbidity and water depth were measured using a YSI multimeter. Grab water samples will be analyzed for nutrients, chlorophyll a, color, and total suspended solids (TSS). These observations in data allow for the understanding of how local waterways are being affected by human activities and urbanization.

Denzel Ortiz-Hernandez

Why Settle Here? Understanding Epibenthic Settlement Dynamics in Perdido Bay

Co-Author(s): Makenzie Rothfus

Faculty Mentor(s): Amanda Croteau

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 2:00-3:00; Location: Conf Room AB

Presentation Time: 2:00-3:00; Poster #3

CEDB

CEDB

Stakeholders in Perdido Bay have raised concerns about water quality and its impact on encrusting organisms like barnacles and bivalves. Previous work in Perdido Bay indicates that water quality was broadly capable of supporting estuarine fauna and that larvae were present in the zooplankton. To examine settlement patterns of epibenthic organisms across the bay, settlement arrays were placed at seven locations along the estuarine gradient in Perdido Bay from January through July 2024. Each array contained five settlement substrates, continuous monitoring sensors (temperature, conductivity, and dissolved oxygen), and were placed at varying depths to analyze the influence of water column location, substrate type, and water quality on community composition. The substrates reflect materials commonly used for oyster restoration and in settlement studies. Each month, the arrays were pulled and substrates were retrieved to determine settlement rates and community composition. Monthly water quality samples were collected for dissolved nutrients, chlorophyll-a, color, and total suspended solids. Preliminary results from the first two months of monitoring indicate that settlement rates differ across the study area, and that the associated invertebrate community does vary by substrate type. This research seeks to provide insights into the short- and long-term settlement and survival of epibenthic organisms in Perdido Bay, thereby informing strategies for effective management and conservation efforts.



CHEMISTRY

Megan Brown

Volatile and Mineral Profiles of Microgreens in Hydroponics, Earth Soil, and Extraterrestrial Soils

Co-Author(s): Jennifer Willis, Shane Miller

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #11

This study investigates the volatile compounds and mineral content of microgreens cultivated in lunar, Martian, Earth, and hydroponic soils. Using Solid Phase Microextraction Gas Chromatography-Mass Spectrometry (SPME GC-MS) and Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES), the distinct aroma profile and mineral composition were determined. The study underscores microgreens' potential in space agriculture due to their compact size, rapid growth, and compatibility with hydroponic systems. Understanding their sensory attributes and nutritional quality in extraterrestrial environments is vital for future space exploration and sustainable food production beyond Earth.

Megan Brown

Synthesis of an Unsymmetrical Polyamine Mimicking the Active Site of Carboxypeptidase A

Co-Author(s): Vu Pham

Faculty Mentor(s): Ajay Lajmi

Lead Author Classification: UWF Undergraduate Student

Chemistry

Chemistry

Session: Main Poster Session**Session Time: 11:00-12:00; Location: Conf Room AB****Presentation Time: 11:00-12:00; Poster #17**

Macrocyclic polyamines serve as ligands to coordinate with metal ions and are commonly used to mimic active sites of enzymes. One such amine by the name of 1,5,9-Triazacyclododecane (TACD) was synthesized previously due to its ability to coordinate zinc ions through its nitrogen groups by mimicking the active residues of Carboxypeptidase A. This work focuses on the synthesis of a 1,5,9-triazacyclotridecane (TACT) polyamine. Once synthesized, the product was confirmed using H and C nuclear magnetic resonance and mass spectroscopy before testing the effect of ring stability in Michaelis-Menten enzyme kinetics with a β -cyclodextrin covalently attached to one of the amines acting as a hydrophobic substrate pocket.

Bianca Dawson**Chemistry*****Reparation of chitin-based films for photosensitization of singlet oxygen*****Co-Author(s): Farah Lino, Brianna Perea****Faculty Mentor(s): Bianca Dawson****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 12:00-1:00; Location: Conf Room AB****Presentation Time: 12:00-1:00; Poster #4**

Chitin (a polymer of N-acetylglucosamine) is one of the most abundant natural polymers on earth and can be found in crustacean shells, fungi, and insects. Chitosan (a polymer of glucosamine) is produced commercially for a wide variety of applications. Our group has focused on the use of these waste materials as a sustainable path to functional materials for environmental remediation applications. We believe the combination of sourced waste materials and more energy efficient ball milling techniques will provide a low-cost option for water purification. Here we present the development and modification of chitosan for the photosensitization of singlet oxygen. A mechanochemical synthetic protocol was developed for the functionalization of chitosan with three anhydrides: 1,8 naphthalic anhydride, 4-bromo-1,8-naphthalic anhydride, and naphthalene-1,4,5,8-tetracarboxylic acid dihydride. The resulting chitosan-imide materials were characterized by Fourier transform Infrared spectroscopy, powder-Xray diffraction, and Thermogravimetric analysis. A film preparation method was developed with commercially available materials. Preliminary results suggest that the photosensitization of singlet oxygen is possible from chitosan modified chitosan and quantum yields of singlet oxygen are high when compared to similar materials. Future work includes the continuation of photochemical experiments to determine the mechanism of singlet oxygen generation and the preparation and comparison of films to the currently measured powdered samples.

Michele Foulkrod**Chemistry*****Instrumental Analysis: An in-depth review of the novel MALDImini-1 by Shimadzu, Inc.*****Co-Author(s): Elijah Mayo****Faculty Mentor(s): Karen Barnes****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 9:00-10:00; Location: Conf Room AB****Presentation Time: 9:00-10:00; Poster #7**

Matrix-assisted laser/desorption ionization mass spectrometry is a widely used chemical instrument that utilizes the principles of electric charge and molecular energy to determine structural characteristics of various compounds. Traditionally, mass spectrometers are large, bulky, and utilize a great deal of resources such as vacuum pumps and electricity causing them to be virtually stationary. The MALDImini-1, debuting in 2019, solved these problems with its small size and minimal resource cost without sacrificing signal quality. At 2,112 cubic inches, the MALDImini is roughly the size of a toaster oven, only requires 100V (less than a standard home outlet), and yet has the mass spectral range of 650-70000 m/z and the impressive ability to measure biomolecules at microquantities. This one-of-a-kind instrument combines the capabilities of a professional lab-grade mass spectrometer with unprecedented efficiency and motility. In this review, we will discuss the unique features and applications of the Shimadzu MALDImini-1 and its potential impact on academic, governmental, and industrial research.

Anne Harper**Chemistry*****Colorimetric Characterization of Ligands for Metal Cation Detection*****Co-Author(s): Brianna Meredith, Dr. Tanay Kesharwani****Faculty Mentor(s): Pamela Benz****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 1:00-2:00; Location: Conf Room AB****Presentation Time: 1:00-2:00; Poster #6**

This project analyzed the ability of a ligand, dibenzo[b,e][1,4]dioxine-2,3,7,8-tertaamine tetrahydrochloride, to detect heavy metal ions in aqueous solution. Ligands such as these could potentially be used to detect heavy metals in drinking water. The interaction between the ligand and metal cations results in a conjugated structure which was analyzed using UV-Vis spectrophotometry. This research focused specifically on detecting copper(II) ions in the form of copper(II)chloride and copper(II)acetate and tin(II) from tin(II)chloride. UV-Vis spectra confirmed the formation of a new coordination complex for each solution examined. Tin(II) showed a peak around 517 nm while Cu(II) acetate and Cu(II) chloride had peaks at 525 nm and 511 nm respectively. Using the maximum absorbance values and mole fraction of metal cation, Job's plot analysis showed the ligand reacted with copper in a 2:1 stoichiometry. Binding affinities will also be determined for each metal cation tested.

Anne Harper**Chemistry*****Advancements in the Miniaturization of Gas Chromatography*****Faculty Mentor(s): Karen Barnes****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 2:00-3:00; Location: Conf Room AB****Presentation Time: 2:00-3:00; Poster #5**

Recent years have witnessed incredible enhancement in the miniaturization of analytical instruments across various forms of spectroscopy. The impetus behind these advancements in miniaturization stems from the prerogative to reduce

instrument size and costs, increase portability, and increase throughput through enhanced automation. Comparable to other disciplines, analytical instruments have benefited from technological breakthroughs in microelectronics, facilitating the downsizing of various components. This poster specifically offers an overview of the FROG-5000™ Portable Gas Chromatograph. The FROG-5000™ can detect volatile organic compounds (VOCs)(Volatile Organic Compounds) in air, water, and soil, delivering lab-quality results in less than 10 minutes. It is the only portable gas chromatograph that weighs less than 5lbs (2.2kgs)1. The FROG-5000™ can be used in the laboratory, the field, and remediation sites and could have possible applications in sectors of research such as space exploration, industrial operations, and environmental studies.

Trevor Hemming

Chemistry

Green Synthesis of Copper(I) 1-Hexynide

Faculty Mentor(s): Timothy Royappa

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #13

Copper(I) acetylides are important compounds for the production of many pharmaceuticals. Current methods for producing these compounds are tedious and time consuming. Many copper compounds are highly sensitive to air, and require air free conditions for the complete duration of production. Our methods eliminate the need for an air free filtration, making the process simpler. Many methods for making these compounds are environmentally unfriendly, as they use hazardous solvents. This “green” approach replaces these dangerous solvents with 95% ethanol, which is widely available and more environmentally friendly. By using affordable material and these simple methods, pharmaceutical companies could lower the prices of these medications, making them more available for those who need them. The aim of this project is to utilize previously optimized methods developed in our laboratory to produce copper(I) 1-hexynide from commercially available 1-hexyne. The copper(I) acetylides are characteristically yellow in color. In our process, copper(I) acetylides are formed from the reaction of a weak acid (1-hexyne in this project) with a strong base (copper(I) oxide, Cu₂O) in ethanol, in the presence of an acid catalyst. We have found that hydrochloric acid introduces chloride contaminants into our desired product, so we have recently started using sulfuric acid instead. Also, it seems that colder reaction temperatures result in the desired bright yellow product, whereas room temperature reactions produce impure brownish yellow products.

Victoria Hennick

Chemistry

Got lead? An analytical approach to determining concentrations of lead in Stanley cups

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #8

The Stanley cup craze has consumers all over the United States and beyond buying these insulated cups in a frenzy. They have become quite popular with

their bright colors, lasting insulating capabilities and convenience. Recently, Stanley cup owners have claimed that the popular item is testing positive for lead. The company denies these claims, but we received a positive result upon testing the cups with an online purchased lead swab. In this experiment, we aim to determine the actual concentration of lead in several beverages after remaining in 2 different Stanley cups for a specified amount of time. The beverages to be tested include room-temperature water, hot water, coffee and tea. Duplicate samples of each of the beverages from both cups will be run using Inductively Coupled Plasma - Optical Emission Spectroscopy (ICP-OES) against a known lead-containing standard.

Ben Hensor

Chemistry

The Cuprocene Anion

Faculty Mentor(s): Timothy Royappa

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 2:00-3:00; Location: Conf Room AB

Presentation Time: 2:00-3:00; Poster #10

Metallocenes are a class of molecules that have a sandwich-like structure. They are composed of two cyclopentadiene rings that are parallel to each other and a metal cation sandwiched in between. This experiment aims to synthesize the first true copper containing metallocene, the cuprocene anion. Various methods have been employed in an attempt to synthesize this anion, including using various copper-containing reactants, numerous catalysts and ligands, as well as many different reaction environments. The experiments have not yet been able to produce the desired anion, but many promising reaction conditions (such as oxygen and water free environments) have been identified and are being applied to future trials.

Josh Legaspi

Chemistry

Synthesis and Structural Elucidation of a Polyamine Active Site Containing Ligand Mimicking Carboxypeptidase A

Co-Author(s): Megan Brown

Faculty Mentor(s): Ajay Lajmi

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #8

Metalloenzyme mimics are popularly used to study structure and function of enzymes by determining the effect of therapeutic inhibitors via in vitro screening. Presented here is the synthesis and structural elucidation of a Carboxypeptidase A mimic, namely, mono-6-deoxy-6-(1,5,9-triazacyclododecanyl)- β -cyclodextrin (TACD- β -CD). The ligand of interest will be synthesized in an SN₂ reaction between 1,5,9-triazacyclododecane (TACD) and mono-6-deoxy-6-(p-toluenesulfonyl)- β -cyclodextrin (TsO- β -CD) and characterized using ¹H, ¹³C, and ¹H-¹H nuclear magnetic resonance and high resolution mass spectroscopy. The purified ligand will have Zn (II) and Ba (II) coordinated to the active site and hydrophobic pocket for developing the optimized conditions of Michaelis-Menten study for therapeutic inhibitors of Carboxypeptidase A.

Josh Legaspi**Chemistry*****Effects of Mono-6-deoxy-6-(1,5,9-triazacyclododecanyl)- β -cyclodextrin Catalytic Hydrolysis in Response to Varying Substrate Concentration and pH*****Co-Author(s): Megan Brown****Faculty Mentor(s): Ajay Lajmi****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 2:00-3:00; Location: Conf Room AB****Presentation Time: 2:00-3:00; Poster #7**

Metalloenzyme mimics are popularly used to study structure and function of enzymes by determining the effect of therapeutic inhibitors via in vitro screening using Michaelis-Menten enzyme kinetics. This study explores the hydrolytic rate law of the Carboxypeptidase A metalloenzyme mimic, mono-6-deoxy-6-(1,5,9-triazacyclododecanyl)- β -cyclodextrin (TACD- β -CD), to quantify its dependency on substrate concentration and pH. Esterase activity of the ligand is mimicked with the coordination of Zn (II) and Ba (II) ions to allow hydrolysis of p-nitrophenyl acetate (PNPA) substrate in varying concentrations between 30-500 μ M and pH 7.5-10.5. From these results, therapeutic inhibitors will be proposed to limit the hydrolysis of various natural substrates and analogs.

Josh Legaspi**Chemistry*****Synthesis and Characterization of a Symmetrical Polyamine Mimicking the Active Site of Carboxypeptidase A*****Faculty Mentor(s): Ajay Lajmi****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 2:00-3:00; Location: Conf Room AB****Presentation Time: 2:00-3:00; Poster #8**

Metalloenzyme mimics are popularly used to study structure and function of enzymes. This work highlights the synthesis of a twelve-membered polyamine designed to mimic the active site amino acids of Carboxypeptidase A, namely His-69, His-196, and Glu-72, which allow for esterase activity directed towards peptide substrates and esters. Synthesis of the polyamine will be achieved using an SN2 reaction between hexahydropyrimidopyrimidine and 1,3-propanediol di-p-tosylate to form 1,5,9-triazacyclododecane (TACD). The final polyamine product will be characterized using ¹H and ¹³C nuclear magnetic resonance and mass spectroscopy. Once isolated, the final product will be used as a precursor to the final β -cyclodextrin containing ligand which will be applied in Michaelis-Menten enzyme kinetics.

Farah Lino**Chemistry*****Chitin-based materials for wastewater treatment through the photosensitization of singlet oxygen*****Co-Author(s): Bianca Dawson, rianna Perea, Daesha Henry, Joyce Mattes****Faculty Mentor(s): Patrick Barber****Lead Author Classification: UWF Undergraduate Student****Session: Main Oral Presenters****Session Time: 12:30-1:45; Location: Auditorium****Presentation Time: 1:00PM**

Chitin (a polymer of N-acetylglucosamine) is one of the most abundant natural

polymers on earth and can be found in crustacean shells, fungi, and insects. Chitosan (a polymer of glucosamine) is produced commercially for a wide variety of applications. Our group has focused on the use of these waste materials as a sustainable path to functional materials for environmental remediation applications. We believe the combination of sourced waste materials and more energy efficient ball milling techniques will provide a low-cost option for water purification. Here we present the development of a mechanochemical synthetic strategy for the modification of chitosan, the characterization of the resulting materials, and the photophysical characterization of singlet oxygen generation. Our results suggest that the prepared materials photosensitize singlet oxygen very well with high quantum yields of singlet oxygen when compared to similar materials.

Dena Mahawongnan**Chemistry*****The Use of Renewable Chemical Feedstocks for the Construction of Redox Active Molecules*****Faculty Mentor(s): Jacob Tracy****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 12:00-1:00; Location: Conf Room AB****Presentation Time: 12:00-1:00; Poster #7**

Conventional power grids using non-renewable energy have been the main source of energy for many countries. However, many countries are turning their attention towards renewable energy generation. As renewable energy usage increases, the impact of renewable energy on the electrical grid has negatively affected the network stability and resilience due to the intermittent nature of renewable sources. Redox flow batteries are on the horizon as a promising solution to solve difficulties pertaining to the usage of renewable energy. In the redox flow system, energy is stored by paired redox reactions of molecules that are on the opposite sides of an electrochemical cell. Typically, redox active material used in redox flow batteries are derived from petroleum products. However, the introduction of renewable chemical feedstocks to access redox active materials could show potential benefits regarding sustainability. This work presents some initial synthetic efforts towards building a small-library of redox-active organic molecules made in part or in whole from chemical feedstocks accessible from biomass sources.

Declan McGurk**Chemistry*****An environmentally benign and inexpensive organic semiconductor via cascade cyclization*****Co-Author(s): Arav Jain****Faculty Mentor(s): Tanay Kesharwani****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 11:00-12:00; Location: Conf Room AB****Presentation Time: 11:00-12:00; Poster #15**

Fused heterocyclic compounds are useful in a wide range of applications. Most notably they can be used as high-efficiency organic semiconductors. Organic semiconductors boast several advantages over standard, inorganic semiconductors with organics being cheaper, easier to synthesize, flexible, and more environmentally friendly. Fused heterocycles are a class of compounds that consist

of multiple rings that are connected edge-to-edge and are the most sought-after organic molecules for organic semiconductor research. This project aims to develop and optimize a new efficient reaction scheme that can create multiple fused rings effectively, thereby reducing the waste generation and cost to produce such molecules on the industrial scale. Varying methods (alkyne-alkyne coupling, reduction, etc.) will be used to form specific dialkynes. Then, a salt will be used to cyclize these dialkynes into fused systems that have semiconductor properties.

Shane Miller

Chemistry

The Determination of UV/Blue Light Absorbance of Contact Lenses using UV-Vis and FTIR Spectroscopy

Co-Author(s): Maddie Tarrance

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #12

UV radiation is known to be extremely harmful to eyes and can lead to vision loss, cataract progression and the development of some cancers. There have been many developments in contact lenses that lead to increased UV protection, and multiple brands advertise varying levels of UV protection in different types of contact materials they offer. The primary objective of this project was to identify the difference in UV radiation and Blue Light transmission through multiple contact lens materials and to determine the level of protection provided. We also aim to identify the materials used in the contact lenses through Fourier-Transform Infrared Spectroscopy. Contact lens samples were run through an UV-Vis spectrometer at wavelengths correlating to UV-A radiation, UV-B radiation, UV-C radiation, and blue light in order to obtain corresponding absorbances for each wavelength. Contact lens samples were also run on an ATR-FTIR instrument with a spectral library in order to identify the compounds that make up each lens sample. Of the four brands that were tested, Acuvue Oasys was found to absorb large amounts of UV-B radiation and UV-C radiation, Acuvue Moist absorbed large amounts of UV-B radiation, Acuvue Max absorbed large amounts of all UV radiations and blue light, and Dailies AquaComfort did not effectively absorb large amounts of any UV radiations and blue light. It was concluded from our results that out of the four tested contact lens brands, Acuvue Max is the most effective at protection against all forms of UV radiation and blue light while Dailies AquaComfort was the least effective.

Shane Miller

Chemistry

Improvement of GCMS Injection by Sorbent Pens for Air Monitoring

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #9

The Sorbent Pens developed by Entech Instruments are engineered for more efficient Gas Chromatograph/Mass Spectrometer (GCMS) injection. Each Sorbent Pen contains a personalized sorbent material coating used to absorb a specific analyte that can then be analyzed by use of GCMS. Sorbent Pens are made to be

simple, quick, portable, cheap, versatile, and allow for testing of small sample volumes. While there are various types of Sorbent Pens, the Diffusive Sorbent Pens (DSP) and Active Sorbent Pens (ASP) are made specifically for collecting air samples. DSP is used to passively monitor specific compounds over a long period of time while ASP quickly collects samples by drawing a known volume of air through the pen with the use of a vacuum. After collecting the analyte of interest, the Sorbent Pen can be desorbed into a GC or GCMS by use of the Sorbent Pen Desorption Unit (SPDU) 5800 in order to accurately analyze volatile or semi-volatile compounds via headspace. These air monitoring Sorbent Pens can be used for chemical composition determinations of the atmosphere for hazardous environments and pollution hotspots, fence line monitoring, geographical data trend determination, and much more.

Jason Neidigk

Chemistry

Synthesis and Isolation of Carbocation Intermediate and its uses in Drug Discovery

Co-Author(s): Joshua Legaspi

Faculty Mentor(s): Ajay Lajmi

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 2:00-3:00; Location: Conf Room AB

Presentation Time: 2:00-3:00; Poster #9

Small organic molecules have been identified as target molecules for drug screening and mimics of metalloenzymes; one such molecule is 1, 5, 9-triazacyclododecane (TACD). TACD has been identified as a precursor to the metalloenzyme active site mimic of carboxypeptidase A. Synthetic methods of TACD are well established in the literature, but yields remain relatively low, and the synthetic process takes 48hrs in addition to purification and isolation methods. Through such processes, product loss is prevalent. In addition to product loss, a carbocation intermediate exists for a brief period, which, on exposure to strong nucleophilic bases, is hydrolyzed thus leading to further product loss. The goal of the project is to purify and isolate the carbocation intermediate, increase carbocation and TACD yields, and develop methodologies for the purification of TACD. Such methodologies include column chromatography development, the implementation of non-nucleophilic bases, and crystallization processes. Higher yields and purity of TACD will allow us to screen certain drugs in a more precise fashion.

Georgia Ness

Chemistry

Copper catalyzed synthesis of 3-chlorobenzo[b]thiophenes via electrophilic cyclization

Co-Author(s): Peyton Stalcup

Faculty Mentor(s): Tanay Kesharwani

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #7

Benzo[b]thiophene scaffolds form the backbone of many materials and pharmaceutical products. These sulfur heterocycles are known for their antidepressants, anti-inflammatories, antimicrobial and anti-tumor activities. Most common synthesis of 3-halobenzo[b]thiophenes derivatives involves

halocyclization of 2-alkynylthioanisoles. These cyclization methodologies are known to work well for 3-bromo- and 3-iodo substituted benzo[b]thiophenes. However, synthesis of 3-chlorobenzo[b]thiophene via chlorocyclization reaction has proven to be challenging. Most of the current chlorocyclization methodologies involve the use of excess or stoichiometric amounts of copper salts. Herein, we report a novel copper-catalyzed chlorocyclization methodology for the synthesis of benzo[b]thiophene utilizing 1,3-dichloro-5,5-dimethyl hydantoin as the source of chlorine. Our new methodology requires mild reaction conditions and results in the excellent yields of the product.

Lilly Nincevic

Chemistry

Progress Towards the Synthesis of Trifluoromethyl Alkynyl Ketones through the Mild Oxidative C-C Bond Cleavage of Trifluoromethyl Propargyl Alcohols

Co-Author(s): Chancy Lee

Faculty Mentor(s): Jacob Tracy

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #15

Trifluoromethyl alkynyl ketones are important chemical building blocks for the synthesis and study of bioactive molecules. However, the introduction of such a group into these important molecules classically relies on the use of strong bases and strong nucleophiles. As a result, the functional group tolerance of these reactions is limited and necessitates careful, and often lengthy, synthetic planning. This work aims to find a more mild method of synthesizing trifluoromethyl alkynyl ketones. To do so, we will explore the use of trifluoromethyl propargylic alcohols as masked trifluoromethyl alkynyl ketones that can be revealed upon treatment with electrophilic halogen reagents at room temperature and without the presence of strong bases. Specifically, a small number of trifluoromethyl ketones have been synthesized from commercially available reagents and which contain various functional groups. These substrates were then subjected to the electrophilic halogenation conditions and the functional groups' influences on the efficacy of synthesizing trifluoromethyl alkynyl ketones was determined.

Zach Patane

Chemistry

Importance of LabSolutions CS

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #5

LabSolutions CS™ software, developed by Shimadzu, provides an affordable, easy access alternative for obtaining results. This software operates to make obtaining results less tedious and more convenient to the person, rather than having tedious integration with instrument specific programs. This program allows for clientele to access any result from any place necessary, and as well create results, if the data is first acquired. What makes it appealing is that it is not instrument dependent, and works for various instruments, such as infrared spectroscopy, chromatography, fluorescence, and more. Obtaining results

becomes more accessible, and data is secured through the server designated for LabSolutions CS™.

Brianna Perea

Chemistry

Photosensitization of singlet oxygen by chitosan-based materials

Co-Author(s): Farah Lino, Bianca Dawson

Faculty Mentor(s): Patrick Barber

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #11

Chitosan, a derivative of the naturally occurring polymer chitin, is incredibly abundant as a waste material of the shellfish industry. The intrinsic properties of chitosan, including being biocompatible, biodegradable, and antimicrobial, have led to a wide range of commercial applications from packaging to dental sutures. Researchers have sought to modify chitosan for singlet oxygen production enabling applications in photodynamic therapy. Photosensitizers such as rose bengal and porphyrin derivatives appended to chitosan have been studied to show efficient singlet oxygen generation under light irradiation. Our research group is focused on the modification of chitosan using solventless ball-milling techniques. Here we present a detailed study of the photosensitization of singlet oxygen by chitin- and chitosan-based materials. The quantification of singlet oxygen production is compared to known photosensitizers and determined through multiple techniques to confirm the results. We seek to understand the mechanism of singlet oxygen production to provide materials with applications in water treatment.

Mariana Sabino Masculi

Chemistry

Synthesis of a Calpain Protein Active Site Mimic

Faculty Mentor(s): Ajay Lajmi

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #5

Calpains are a family of thiol- and calcium-dependent endoproteases including two common enzymes, named m-calpains and q-calpains. Although it was confirmed that they are two different enzymes, both enzymes are affected by calpastatin, a multi-headed, reversible competitive calpain inhibitor, which occurs by cooperating with the hydrophobic pocket to block its active site. The calpain regulation still has a conflict of results regarding the physiological and pathological functions. Consequently, a more comprehensive analysis of calpain substrate targeting will help clarify the role of calpains and how their inhibition or activation affects human health. For a better understanding, 1,4,7-Thiadiazonane is the compound that will be tested, looking for how it will affect the active site of calpain protein in Alzheimer's disease. To obtain this product the organic compound 2,2'-thiobis(ethanamine) will be synthesized in a four-step reaction; through stirring in a bimolecular nucleophilic substitution in an exothermic reaction with temperature changes by cooling, heating, and at room temperature. The multistep synthesis product will be isolated by using acid reflux, rotary evaporation, and recrystallization techniques on a mg scale. The

products from the multi-step synthesis will be identified by proton and carbon nuclear magnetic resonance (NMR) and gas chromatograph mass spectrometer (GCMS). Once the final product is confirmed, it will be used for functional testing in collaboration with the biology department.

Mariana Sabino Masculi

Degasser, an new way to prevent bubbles

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #10

The presence of gases dissolved in liquids can pose challenges in fluidic systems. Changes in pressure or temperature can lead to the formation of bubbles by these gas molecules, impacting the equipment's accuracy, precision, and overall performance. Efficient degassing is a solution that effectively removes dissolved gases from the fluid stream, preventing bubble formation. This process not only reduces noise but also enhances baseline stability, shortens startup times, and ensures more consistent results. In laboratory analysis equipment like liquid chromatography, HPLC, ion chromatography, and mass spectrometry, as well as in machines for semiconductor manufacturing or assembly, and instruments for immunology, hematology, and in vitro diagnostics, the inclusion of a degasser in the fluid path is crucial for achieving more reliable and uniform outcomes.

Amanda Schwartz

Green Synthesis of Copper (I) 3-Fluorophenylacetylde

Faculty Mentor(s): A. Timothy Royappa

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #14

Fluorinated copper (I) phenylacetylides are important components for the production of many pharmaceuticals, including statins. Current methods for synthesizing these compounds are tedious, requiring airfree conditions and the use of hazardous solvents. This project seeks to synthesize these compounds using simple, cost effective methods, as well as more environmentally friendly solvents. This project implements simple acid-base chemistry in order to form the desired products. Using this method, pharmaceutical companies could lower the prices of these medications, making them more available for those who need them.

Kayla Spencer

Photochemical Formation of Hydroxyl Radicals by Petroleum Products

Co-Author(s): Anne Harper

Faculty Mentor(s): Pamela Benz

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #14

Petroleum products are introduced into the environment through a variety of mechanisms and are shown to produce highly reactive oxygen species through

Chemistry

photochemical reactions. One example is motor oil contamination which can come from sources including cars, trucks, and recreational water vehicles. Motor oils both synthetic and non-synthetic can produce potentially toxic components through natural weathering processes. To help assess overall ecosystem impact, a key consideration in understanding the mechanism of toxicity is examination of components produced through photochemical processes. Water accommodated fractions (WAFs) are samples of water mixed with oil and are commonly used to mimic environmental conditions when an oil spill occurs. Over time, water soluble species form and partition into the water phase of the WAF. The first part of this study examined photochemical degradation and subsequent toxicity of various synthetic oils when exposed to artificial sunlight for 6 hours. Benzoic acid served as a radical trap for any hydroxyl radical species produced. Using high performance liquid chromatography (HPLC), the resulting formation of para-hydroxybenzoic acid (p-HBA) was measured and total hydroxyl radical flux determined. The second part of this study examined local marinas for potential petroleum contamination from recreational water vehicles. Using the benzoic acid method, photochemical hydroxyl radical production was examined. Water was sampled at various times of the year including summer (on season) and winter (off season) months. Contamination from heavy metals, such as arsenic, were determined by ICP-OES with microwave digestion.

Audrey Stemen

Synthesis, photophysical, and solid-state characterization of luminescent lanthanide ion complexes

Co-Author(s): L. David Jaramillo, Gia Capristo

Faculty Mentor(s): Patrick Barber

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #6

Due to their intrinsic luminescent properties, lanthanide ions have been used for a wide range of applications including LED lamps, display phosphors, and biological imaging. Phenanthroline and its derivatives have been studied extensively as photosensitizers of lanthanide (III) ion emission. We recently prepared and studied two phenanthroline-based ligands containing appended amines and alcohols for their capabilities as sensitizers of europium(III). Here we will present the synthesis and characterization of the new ligands and their Eu(III) complexes. Additionally, solid-state characterization on the ligands and complexes will be discussed. Finally, photophysical characterization of the complexes, including quantum yields of luminescence and excited-state lifetimes are compared to other lanthanide complexes containing phenanthroline ligands.

Chemistry

Chemistry

Chemistry

Mikayla Swatscheno

Analysis of Acetaminophen Using Solvent Dependent Cyclodextrin Enhanced Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry

Co-Author(s): Elijah D. Mayo, Victoria Drake, Rosemary Nguyen, Joey C.

Peterson, Kilea A. Yetter, Brianna Johnson, Jonathan E. Hobbs

Faculty Mentor(s): Karen Molek

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Chemistry

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #18

Matrix-assisted laser desorption ionization mass spectrometry (MALDI-MS) was used to analyze pure acetaminophen, a common analgesic and antipyretic. In the analysis of large biomolecules, such as peptides and proteins, matrix fragmentation was insignificant as it mainly appears in the 500 m/z region, outside of these molecules' mass spectrum range. However, smaller organic molecules like acetaminophen (151 m/z), were obstructed by matrix fragmentation. In previous studies, cyclodextrins have been shown to decrease matrix fragmentation and enhance signal for small mass analytes. Cyclodextrins are macrocyclic oligosaccharides composed of glucopyranose subunits that are commonly used in biomedical research for drug delivery mechanisms. Cyclodextrins have varying solubility, and this property can be used, so that cyclodextrin is both a surface and matrix supporter. In this study, the analysis of pure acetaminophen was conducted using α -cyclodextrin and β -cyclodextrin mixtures in varied solvents. The results were analyzed by comparing peak intensities and signal-to-noise ratios for each enhancement and their respective standard deviations.

Maddie Tarrance

Chemistry

Soda-lightful: The Determination of Natural and Artificial Flavors in Carbonated Beverages using GC-MS using Headspace Analysis

Co-Author(s): Shane Miller, Alana Davis

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #13

Objective: The primary objective of this project is to identify the presence of Vanillin in several soda brands to determine the use of natural or artificial vanilla flavors in the product. A&W Concentrate Company and Keurig Dr. Pepper Inc. were recently prosecuted for the mislabeling of their Soda products as made with "Aged Vanilla". Aged Vanilla was claimed to be naturally sourced Methyl Vanillin; however, the flavor was predominantly from an artificial ingredient, Ethyl Vanillin. Vanillin is a flavor source for many soda types such as Root Beer, Cream Soda, and Dr. Pepper. Many other brands could also be using synthetic substitutes in their products. We aimed to detect and identify the compound responsible for the vanilla flavor through GC/MS and Headspace analysis instrumentation. Methods: Volatiles of each sample were extracted through headspace analysis. A type of sampling technique in GC-MS analysis where the gas layer, headspace above the sample in a vial is analyzed instead of the sample layer. Gas Chromatography is used to separate these volatile compounds. Using the data we were able to identify the concentration and presence of different flavor compounds in our sample. Significance: Our project will allow us to determine whether the vanilla compounds used in soda products is able to be identified through laboratory testing and can be compared and identified as deceptively used in label claims.

Maddie Tarrance

Chemistry

Determination of Kinetic Degradation of Rum Volatiles Exposed to Oxygen by Headspace GC-MS/MS

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #3

Objective: The primary objective of this project is to identify the volatile compounds contributing to the overall flavor profile of distilled rum spirits. The distillation of rum is an intense process to get the ideal flavor composition as the spirit is put through many rounds of clarification and aging processes; however, many businesses using these spirits may not take into account the change in flavor resulting from allowing these bottled spirits to sit open. Pour spouts are a common practice in many bars for ease of liquor dispensing, and at the end of a long shift, many businesses do not recap their bottles properly or at all. Our project aimed to test whether allowing these spirits to sit open for extended periods of time can lead to a loss of volatile flavor compounds and significantly alter the profile of these spirits. Methods: Samples of the spirit were collected at various intervals starting over a 24-hour period, to a one-week period and ending with a 3-week period. These samples were tested and processed in installments as each period was complete. Volatiles of each sample were collected by headspace analysis. This is a type of sampling technique in GC-MS where the gas layer, the headspace above the sample in a vial, is analyzed instead of the sample layer. Gas Chromatography is used to separate these volatile compounds. Using the data, we were able to identify the concentration and presence of different flavor compounds in our samples. These compounds were compared to initial samples to identify changes in overall composition. Significance: Our project will allow us to determine whether improper handling of spirits in commercial settings contributes to an overall loss of flavor and to identify the upper limits/timeline for oxygen exposure

Samantha Watkins

Chemistry

Copper(I) 3-Ethynylphenylammonium Hydrogensulfate Synthesis

Faculty Mentor(s): Timothy Royappa

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #6

This research focuses on synthesizing a novel copper(I) compound, copper(I) 3-ethynylphenylammonium hydrogen sulfate salt. The synthesis methods we developed have proven to be very effective. Current research aims to refine the purity and yield of the product through slight modifications of synthesis and wash methods. Once perfected we will focus on expanding the scale of the synthesis and testing for further applications of our developed methods. Through our research we have successfully developed a new copper(I) compound.

Jennifer Willis

Chemistry

Doll-ightful Data: FTIR Characterization of the Paint Composition of Cabbage

Patch Kids

Co-Author(s): Shane Miller

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #9

In the captivating world of children's play, where tablets and racecars vie for attention, dolls stand out as timeless companions. Among these, Cabbage Patch Kids ingeniously designed a baby doll whose closed eyes unveil a hidden eye color when gently rubbed with a damp towel. The effortless removal of the paint, leaving no trace behind, sparked curiosity about the paint's composition. This experiment looks into the composition of the paint using Fourier-transform infrared spectroscopy, a form of infrared spectrum that allows one to look at the composition of a sample in a solid or liquid form. It was discovered that polymers, propanoic acid, and black nonmetallic paint were characterized by the instrument, painting a vivid picture of what makes up the paint on the eyes of the Cabbage Patch Kids doll.

Jennifer Willis

Chemistry

Exploring the Advancements of Supercritical Fluid Chromatography with Shimadzu's Nexera Analytical SFC

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #10

Many scientific disciplines and industries need to purify and quantify samples involved in a mixture. One of these disciplines involves the pharmaceutical industry, with an outstanding need to better purify racemic mixtures to separate one beneficial enantiomer from another that is potentially fatal. Liquid Chromatography Mass Spectrometry (LCMS) can quantitate a sample but typically uses a lot of solvent, cannot be used with smaller fractions, and does not have as high of a resolution, either in LCMS or High-Performance Liquid Chromatography. However, Shimadzu has developed a new instrument that could change how these companies quantify and purify their samples with the Nexera Analytical Supercritical Fluid Chromatography. This piece of instrumentation utilizes supercritical carbon dioxide as the mobile phase by building up the pressure and chilling the carbon dioxide to supercritical fluid levels. This mobile phase then travels through the instrument until it reaches a diverging point: some of the samples will be read in a mass spectrometer, and the others will be collected for more testing or the next step in the compound's journey. This game-changing instrumentation has the potential to change the way pharmaceutical companies, as well as research labs, separate compounds in the name of health and science.

Jennifer Willis

Chemistry

Just Brew It: A Comparison in Caffeine Between Deathwish and Starbucks Brand Coffee

Co-Author(s): Anne Harper, Shane Miller

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #11

Coffee connoisseurs and avid fans have their preferred brews for getting their

daily dosage of caffeine. Recently, Deathwish coffee has been labeled the "world's strongest coffee", but just how much caffeine does one get from Deathwish? Does the machine you use to get your cup of joe help in getting the most amount of caffeine for your cup? How does Deathwish coffee compare to Starbucks brand coffee? This study attempts to answer these questions. HPLC was used to measure caffeine content in samples of coffee from different methods Deathwish coffee grounds and coffee machines. HPLC analysis uncovered differences in the different types of Deathwish coffee, including Keurig pods, beans, and instant coffee, as well as the method of delivery with Keurig vs. the De'Longhi, an expensive barista-inspired espresso machine.

Jennifer Willis

Chemistry

Flavor Composition and Elemental Analysis of Peppermints in Hydroponics and Planetary Stimulants

Co-Author(s): Megan Brown

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #12

This research aims to investigate the volatile compounds and mineral content of peppermint cultivated in soils from lunar, Martian, Earth, and hydroponic environments. Volatile compounds, responsible for the distinctive aroma and flavor profiles of peppermint, were analyzed using Solid Phase Microextraction Gas Chromatography-Mass Spectrometry (SPME GC-MS). Volatiles were captured using a solid-phase microextraction fiber and then identified and quantified using gas chromatography coupled with mass spectrometry. The SPME GC-MS methodology provides a sensitive and precise tool for characterizing peppermint fragrance and flavor characteristics. The mineral composition was determined using Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES). This method used a high-temperature plasma source to atomize and excite the samples, followed by optical emission spectroscopy to quantify the emitted wavelengths. The study seeks to provide essential insights into the potential impact of extraterrestrial soils and hydroponic systems on the sensory attributes and nutritional quality of peppermint, because of its aromatic properties, quick growth, and ease of transport.

Jennifer Willis

Chemistry

Mineral and Volatile Content in Green Onions Grown in Hydroponics, Earth, Lunar, and Martian Soils via ICP-OES and SPME-GCMS

Co-Author(s): Megan Brown

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #13

Throughout an 8-week kinetic study, this research examines the volatile compounds and mineral content of green onions grown in Lunar, Martian, & Earth soils and hydroponic solution. Solid Phase Microextraction Gas Chromatography-Mass Spectrometry (SPME GC-MS) was used to analyze volatile compounds

responsible for green onions' distinct smell and flavor profiles. A solid-phase microextraction silica fiber was used to capture volatiles, followed by gas chromatography coupled with mass spectrometry to identify and quantify these compounds. Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) was used to determine mineral composition in parallel. This method atomizes and excites the samples with a high-temperature plasma source, followed by optical emission spectroscopy to quantify the emitted wavelengths. This study aims to provide critical insights into the potential impact of extraterrestrial soils on crop sensory attributes and nutritional quality, which will have significant implications for future space agriculture and sustainable food production on celestial bodies. It will contribute to the creation of long-term food production systems for future lunar and Martian colonies, in addition to showcasing the adaptability of plants in non-native conditions.

Charlie Womack

Chemistry

Cutting Edge Instrumentation: CDS 6000 Series Pyroprobe

Faculty Mentor(s): Karen Barnes

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #12

Gas Chromatography Mass Spectrometry, or GCMS, is an instrumentation method that has proven its value in the history of chemistry. A GCMS requires a volatile sample to be dissolved in a volatile solvent; in the case of polymer chemistry, this is not always an option. In the case that a polymer has a high degree of polymerization, it might be insoluble, rendering it impossible to qualify via GCMS until the invention of the CDS 6000 Series Pyroprobe. This is a state of the art, solid injection GCMS. This easy to load instrument included with an autosampler, allows for a solid compound to be tested using GCMS. The sample is fed into a DISC tube, requiring no quartz wool, and delivered into a precision bore platinum coil, with sample temperatures having less than a tenth of a degree for accuracy. This coil is heated through induction to reach temperatures up to 1300 °C. The gas sample now passes into the mass spec, which included an analytical focus trap, and extra storage for modular modification. The instrument also comes with access to a library containing many polymer samples, to help identify mass fragments in a sample. With easy loading, and high reproducibility, the CDS 6000 Series Pyroprobe is another tool in the toolbox for any chemist.

Charlie Womack

Chemistry

Environmentally Benign Bromocyclization Reaction for Pharmaceutical Use

Co-Author(s): Zach Patane, Maria Jose Pena Bu

Faculty Mentor(s): Tanay Kesharwani

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #16

Benzothiofenenes are important heteroaromatic compounds that contain an aromatic five membered sulfur containing ring, a thiophene, fused to a benzene. The molecules show explorable capabilities in the photophysical and biological world. This core structure is an important class of compound to be used in the

pharmaceutical and materials industry. Current methodologies to bromo-cyclize these compounds, in order to add a leaving group for synthesis, involve harsh reaction conditions, including high temperatures and dangerous reagents, such as elemental bromine, a toxic, DNA alkylating agent. We proposed an alternative method to cyclizing these compounds using a safer salt alternative, bromodimethylsulfonium bromide. This reagent has proved to work in one hour, at room temperature, and reacts to completion, only requiring a short column for purification. Our lab has developed an optimized synthesis for the bromo-cyclization of these products using 2-phenylalkynyl thioanisole, and we have cyclized and purified 12 reaction via column chromatography. Several different alkynes bearing various functional groups were cyclized. These functional groups ranged from 1 o , 2 o and 3 o alkyl, vinyl, aryl and heteroaryl groups. The cyclized products were then fully characterized using 1 H and 13 C NMR techniques along with the HRMS and IR.

Kilea Yetter

Chemistry

Direct Measurement of Speed of Sound Gases at Various Pressures and Temperatures

Co-Author(s): Joey C. Peterson, Mikayla Swatscheno, Caden Solis

Faculty Mentor(s): Karen Molek

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #19

Speed of sound is an important phenomenon that varies based on the gas composition, the temperatures the sound wave propagates through, and the amount of humidity present in the gas it is traveling through. Experiments to measure the speed of sound are done in a time-of-flight vacuum chamber equipped with a vacuum pump to hold its interior at a constant pressure, two microphones (one at each end), a temperature sensor, and sample holder. Additionally, there is an ignition switch where combustible material within the vacuum chamber may safely be detonated via high resistance wire once the vacuum has sealed at experimental temperature and pressure. This instrument has been undergoing repairs to continue experiments based on previous iterations. The ignition circuit for sample ignition, vacuum pump, and instrument reconfiguration have taken place. Nitrocellulose will be detonated and used as a sound wave within the vacuum chamber. The temperature and pressure conditions of the vacuum chamber will vary and the speed of sound will be analyzed. Experimental plans include analyzing the speed of sound under N₂, CO₂, and argon gas at different temperatures. Results will be analyzed by comparing the time between the two microphone sound waves based on the change in distance and their respective standard deviations. And also the heat capacity ratio which depends on the experimental speed of sound will be determined. Calculated values will be compared to known literature values.



DEPARTMENT OF COMPUTER SCIENCE

Gabriel Broom

Computer Science

A Radial Basis Function Neural Network for Classification in Smart Grids

Faculty Mentor(s): Caroline John

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #11

Introducing technology into systems inevitably amplifies the susceptibility to malicious attacks and security breaches, a concern notably pertinent in the context of Smart Grid (SG) systems. Through integrating Internet of Things and intelligent devices into the conventional electrical grid, SG systems enhance efficiency but introduce security risks, including potential financial losses, power disruptions, data tampering, cascading failures, and erosion of trust. Mitigating these risks and promptly discerning potential attacks rank high on the priority list. To address this, we propose the implementation of a Self-Organizing Map (SOM) for data clustering and dimensionality reduction, utilizing its innate capacity for unsupervised learning, adaptive feature extraction, and topology preservation. Subsequently, the output of the SOM serves as input to a Radial Basis Function Neural Network (RBFNN), responsible for classifying data clusters into distinct attack types. The SOM-RBFNN algorithm will be applied to real-time power grid data obtained from the Mississippi State University and Oak Ridge National Laboratory. These datasets are grouped into 3 sets: Multi class, Triple class, and Binary, where the distinction is in how an event is classified.

Pórunn Cameron

Computer Science

A Case Study of AP Computer Science Principles: A Student's Perspective

Co-Author(s): Tony Pham

Faculty Mentor(s): Sikha Bagui

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 2:00-3:00; Location: Conf Room AB

Presentation Time: 2:00-3:00; Poster #11

With the increased demand for computer science degrees in the work force, computer science is becoming more prominent in the high school. Advanced Placement: Computer Science Principles (AP CSP) is one course that serves as a bridge into computer science. Code.org provides a year long curriculum for this AP course to be led by teachers in the classroom. With the recency of the course, a reflection on the curriculum from the student's perspective is in order beyond the simple pass rates of students. This study breaks down the strengths and weaknesses of the course generally and personally for two students who took the course and exam in high school. Results show there are many strengths compared to weaknesses in relation to the Code.org curriculum; however, the course fails to teach and engage students if not executed properly by a teacher.

Stephen Chomos

Computer Science

The benefits of the military for Cyber Students and Professionals

Faculty Mentor(s): Dustin Mink

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #27

Throughout my time at the University of West Florida, I have been a member of the Army Reserve Officer Training Corps. Before I came to UWF, I joined and am currently a drilling member of the Florida Army National Guard. I have gained valuable insight into the world of the military. believe that more cyber students should investigate the career advantages the military gives them. The first benefit that can help students moving into the field of cyber security is the security clearances that are granted. While most of the time on retail businesses will not require a security clearance, working for manufacturing roles, public administration and in the defense, sector will require a security clearance. With a security clearance already obtained, this makes the onboarding and hiring process with a company run smoother. Another benefit that students can obtain from working through the military is crisis management skills. Throughout basic combat training and cadet summer training, the instructors create a sense of artificial crisis to ensure that the soldiers and future officers can operate and preform during extremely stressful situations. These skills that you learn to help you perform at your max during high stress situations are very useful during cybersecurity operations. Being able to think on your feet during a high intensity moment can help with coordination of response efforts and contingency plans to help mitigate the impacts of the cyberattacks. There is multiple more benefits to joining the military to help advance and join the cybersecurity career field, including learning teamwork and collaboration with others, learning, and becoming great leaders, and the sense of mission alignment the military instills in its soldiers. Through training in the military and ROTC, I believe that it gives students the tools to become better cyber professionals.

DEPARTMENT OF CYBERSECURITY & INFORMATION TECHNOLOGY



Cam Ball

Cybersecurity and Information Technology

Machine Learning Model for Allergy Diagnosis

Faculty Mentor(s): Lakshmi Prayaga

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #18

Diagnosing allergies can be a complex process, often requiring multiple consultations and tests. This study proposes a machine learning model that leverages the power of data analysis to predict allergies based on reported symptoms and vice versa. Additionally, the model incorporates a pre-existing, hardcoded filtration system to refine its output. Current allergy diagnosis methods heavily rely on physician expertise and often lack objectivity. Existing research

demonstrates the potential of machine learning in allergy prediction (Artificial intelligence versus clinicians: systematic review of design, reporting standards, and claims of deep learning studies, A Framework for Augmented Intelligence in Allergy and Immunology Practice and Research-A Work Group Report of the AAAAI Health Informatics, Technology, and Education Committee). However, these studies do not consider the role of pre-existing filtering mechanisms. This research aims to develop a machine learning model for allergy prediction that integrates a hardcoded filtration system. The hardcoded filter will address potential biases or outliers within the data, improving the model's accuracy. The proposed model will utilize machine learning algorithms trained on a comprehensive dataset of allergies and their associated symptoms. This dataset will be carefully filtered using the pre-existing hardcoded system to ensure data quality. The model will then be evaluated based on its ability to predict allergies from symptoms and vice versa. The accuracy of these predictions will be a crucial metric for model assessment. This study anticipates the development of a machine learning model with improved accuracy in allergy prediction due to the incorporation of a hardcoded filtration system. This model has the potential to streamline the diagnostic process and offer valuable insights to healthcare professionals. While the model offers promise, limitations exist. The accuracy of the model is highly dependent on the quality and completeness of the training data. Additionally, the model cannot replace the expertise of a physician and should be used as a supplementary tool. Future research will explore the integration of additional data sources, such as patient demographics and medical history, to further enhance the model's predictive power. Additionally, research will be conducted to ensure the generalizability of the model across diverse populations.

Aiden Black **Cybersecurity and Information Technology**
Towards the Generation of Learning Objects with Generative Artificial Intelligence
Faculty Mentor(s): Guillermo Francia
Lead Author Classification: UWF Undergraduate Student
Session: Main Poster Session
Session Time: 12:00-1:00; **Location:** Conf Room AB
Presentation Time: 12:00-1:00; **Poster #12**

This presentation describes an on-going research on the use of generative artificial intelligence (GAI) in generating learning objects. Learning objects are digital or non-digital artifacts, which can be used, re-used or referenced to augment or enhance the learning process. Examples of these presentation slides, images, text, surveys, quizzes, and hands-on exercises. The unprecedented availability and capability of GAI tools in recent years brings us to consider how their technical capacities and abilities can bring about effective and useful learning objects. We first explore the published literature to survey the work that has been in the field of applied GAI to generate learning objects. Next, we provide a review of their technical features and closely look at the distinctive features of the tools used in various GAI models. The focus of this research is to develop a method of utilizing freely available GAI tools to expedite the generation of learning objects and to evaluate their effectiveness. Specifically, we seek to optimize the utilization of these AI-generated learning objects for active-learning applications and learning best practices.

Austin Killough **Cybersecurity and Information Technology**
The Cybersecurity Attack Surface for Supply Chains with the Internet of Things: Comparative Analytical Frameworks
Faculty Mentor(s): Stephen LeMay
Lead Author Classification: UWF Undergraduate Student
Session: Virtual Presentation
Location: Gather Town
Poster #11
 This paper examines the cyberattack surface introduced by integrating Internet of Things (IoT) devices into supply chain operations. The literature review explores cyberattack techniques, supply chain vulnerabilities, and IoT security threats cited in academic sources. Analysis of the expanded cyberattack surface explains how IoT creates new attack vectors. Identification of IoT-related vulnerabilities draws on case studies of real cyberattacks. Discussion of potential impacts covers operational disruptions, financial costs, legal/regulatory consequences. Proposed mitigation strategies encompass secure IoT design, access controls, encryption, monitoring, risk management, and incident response planning. Case studies offer in-depth analyses of cyberattacks on IoT supply chains. Future challenges include emerging threats, and further research needs as IoT adoption increases. The analysis evaluates three proposed frameworks for continued monitoring of IoT in supply chains. The conclusion summarizes insights and emphasizes addressing the cyberattack surface as vital to supply chain security. This research contributes to the field of supply chain cybersecurity by proposing the exploration of new frameworks for the analysis of IoT-laden supply chains.

Gopi Shankar Mallu **Cybersecurity and Information Technology**
Real-time Exercise Monitoring with MediaPipe
Co-Author(s): Dr. Chandra Prayaga, Dr. Aaron Wade, Kyle Rank, Harsha Pola
Faculty Mentor(s): Lakshmi Prayaga
Lead Author Classification: UWF Graduate Student
Session: Main Oral Presenters
Session Time: 10:45-12:15; **Location:** Olympia (rm 272)
Presentation Time: 11:45AM

In today's tech-driven world, where connectivity shapes our daily lives, maintaining physical and emotional health is crucial. Athletic trainers play a vital role in optimizing athletes' performance and preventing injuries. However, a shortage of trainers impacts the quality of care. This study introduces a vision-based exercise monitoring system leveraging Google's MediaPipe library for precise tracking of bicep curl exercises and simultaneous posture monitoring. We propose a three-stage methodology: landmark detection, side detection, and angle computation. Our system calculates angles at the elbow, wrist, neck, and torso to assess exercise form. Experimental results demonstrate the system's effectiveness in distinguishing between good and partial repetitions and evaluating body posture during exercises, providing real-time feedback for precise fitness monitoring.



DEPARTMENT OF EARTH & ENVIRONMENTAL SCIENCE

Emily Harris

Earth & Environmental Science

Student's Exploration of Air Quality Trends: A Course-Based Undergraduate Research Experience (CURE) in UWF's Introduction to Earth Science Face-to-Face Section

Student Participants: See below

Faculty Mentor(s): Emily Harris

Session: Main Poster Session

Session Time: 2:00-3:00; Location: Conf Room AB

ESC 2000, an Introduction to Earth Science course (a gen-ed course composed mainly of non-majors), comprehensively explores Earth's physical environment, investigating foundational concepts and ongoing processes that shape the planet and affect its inhabitants. Through an interdisciplinary lens, students analyze the intricate relationships among the lithosphere, hydrosphere, atmosphere, and biosphere, explaining the interconnectedness of Earth's systems, including human interactions with the physical Earth system. As a HIP Designated Course, ESC 2000 emphasizes high-impact teaching practices to foster deep learning and student engagement. Students engage in collaborative, team-based projects to enhance their learning experiences through a Course-Based Undergraduate Research Experience (CURE) project. This project includes both independent exercises and group assignments, focusing on a joint research project concerning air quality. For the spring 2024 term, ten groups of students from the in-person ESC 2000 course undertook research topics based on standard objectives: identifying air quality data and trends at specific locations and evaluating potential contributing factors to these trends. To achieve these objectives, students collaborated within their small groups to develop research questions and proposed methodologies, conduct thorough literature reviews, execute their proposed methodologies, discuss expected results and benefits, and present their findings in a public presentation at the UWF Symposium. The CURE project is a central component of ESC 2000, designed to cultivate students' abilities to think and act like scientists. Through their participation, students sharpen analytical skills, enhance communication abilities, and contribute to the collective understanding of Earth's physical environment.

Individual posters and authors included in these course presentations are:

Bryton Barnett, Paris Bennett, Quinn Fogarty, and Emma Owens
Emissions of Regional Versus International Airports and the Effects on the Surrounding Areas

Session: Main Poster Session

Location: Conf Room AB; Presentation Time: 2:00-3:00; Poster #16

Christopher Blazer and Gabrielle Larkin

How an Arid Climate's Air Quality Can Affect Public Health Comparatively to a Humid Climate's Air Quality

Session: Main Poster Session

Location: Conf Room AB; Presentation Time: 2:00-3:00; Poster #24

Lily-ana Campbell and Rebecca Paczkowski

CO2 Emissions Across the United States

Session: Main Poster Session

Location: Conf Room AB; Presentation Time: 2:00-3:00; Poster #15

Keegan Emanuel, Devon Jackson, Jackson Meyers, and Allen Sieni
Comparative Efficacy of CO2 Absorption from the Atmosphere between Wetlands and Forest Environments in Florida

Session: Main Poster Session

Location: Conf Room AB; Presentation Time: 2:00-3:00; Poster #17

Caytriana Fontana, Hana McMullen-Kadi, and Leilani Smith

How Disposing Bodies in Mass Quantities Through Incineration Impacts Local Air Quality

Session: Main Poster Session

Location: Conf Room AB; Presentation Time: 2:00-3:00; Poster #23

Ashley Freeman, Isabella Karaskova, and Brooklyn Muncy

Air Quality Before, During, and After the Camp Fire of 2018 in California

Session: Main Poster Session

Location: Conf Room AB; Presentation Time: 2:00-3:00; Poster #22

Allison French, Sophie Homandberg, and Mallory Parker

Comparing the Levels of Ozone in Sacramento, CA, and Pensacola, FL

Session: Main Poster Session

Location: Conf Room AB; Presentation Time: 2:00-3:00; Poster #21

Alyssa Hearn and Jack Morcate

East Coast Giants: West Virginia and Texas, the Largest Pollutants in the East

Session: Main Poster Session

Location: Conf Room AB; Presentation Time: 2:00-3:00; Poster #20

Payton Hoskins, Elizabeth Root, and Andre Santos

Where You Are is What You Breathe: The Comparison of Urban and Rural Air Quality in Wisconsin

Session: Main Poster Session

Location: Conf Room AB; Presentation Time: 2:00-3:00; Poster #18

Shurzong Lo and Lilly Young

Air Quality Differences Between North and South Florida

Session: Main Poster Session

Location: Conf Room AB; Presentation Time: 2:00-3:00; Poster #19

Emily Harris

Earth & Environmental Science

Student's Exploration of Air Quality Trends through a Course-Based Undergraduate Research Experience (CURE) in an Online Introduction to Earth Science Course at UWF

Student Participants: See below

Faculty Mentor(s): Emily Harris

Session: Virtual Presentation

Location: Gather Town

ESC 2000, an Introduction to Earth Science course, offers a comprehensive exploration of Earth's physical environment comprised mostly of non-major students. Delving into foundational concepts and ongoing processes shaping our planet, the course adopts an interdisciplinary approach. Through the lenses of lithosphere, hydrosphere, atmosphere, and biosphere, students investigate the interconnectedness of Earth's systems, including human impacts. As a HIP Designated Course, ESC 2000 employs high-impact teaching practices, emphasizing deep learning and engagement. A highlight of the course is the Course-Based Undergraduate Research Experience (CURE) project, where students undertake collaborative research on air quality trends. In the spring 2024 term, 27 groups from the online ESC 2000 course conducted research focusing on air quality data analysis and evaluation of contributing factors. Guided by standard objectives, students formulated research questions, conducted literature reviews, and developed proposed methodologies to address their devised objectives. Each group presented their findings through a one-slide summary in a virtual session at the UWF Symposium and submitted a final written literature review and project proposal. The CURE project is a cornerstone of ESC 2000, fostering students' scientific thinking and action. By participating, students refine their analytical skills, strengthen their communication skills, and contribute to advancing our understanding of Earth's physical environment.

Individual posters and authors included in these course presentations are:

Thadd Atchison, James Cobern, Judson Cook, and Isabella Killian

Improving Air Quality in the United States

Session: Virtual Presentation

Location: Gather Town; Poster #37

Joseph Bilski, Jack Kruse, and Matthew Pooler

The Effect Air Quality Has On Our Health

Session: Virtual Presentation

Location: Gather Town; Poster #44

Cole Blanchard, Kaden King, Chase Lombardo, and Jared Smith

The Impact of Air Pollution on Urban Areas

Session: Virtual Presentation

Location: Gather Town; Poster #54

Parker Boss, Ashli Glover, and Jessica Luu

How the Ozone Layer Affects the Biosphere

Session: Virtual Presentation

Location: Gather Town; Poster #35

Grace Bouchard, Colin Doyle, Ebony James, and Alia Scotka

The Effects of Wildfires on the West Coast Region's Air Quality

Session: Virtual Presentation

Location: Gather Town; Poster #36

Kyla Brichetto, Isabella Claussen, Hannah Ellis, and Melissa Harris
Investigating the Negative Health Effects of Air Pollution on Asthma

Session: Virtual Presentation

Location: Gather Town; Poster #31

Brady Carroll, Christina Graves, Jay Henderson, and Rachel Steiner
What health effects does air quality have?

Session: Virtual Presentation

Location: Gather Town; Poster #46

Robert Cavazos, Daniel Cook, Jady Dykes, and Immanuel Taylor
Florida Coastal vs Mainland City Air Quality

Session: Virtual Presentation

Location: Gather Town; Poster #38

Braden Coker, Gabe Fiedler, Ivan Kidder, and Jonathan Nowling
How Weather Patterns Affect Air Quality

Session: Virtual Presentation

Location: Gather Town; Poster #52

Matthew Decker, Ethan Green, Eduardo Jurado, and Jacob May
East vs West, What's the Difference in Terms of Air Quality?

Session: Virtual Presentation

Location: Gather Town; Poster #41

Alejandro Dieguez and Tanner Webb

How Renewable Energy Impacts Carbon Footprint in Relation to Renewable Energy

Session: Virtual Presentation

Location: Gather Town; Poster #34

Jordyn Gerow and Devon Hodgdon

How does Natural Disasters Affect Air Pollution?

Session: Virtual Presentation

Location: Gather Town; Poster #49

Eli Gratz, Chris Roberson, Alexis Schefers, and Lizzie Syverson

Passenger Vehicle Electrification: Are We Hitting the Right Target?

Session: Virtual Presentation

Location: Gather Town; Poster #39

Danielle Grizzle, Lydia Vazquez, and Heather Velez

Urban (cities) versus Rural (small towns) air quality in New York

Session: Virtual Presentation

Location: Gather Town; Poster #45

John-Michael Guidroz, Marcus Martins Camperlingo Pereira, and Darrius Talbert

Assessing the Impact of Air Pollution on Life Expectancy

Session: Virtual Presentation

Location: Gather Town; Poster #53

Jordyn Harrynarine, Savannah Hathaway, Kacey Larsen, and Leigh Mann
Investigating the Effects of Air Pollution on the Neurological System
 Session: Virtual Presentation
 Location: Gather Town; Poster #33

Steven Irwin and Cory Noble
Analyzing the impact of Air Purification
 Session: Virtual Presentation
 Location: Gather Town; Poster #50

Jesse Kine and Kelsie Lucas, Bodin Rasbeck, and Alexandria Williams
What is Air Quality and Why Should we Care?
 Session: Virtual Presentation
 Location: Gather Town
 Poster #47

Guadalupe Martinez, Gabby McDonald, and Chigozie Okeke
Environmental Impacts of Air Pollution
 Session: Virtual Presentation
 Location: Gather Town; Poster #42

Kaiden Maxwell, Aliana Murry, Lana Parungao, and Selena Vallo
Analysis of Air Quality and How It Affects Children's Health Regarding the Physical and Mental Well-Being
 Session: Virtual Presentation
 Location: Gather Town; Poster #32

Amelia Myers, Elizabeth Nimblett, Sydney Swanner, and Mishael Vann
How does air pollution affect our health?
 Session: Virtual Presentation
 Location: Gather Town; Poster #43

Rene Perez, Will Rabon, Hannah Smith, and Isabella Yu Lee Barberan
Impacts of Long-Term Air Pollutants on Urban Populations
 Session: Virtual Presentation
 Location: Gather Town; Poster #51

Trinity Ragnes and Allie Whisman
What Major Sources Are Contributing to the Pollution in Our Air?
 Session: Virtual Presentation
 Location: Gather Town; Poster #48

Cynthia Pajuelo, Keanu Pho, Marcus Stokes and Anna Whetzel
How COVID-19 has affected the ecosystem during and after the pandemic?
 Session: Virtual Presentation
 Location: Gather Town; Poster #40

Chris Bickham Earth & Environmental Sciences
Moving at the Speed of Trust: An Analysis of the Second Port St Joe Transformative Scenario Planning Workshop
 Co-Author(s): Nelson Kowu, Josiah Tawiah, Bright Nyameasem

● **Faculty Mentor(s): Kwame Daaku**
 ● **Lead Author Classification: UWF Undergraduate Student**
 ● **Session: Virtual Presentation**
 ● **Location: Gather Town**
 ● **Poster #2**
 ● The historically black community and once prosperous neighborhood of North Port St. Joe located within the city of Port St. Joe has been cast on a downward trajectory by decades of structural racism and inaction by local officials. To this day, local officials show disinterest in the revitalization of North Port St. Joe, while resources are focused on the development of the rest of the city south of North Port St. Joe. To this end, researchers of Team North Port St. Joe of the 7th Cohort of the Interdisciplinary Research Leaders program, organized the second in a series of transformative scenarios workshops to convene stakeholders of Port St. Joe to address this impasse. This presentation outlines the proceedings and outcomes of this workshop, highlighting the challenges the community is facing yet also identifies opportunities for change. For example, citizens have compiled information on the inequities and discrimination they face, bringing forward plans for positive change. Yet, this effort seems to fall on the deaf ears of the local government. This situation presents the following tension; "how can we cause the changing of these currents necessary for transformation when we can only move at the speed of trust?" Being able to address this tension will ensure transformative change for all of Port St. Joe.

● **Joshua Bostwick** **Earth & Environmental Sciences**
 ● ***Ideas for Future Recreational Activities on the UWF Trails***
 ● **Co-Author(s): Jake Phillips, Brandon Tims**
 ● **Faculty Mentor(s): Chasidy Hobbs**
 ● **Lead Author Classification: UWF Undergraduate Student**
 ● **Session: Main Poster Session**
 ● **Session Time: 2:00-3:00; Location: Conf Room AB**
 ● **Presentation Time: 2:00-3:00; Poster #12**
 ● Our group has thought of multiple different recreational activities that could be done on the UWF trails to bring more awareness of nature to the community. A monthly nature tour guided by park rangers from local national parks would be a great way to bring experts and community together. Forest cleanups would help students fulfill volunteer hours and let them experience the outdoors. Benches and tables built by local boy and girl scouts would both let the scouts earn badges and give trail users places to rest in the forest and enjoy the scenery. Creating a geocaching course in the forest would let others explore new areas of the forest while completing a challenge. Making a pamphlet with all the different native plant and animal species of the forest would enable individuals to explore the forest at their own leisure through wildlife observation. These are the main activities that our group has thought of that would let a broader scope of people enjoy the UWF trails. Another area of UWF that has potential for future recreational use is the beach property. Swimming and snorkeling are the two most prominent activities that our group has thought of for this area. Another possible event that could take place at the beach would be lifeguard training. The advantage of training at an actual beach would allow the trainees to experience what real lifeguard situations are often like. These are the three main activities that our group has thought of for the beach property.

Vio Collum**Earth & Environmental Sciences*****Participatory Mapping Methods for Assessing Campus Perceptions of Greenspace*****Co-Author(s): Madeline Packwood****Faculty Mentor(s): John Morgan****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 9:00-10:00; Location: Conf Room AB****Presentation Time: 9:00-10:00; Poster #17**

Participatory mapping as a study method allows for the integration of social science into GIS and geographic science. Our goal was to use participatory mapping through the construction of an online, map-based survey used to assess student perceptions of university green spaces. This survey is designed to gauge the impact and influence of natural spaces and weather on student's interactions with the campus through a mixture of typical survey elements such as single choice, multiple choice, and likert scales, and map-based questions involving point selection and path tracing. The survey is built in the Esri ArcGIS Survey123 web platform and distributed to students through online communications including e-mail, and in-person means such as QR-code flyers. Data will be processed and analyzed manually and through ArcGIS applications. Validation may be conducted for map-based answers via GPS-tethered mobile devices and photography. We hypothesize that students with a higher positive affinity for natural environmental aspects will tend to choose longer typical walking paths that favor natural space exposure over maximum travel efficiency. The results are intended to bridge a gap between preexisting research and inventory of the natural spaces of the UWF campus, and the mental health and social decision-making of residing and commuting students.

Lucia Dillersberger**Earth & Environmental Sciences*****Accuracy of different GPS data collection methods for drone-based dune research*****Faculty Mentor(s): Phillip Schmutz****Lead Author Classification: UWF Undergraduate Student****Session: Main Poster Session****Session Time: 9:00-10:00; Location: Conf Room AB****Presentation Time: 9:00-10:00; Poster #16**

This project focuses on different GPS methods to conduct drone mapping in a coastal dune setting. Traditional drone mapping, which uses real-time kinematic (RTK) GPS to establish highly precise latitude, longitude, and elevation data for multiple ground control points can be a time-consuming process in the field. Post-processing kinematic (PPK) GPS, on the other hand, could offer a quicker and more efficient method of collecting this positioning data. PPK uses a small unit attached to the drone to obtain accurate positioning data for every picture taken. Later, this information can be used to geotag each photo with its appropriate location. The question, however, is if PPK can provide the same level of accuracy compared to RTK. In this study, we utilized a DJI Phantom 4 Pro drone with an attached Tuffwing Snap PPK kit using an Emlid Reach M+ module to collect accurate location information for every image collected by the drone. This data was uploaded into Emlid Studio PPK software to geotag each photo. RTK GPS data from several ground control points were also collected for the same drone

flight. Data analysis is currently ongoing, yet plans are to compare the accuracy and precision between the PPK process to that of the traditional RTK method.

Nelson Kowu**Earth & Environmental Sciences*****"We want to see one St. Joe": Segregation, Industrial Pollution, and Environmental Injustice in Port St. Joe, Florida from 1935-2023*****Faculty Mentor(s): Kwame Owusu Daaku****Lead Author Classification: UWF Graduate Student****Session: Main Oral Presenters****Session Time: 9:30-11:00; Location: Auditorium****Presentation Time: 10:00AM**

As a community marked by its history of segregation, North Port St. Joe (NPSJ), the predominantly black community of Port St. Joe-FL, suffered from the adverse effects of a polluting paper mill-from 1935 when construction started to 1999 when the mill shut operations. The community has suffered worse outcomes such as frequent flooding, degrading lands, and the contamination of water, which have been further intensified by the impacts of Hurricane Michael in 2018 and the COVID-19 pandemic. Residents have in the past raised, and continue to raise, concerns of limited involvement in planning decision-making processes and systemic discrimination. This research employs racial capitalism as a framework to understand the socio-economic and racial dimensions that underpin environmental injustices and how these injustices have evolved over the period from 1935 to 2023 in North Port St. Joe and resulted in the vulnerability of the community to environmental risks. Using a narrative inquiry methodology, the research draws from an extensive analysis of oral histories, archival records, and document analysis. Our research demonstrates that NPSJ's early history of segregation, followed by industrial pollution and a social construct of race and class has imprinted an environmental justice disparity between NPSJ and the rest of Port St. Joe. Further, our research highlights the complex interplay between socio-economic factors, environmental injustice, and other forms of systemic oppression and can inform efforts to address contemporary environmental injustice in NPSJ and contribute to a broader understanding of the complex and interconnected factors that give rise to such injustice.

Kwame N. Owusu-Daaku**Earth & Environmental Sciences*****Research for a Planned Relocation Resource Repository***

Student Participants: Alexis Bjornstad, Jasmine Brown, Amber Eells, Clay Florentino De Assis, John Garrett, Nikki Gilmer, Tyler Griffith, Jordan Harrison, Bryce Jones, Desirie Joy Luayon, Mads Murray, Gracie Reis, Caden Retherford, Monica Sanchez, Max Schroth, Joel Sexson, Joshua Simmons, Harry Smith, Taylor Smith, Ella Spencer, Dane Urquhart, and Chase Walsh

Faculty Mentor(s): Kwame N. Owusu-Daaku**Session: Panel Discussion****Session Time: 9:00-10:15; Location: Zoom (<https://uwf.zoom.us/meeting/register/tZetf--qqj4rGt0IS4UQPXB50MYj90EcjFea>)**

As populations continue to grow and there is an increasing trend in urbanization and environmental degradation, a greater number of people will be exposed to disaster risks and natural hazards. This exposure will further be compounded by the effects of climate change that will increase the occurrence of natural hazards. Planned relocation, the process of moving or assisting people to move

away from their homes to new locations and provided with services to rebuild their livelihoods has been proposed as a climate risk and adaptation strategy. The Climate Academy - project of the United Nations University-Institute for Environment and Human Security and Munich Re Foundation - adopts a science-based participatory approach to address the challenges associated with climate change through a series of convenings or academies. Dr. Kwame Owusu-Daaku was a participant of the 2023 Climate Academy and is a member of the working group developing a planned relocation resource repository. Students enrolled in GEOG 4005/5007 Environmental Management and Planning Spring 2024 were tasked to assist curate foundational resources for the repository as part of the collaborative team project for the course. Students worked in five teams- Anticipation, Decision-making, Planning, Implementation and Follow-up, to find resources for the repository. In this session, students will present their findings and share their experiences working collaboratively. These resources will be utilized by the working group to develop a detailed repository that can be utilized by states, governments, non-profits and other organizations working on planned relocation in response to climate change.

Kwame N. Owusu-Daaku Earth & Environmental Sciences

Transformative Scenario Briefs of Health Equity for Port St. Joe, FL

Student Participants: Luke Badrak, Elora Bessemer, Cassie Cramer, Olivia Enkey, Joshua Farre, Matthew Fredriksson, John Garrett, Gavin Grant, Tyler Griffith, Jay Griffo, Taylor Hardy, Padam Prakash Jaishi, Nelson Kowu, Kacey Larsen, Roman Lorenz, Desirie Joy Luayon, Albertina Nolen, Kat Rullo, Harry Smith, Alex Strelkow, Josiah Tawiah, Bailey Thayer, and Chase Walsh

Session: Panel Discussion

Session Time: 1:00-2:15; **Location:** Zoom (<https://uwf.zoom.us/j/7292491146>)

Residential segregation and isolation have been shown to be associated with health risks and worst health outcomes for residents of these segregated communities. Disparities in the built environment, lower quality and access to education and healthcare, employment opportunities, socio-economic factors and exposure to environmental risks contribute to health disparities. North Port St. Joe (NPSJ), the largely African American community of Port St. Joe, FL, suffers worse health outcomes when compared with the rest of Port St. Joe. Team NPSJ of Cohort 7 of the Interdisciplinary Research Leaders (IRL) program has been working with community leaders to vision possible futures of health equity in Port St. Joe. From two workshops organized, participants have developed scenarios of health equity. Participants developed three scenarios of Living Waters, Murky Waters, and Cesspool based on seven themes of Community Context and Voices, Neighborhood and Built Environment, Transportation, Education Access and Quality, Economic Context and Trends, Healthcare Access and Quality, and Disease and Death. Students enrolled in EVR 4870/5435 Urban Planning were tasked with creating a concise one-page brief of the scenarios that have been developed by workshop participants. These briefs will be used as informative tools to disseminate the scenarios to residents and city officials. In this session, students will present their briefs to community leaders and other stakeholders working to address health disparities in Port St. Joe.

Isabella Orrantia Marmol Earth & Environmental Sciences
UWF Conservation Program in the area of Citizen Science
Co-Author(s): Dawn Johnson, Charley Cox
Faculty Mentor(s): Chasidy Hobbs
Lead Author Classification: UWF Undergraduate Student
Session: Main Poster Session
Session Time: 11:00-12:00; **Location:** Conf Room AB
Presentation Time: 11:00-12:00; **Poster #21**

The University of West Florida (UWF) sits on 1600 acres of natural land. The original campus plan emphasized preserving the university's natural landscape, the current 2020-2030 master plan will focus on the preservation of UWF West campus. During the Spring of 2023, the Community Engagement Through Environmental Sciences (CETES) students divided into groups to conceptualize how UWF can create a natural resource management and conservation plan for their forest. This project focused on increasing the use of UWFs West campus through Citizen Science. The UWF west campus landscape is composed of upland habitat, primarily a mix of Longleaf Pine (LLP)/hardwood and wetlands. With the help of natural resource management professionals along with the Forest Service of Florida Department of Agriculture and Consumer Services, plans to do prescribed burns within the west campus forest have been put in place. Public perception of prescribed fires is inherently negative. This can be overcome through informative education. The public is more likely to embrace controlled burns if they are well informed about the positive effects of prescribed fires. This project proposes to involve citizens in contributing to the collection of data through surveys which will provide an in-depth understanding of UWFs forest and how they may improve. Three main surveys have been proposed; Nature journal of invasive species, Wildlife surveys, and Soil Health surveys. This and the rest of the CETES programs provide resource foundations for continuing the preservation of UWFs west campus and natural areas.

Madeline Packwood Earth & Environmental Sciences

Participatory Mapping Methods for Assessing Campus Perceptions of Greenspace

Co-Author(s): Vio Collum
Faculty Mentor(s): John Morgan
Lead Author Classification: UWF Undergraduate Student
Session: Main Poster Session
Session Time: 11:00-12:00; **Location:** Conf Room AB
Presentation Time: 11:00-12:00; **Poster #22**

Participatory mapping is an exciting area of research where workflows are still evolving and supporting geospatial technologies are changing quickly. This project is to use a geographic information systems (GIS) based participatory mapping method to design, develop, and implement a survey based on the University of West Florida Campus to assess undergraduate student perceptions of campus ecosystem services. The proposed project will draw on participatory mapping methods well established by the pioneering work of the recently passed Professor Gregory G. Brown. Dr. Brown's work combined public participation geographic information systems, natural resource management, and spatial planning. We use a three part survey consisting of demographic-based questions, questions regarding natural spaces on campus, and map-

based questions which follow students' daily routes through the campus. Understanding both the routes and of undergraduate students through campus greenspaces and students' perceptions of greenspaces aids in understanding the effects of greenspaces on wellness, recreation, and walkability.

Elizabeth Parker **Earth & Environmental Sciences**

UWF Conservation Program: Community Education

Co-Author(s): Roman Lorenz

Faculty Mentor(s): Chasidy Hobbs

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #20

The nature and biking trails on the west side of University of West Florida's campus provide a unique and underutilized ecological resource to our community. These protected trails are a part of the larger Longleaf Pine Forest system and are home to a diverse number of species, including some federally listed as threatened or endangered. This trail system can also provide an educational, recreational, and mental health resource for students and faculty members on campus, as well as the surrounding community members. Using research and interviews with key community members and program directors, a plan was developed to compile a list of ideal programs to be implemented to improve the utilization of this trail system. Programs intended to be implemented will educate many different groups on the ecological importance of this particular ecosystem and how to manage and protect it. The individuals involved in these programs will develop a sense of community, ownership, loyalty, and belonging working together within this ecosystem. The trails current conditions constrained the community members that are able to be included in the plans, specifically through lack of accessibility. There are many programs in the community and others across the state and other universities that are already thriving in other forest systems. These plans are uniquely designed for UWF's campus trails. Developing these programs is important to add to the utilization and protection of this unique and powerful ecosystem that is a large part of the University of West Florida's campus and history.

Gabe Rojas-Rau **Earth & Environmental Sciences**

The Impacts of Course-Based Undergraduate Research Experiences on

Introduction to Earth Science Students

Faculty Mentor(s): Emily Harris

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #15

Course-based undergraduate research experiences (CUREs) have been the subject of multiple academic studies analyzing the impacts and benefits they provide students. General analysis of CUREs has inferred that participating students gain more content knowledge and improve their research skills, improve their confidence and interest in independent research, allow for more diversification within a joint setting, one-on-one interactions, and connections with faculty,

and help students learn more about their careers of interest. In this study, University of West Florida students of the Introduction to Earth Sciences courses were surveyed based on their CURE work and the impact the courses had on them. Upon the inquiry of the surveys, data trends were recorded containing quantitative and qualitative data such as the mastery of skills aligned with students' learning goals and how these impact the student's participation in the CURE curriculum compared to other CUREs at the undergraduate level. The CURE objectives proposed for the UWF CURE Fellows Program were also analyzed for their impacts on students and the designation metrics of the High-Impact Practice (HIP) award.

Josiah Tawiah **Earth & Environmental Sciences**

Eaten Away by Erosion: The Erasure of the Coloniality of the Kongenstein and

Prinzenstein Forts in the Volta River Delta of Ghana

Co-Author(s): Nelson Kowu

Faculty Mentor(s): Kwame Owusu Daaku

Lead Author Classification: UWF Graduate Student

Session: Main Oral Presenters

Session Time: 12:30-1:45; Location: Auditorium

Presentation Time: 12:30PM

Scholars have established coloniality as a concept that persists even after the formal end of colonial governments – often in the form of mindsets, values, and attitudes – not only within people but also within the built environment. The built environment more commonly expresses coloniality in the form of forts that memorialize the history of colonialism. For example, in Ghana –West Africa, this memorialization currently serves as an economic engine for the country through tourism to these sites. Climate change impacts such as sea level rise and coastal erosion however threaten the continual existence of these sites – as many of these sites are located along the Ghanaian coastline. The Volta River Delta coastline is facing erasure due to climate change, land subsidence, and sediment budget reduction from the government's construction of a hydroelectric dam in the 1950s. Danish forts, Fort Kongenstein and Fort Prinzenstein, are experiencing coastal erosion. However, both forts remain as tourist sites despite the threat of erasure from coastal erosion. The main objective of the study is to consider whether the Ghanaian government is taking any explicit actions to preserve these sites from further coastal erosion – even as the government is operating these sites as tourism destinations; and if the government is not explicitly protecting these sites from further coastal erosion – whether this failure coupled with generating revenue from these sites is expressive of coloniality in extracting revenue from a source but failing to protect the sustainability of that source.

Domani Turner-Ward **Earth & Environmental Sciences**

Developing a Conservation Program Plan for the University of West Florida

Faculty Mentor(s): Chasidy Hobbs

Lead Author Classification: UWF Undergraduate Student

Session: Main Oral Presenters

Session Time: 12:15-1:15; Location: Great Hall

Presentation Time: 1:00PM

The University of West Florida Campus Master Plan 2021-2031 designates over one

thousand acres of undeveloped natural landscape for long-term conservation and sets forth a policy to “establish an environmental stewardship program for the University to follow.” This land is part of the UWF Main Campus in Pensacola, Florida, and home to valuable longleaf pine habitat, a Great Florida Birding Trail, and the largest vascular plant flora of any southeastern university campus. Ongoing activities in these natural areas include academic research, course-related field learning, interdisciplinary events, and recreation. To effectively implement conservation on the UWF Main Campus, it is vital to devise a conservation plan that specifies program goals, management, values, strategies, and projects. This research project addressed the above need by developing a proposed UWF Conservation Program Plan. Diverse research methods were followed to inform the Plan and included reviewing literature, investigating other successful conservation programs, assessing the UWF community’s current relationship with its natural spaces, and consulting experts across multiple relevant disciplines. Major program goals, values, strategies, and projects drew from a synthesis of the Campus Master Plan, best practice found in research, and assessed community needs. The culminating proposal was a written document that considered possibilities such as establishing a formal entity tasked with Program management, development of specific conservation projects, strategies for maintaining community investment, and collaboration with other entities and agencies.

Domani Turner-Ward **Earth & Environmental Sciences**

Proposing the Argos Conservation Corps Collective

Co-Author(s): Josephine Bosworth-Canner, Tamari Wigington

Faculty Mentor(s): Chasidy Hobbs

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 2:00-3:00; Location: Conf Room AB

Presentation Time: 2:00-3:00; Poster #13

The University of West Florida recently committed to a focus on conservation through its 2020-2030 Campus Master Plan. Students in the Environmental Science capstone course Community Engagement Through Environmental Science (CETES) worked as teams on several different aspects of a proposed conservation program for UWF. Presented in this project is a proposal for a conservation-focused program that encourages interdisciplinary involvement and that would be called the Argos Conservation Corps Collective (AC3), with the motto Protect, Manage, Educate. This project specifically responds to the Campus Master Plan Section 3.3: Future Land Use, Policy 2.1.3: “Establish an environmental stewardship program for the University to follow.” Such a program would promote the health and longevity of the UWF West Campus trails and natural areas, facilitate interdisciplinary research, and enhance communication among concerned parties within the UWF community and beyond. This program proposal was developed through discussions with staff, faculty, students, associations, and regional conservation professionals. When ultimately combined with the research completed by the other CETES teams, the final product of this work forms the foundation of a holistic conservation program proposal for the University of West Florida.

Noah White **Earth & Environmental Sciences**
Determination of Heavy Metal Concentrations in Plants on Possibly Polluted Soil Along Mobile and Tensaw Rivers– AL
Faculty Mentor(s): Johan Liebens
Lead Author Classification: UWF Undergraduate Student
Session: Main Poster Session
Session Time: 2:00-3:00; Location: Conf Room AB
Presentation Time: 2:00-3:00; Poster #14
 Heavy metals, such as lead (Pb), cadmium (Cd), and arsenic (As), are environmental contaminants of concern due to their potential risk to plant and animal biodiversity as well as human health. Once emitted, these metals can spread through the environment and accumulate in the atmosphere, water bodies, and soils of our planet where they are introduced into the food chain. While many of these heavy metals exist naturally in the environment they can become a concern if their concentration increases well beyond normal, pre industrial levels. Understanding the presence of heavy metals in both soil and plants is crucial for assessing ecological impacts. Plants, being primary producers and the basis of the food chain and soils, their medium of growth both play a crucial role in locking away, filtering, or distributing these heavy metals into the ecosystem. The focus area of this study is the Mobile River, Tensaw River and surrounding wetlands. This location was chosen because of its proximity to the heightened industrial activity and possible pollution near Mobile, AL. This study aims to determine heavy metal concentrations in plant samples using Inductively Coupled Plasma Optical Emission Spectroscopy, with a specific focus on sample preparation, acid digestion, data analysis, and a comparison to another study being undertaken on the heavy metal contamination in soils at the same sampling sites. This comparative analysis aims to assess the relationship between metal contaminants in plants and the concentration of heavy metals in the soil around them to then gain an understanding of the bioavailability of these metals and their probability of entering the ecosystem.

Leo Young **Earth & Environmental Sciences**

The University of West Florida Campus Ecosystem Study: Light Availability, Soil Texture, and Soil Seedbanks in Hardwood– versus Pine-Dominated Forests

Co-Author(s): Alayna Currey, Brenton Davis, Caden Perry

Faculty Mentor(s): Frank Gilliam

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #14

The University of West Florida was constructed in second-growth longleaf pine stands that recovered from past logging. The Ball Nature Trails area contains two stand types: (1) longleaf pine stands that have been under chronic fire suppression, and (2) hardwood-dominated stands, comprising primarily southern magnolia and oaks that occupy soils of higher moisture. We addressed three questions: (1) how does light availability vary with overstory composition of the forest communities? (2) how does soil texture vary with overstory composition of the forest communities? (3) how does the soil seed bank vary with overstory composition of the forest communities? This work is a continuation of the UWF Campus Ecosystem Study (Gilliam et al. 2021)

and utilized its sampling methodology by selecting 12 randomly located plots within each of the pine and hardwood communities. Light availability was measured with a Phantom PHOTOBIO® advanced quantum PAR meter (PAR is photosynthetically active radiation) at five locations in each plot. Five soil samples were collected per plot and composited to a single sample for a total of 24 samples. These were analyzed here at UWF for soil texture. In addition, soil was added to growth pots, placed in the UWF Greenhouse, and watered daily to test for germination of the soil seed bank. This study has been updated to include more conclusive results, as well as a look into the research that will be performed in SURP 2024.



DR. MUHAMMAD HARUNUR RASHID
DEPARTMENT OF ELECTRICAL
& COMPUTER ENGINEERING

Winfred Allgyer Electrical & Computer Engineering
Securing the Future: A Comprehensive Review of Post-Quantum Cryptography and Emerging Algorithms
 Co-Author(s): Tyler White
 Faculty Mentor(s): Tarek Youssef Elsayed
 Lead Author Classification: UWF Undergraduate Student
 Session: Main Oral Presenters
 Session Time: 9:00-10:30; Location: Nautilus (rm 255)
 Presentation Time: 9:00AM

In the modern world, technological advancements are being made nearly every day. However, some of these advancements also give way to new vulnerabilities in the security systems implemented in the world today. Specifically, the slowly growing realm of quantum computers has triggered many researchers and experts to raise the alarm on the security of current cryptographic methods used to safeguard personal and valuable information from unauthorized entities. Many experts agree that the topic of post-quantum cryptography is a field that needs immediate attention to prevent a severe crisis when quantum computers become stable enough to run reliably. While it has been slow to this point, a breakthrough will likely trigger a wave of innovation that could rapidly overtake the world. In this research, the current cryptographic systems, the basics of quantum computing, and post-quantum cryptography as well as the new algorithms associated with it will be discussed. This research will provide a base of information in which readers will be introduced to several viewpoints regarding the matter of post-quantum cryptography.

Dhyey Patel Electrical & Computer Engineering
Remote Controlled Foiling Sailboat
 Co-Author(s): Jesus Molina, Bethany Crow, Karan Shah, Noah Earl
 Faculty Mentor(s): Michael Reynolds
 Lead Author Classification: UWF Undergraduate Student
 Session: Engineering Showcase
 Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00
 Sail Pensacola is a non-profit corporation that wants student engineers to create a remote-controlled “foiling” sailboat. The sailing community has never seen a RC sailboat foil before which has motivated us to find a creative solution to solve this problem. Our product is intended to move, float, rotate, and foil in moderate breeze while regulating flow and balance. The Capstone Team and the Mechanical Engineering Enterprise Team will work together to develop this sailboat. The Capstone Team was tasked to research and build a control system to make the sailboat functional. We also worked with the Enterprise Team to build the hulls, sails, mast, and boom. Our sailboat is a catamaran-style sailboat that is 1 meter in size and will operate using rudder and sail winch servos. The hydrofoil and sail will be enough to regulate the speed of the boat and gain lift to where we may not need a motor. Overall, this project relies on well-understood technology and research to build the first RC foiling sailboat.

Tony Pham Electrical & Computer Engineering
Review of Different Cyberattack Techniques and Machine Learning Defense Techniques for Substation
 Faculty Mentor(s): Bhuvanewari Ramachandran
 Lead Author Classification: UWF Undergraduate Student
 Session: Engineering Showcase
 Session Time: 10:00-12:00; Location: Cannon Green
 Presentation Time: 10:00-12:00

Lately, there has been an increase in the volume of cyber attacks on smart substations. These attacks are detrimental to businesses and utility companies since they are losing millions of dollars of revenue. The government is also worrying about this issue since these utilities’ wireless communication networks could be compromised anytime, and hackers could steal top-secret information. These attacks include False Data Injection, Side Channel Attack, Signal Delays Attack, and Distributed Denial of Service Attack(DDoS). These attack methods try to compromise the wireless communication system so that they can access and manipulate the data. Once they are in the system, they can change some measurements in the substation to trip a circuit breaker to cut off the electricity connection to an area. This literature review highlights some of the current methods used to attack the substation, as well as machine learning techniques implemented in this system to detect and mitigate these attacks. Some defense techniques include Random Forest, Logistic Regression, and Game Theory. These techniques efficiently identify and mitigate known attacks with high accuracy but struggle against unknown attacks. This is common with machine learning techniques since they are trained using data sets and are only efficient against known attacks.

Asa Riffie Electrical & Computer Engineering
Connected Vehicle Security: Overview of Risks and Mitigation Strategies
 Co-Author(s): Allen Riffie
 Faculty Mentor(s): Tarek Youssef Elsayed
 Lead Author Classification: UWF Undergraduate Student
 Session: Virtual Presentation
 Location: Gather Town
 Poster #6

Integrating Communication into vehicles is a relatively new and modern concept that has been adopted almost universally by vehicle manufacturers. Unfortunately, this has happened so fast that there has been some oversight leading to disregard for the security of these vehicles and their software. This paper aims to tackle the issue in seven main sections. The first two sections, the Introduction and Literature Review, give a background on connected vehicle security, explaining what it is, why it is important, the current standards incorporated, the different types of threats and vulnerabilities, mitigation strategies, and a case study. Sections three and four address the risks and impacts of a compromised vehicle briefly and what makes the security of connected vehicles uniquely difficult. Sections five and six propose a list of changes that could be made going forward to better prepare for the growing threats on vehicle security. Lastly, section seven provides a summary and conclusion.



DEPARTMENT OF MATHEMATICS & STATISTICS

Lucas Alderfer

Mathematics & Statistics

Meta-Analysis on Eating Disorders and their Comorbidities

Faculty Mentor(s): Samantha Seals

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #19

This meta-analysis provides a demonstrative investigation of the prevalence of psychiatric comorbidities in eating disorders across different demographics. Odds ratios for comorbidities will be assessed using two datasets: one examining adults 18-60+ in the United States, and the other examining adults 50-70+ in Britain. While existing research indicates a high percentage of eating disorder patients have at least one comorbid condition, the scope of this research fails to address diversity demographically. This study, while mostly illustrative in its comparisons, does highlight this gap in research. Analytical methods involved collecting studies, pooling effect sizes, and calculating variances in order to combine odds ratios to assess relationships and heterogeneity. Statistical findings are presented using forest plots to visually evaluate the relationship between eating disorders and their comorbidities within the demographics examined. This research contributes to understanding the prevalence of psychiatric comorbidities in eating disorders, the shortcomings of available research, as well as the importance of demographic variations in research for effective clinical practice and the agency of public health.

Josh Cook

Mathematics & Statistics

Predicting Paths to Success: The Future of Clinical Trial Design

Faculty Mentor(s): Achraf Cohen

Lead Author Classification: UWF Graduate Student

Session: Main Oral Presenters

Session Time: 2:00-3:00; Location: Auditorium

Presentation Time: 2:45PM

Clinical trials are the gateway to new medical treatments, yet their success hinges on the critical factor of patient enrollment. Our project addresses this pervasive issue by offering a predictive method for assessing the likelihood of a clinical trial's success, based on historical data from the Aggregate Analysis of ClinicalTrials.gov (AACT) database. This not only aids project managers and pharmaceutical companies in strategic planning but also marks a departure from traditional, qualitative feasibility assessments. By analyzing past trials, our model identifies the design features most associated with successful trial completion (within any medical specialty), thus enabling more informed decisions for future trials. This innovation transforms clinical trial management from a reactive to a proactive discipline, optimizing resource allocation and enhancing the probability of trial completion on time. Employing tools such as R, PostgreSQL, the tidyverse suite for data handling, and Quarto for reporting, our interdisciplinary approach

DEPARTMENT OF INTELLIGENT SYSTEMS & ROBOTICS



Kobi Menser

Intelligent Systems & Robotics

Challenge Accepted: Development of a Sumo Robot for National Robotics

Challenge (NRC)

Co-Author(s): Emmalee McClain, Luke Bryant, Rafael Esteves, Pedro de Oliveira

Camargo, Trey Owens, Veronica Vargas

Faculty Mentor(s): Hakki Erhan Sevil

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

The Enterprise team from the Mechanical Engineering Department formed a SumoBot competition team. The Sumo Robot Contest in the National Robotics Challenge requires a student team to build a self-propelled, autonomous, sensing robot, designed to force another SumoBot outside a ring. The competition ring is a flat black square, measuring 8 feet across. There is an inside square surrounded by a two-inch (2") wide, painted or taped, flat white square. Another white one-inch (1") wide line will surround the inner ring with two inches (2") between them. When any part of the robot crosses completely over the one-inch (1") white outer ring while being pushed by the opposing robot, it will lose the contest. Initially, we focus on designing our SumoBot, ensuring it adheres to all design specifications and regulations. Rigorous testing processes are implemented to validate the functionality and performance of our robot. In parallel, we diligently completed the application process and ensured its timely submission to the NRC Competition Board. The team will aim to secure victory by demonstrating the superior performance and strategic capabilities of our SumoBot. Beyond the immediate competition, we aspire to establish a lasting legacy by fostering a new generation of competitive robotics teams at UWF, thus contributing to the growth of this exciting field of robotics.

extracts success patterns from extensive trial data, driving clinical research towards a future of precision and efficiency. This progress in trial design and management not only advances healthcare research but also expands clinical trials as an accessible care option. In essence, our work not only streamlines research processes but ultimately serves patients, delivering the treatments they need and deserve.

Josh Cook **Mathematics & Statistics**
From Classroom to Clinic: Applying Linear Mixed Models to Understand Real-World Medical Research Data

Co-Author(s): Syed Ahzaz H. Shah, Jacob Hernandez, Sara Basilis

Faculty Mentor(s): Achraf Cohen

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Session Time: 1:00–2:00; **Location:** Conf Room AB

Presentation Time: 1:00–2:00; **Poster #20**

This graduate capstone project is a testament to the power of statistical modeling in healthcare research. It focuses on applying Linear Mixed Models (LMMs) within R to scrutinize the effect of BMI on intraocular surgery (IOS) measures, leveraging a diverse dataset from Kaggle. The data's complexity, reflecting variations in IOS outcomes attributable to BMI differences, provided a rich learning ground for employing advanced statistical methodologies. Through detailed exploratory data analysis, we unraveled intricate patterns and discerned the subtle influences of BMI on IOS metrics, utilizing visual tools to elucidate these relationships. The modeling phase involved rigorous LMM fitting, with model selection guided by AIC and BIC considerations, culminating in a model that embodies random slopes and intercepts to capture the variability of IOS responses across individuals. Our diagnostic evaluations confirmed the robustness of the LMM, ensuring the assumptions of homoscedasticity and normality were satisfied. The project's findings reveal a notable correlation between BMI and IOS outcomes, effectively encompassed by the LMM's random effects. The academic journey of this capstone has been as informative as it has been transformative, advancing our comprehension of both the subject matter and the analytic tools at our disposal. The project highlights the indispensability of LMMs in handling complex, real-world data in medical contexts, reinforcing the relevance of data science in driving medical research innovation. As emerging data scientists, the hands-on experience and insights garnered from this study are invaluable, solidifying our foundation in statistical analysis and preparing us for future challenges in the field.

Josh Cook **Mathematics & Statistics**
Harmonizing Healthcare: The Art and Statistics of Consensus Building

Co-Author(s): Andrew Jimenez

Faculty Mentor(s): Achraf Cohen

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Session Time: 9:00–10:00; **Location:** Conf Room AB

Presentation Time: 9:00–10:00; **Poster #19**

In the complex realm of medicine, it's essential to acknowledge that even seasoned practitioners may require guidance, especially when faced with uncertain or risky medical scenarios where traditional research methodology

is deemed not feasible or unethical. Consensus statements are crucial tools for synthesizing expert opinions in such situations, offering a collective direction where singular expertise might be insufficient. However, there are several types of consensus studies, each with their own design schema and statistical guidelines that require deep understanding to ensure the validity and reliability of study outcomes. Our study provides a succinct guide to the intricacies involved in crafting these statements, addressing the definition of consensus, the optimal number of expert participants, and the balance between agreement and discussion rounds. We highlight the role of iterative feedback and the challenge of expert retention, supported by R simulations that assess the parameters that influence consensus achievement. Our conclusions serve as practical advisories for project managers and protocol writers, emphasizing that the process of reaching a consensus is not only iterative and collaborative but also integral to advancing medical practice and knowledge.

Josh Cook **Mathematics & Statistics**
Predicting Paths to Success: The Future of Clinical Trial Design

Faculty Mentor(s): Achraf Cohen

Lead Author Classification: UWF Graduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #9

Clinical trials are the gateway to new medical treatments, yet their success hinges on the critical factor of patient enrollment. Our project addresses this pervasive issue by offering a predictive method for assessing the likelihood of a clinical trial's success, based on historical data from the Aggregate Analysis of ClinicalTrials.gov (AACT) database. This not only aids project managers and pharmaceutical companies in strategic planning but also marks a departure from traditional, qualitative feasibility assessments. By analyzing past trials, our model identifies the design features most associated with successful trial completion (within any medical specialty), thus enabling more informed decisions for future trials. This innovation transforms clinical trial management from a reactive to a proactive discipline, optimizing resource allocation and enhancing the probability of trial completion on time. Employing tools such as R, PostgreSQL, the tidyverse suite for data handling, and Quarto for reporting, our interdisciplinary approach extracts success patterns from extensive trial data, driving clinical research towards a future of precision and efficiency. This progress in trial design and management not only advances healthcare research but also expands clinical trials as an accessible care option. In essence, our work not only streamlines research processes but ultimately serves patients, delivering the treatments they need and deserve.

Gail Han **Mathematics & Statistics**
Determining Sample Size for Latent Class Analysis

Faculty Mentor(s): Achraf Cohen

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Session Time: 11:00–12:00; **Location:** Conf Room AB

Presentation Time: 11:00–12:00; **Poster #24**

Latent Class Analysis (LCA) is a statistical method used to categorize individuals

based on unobservable latent variables using observable categorical responses. It is widely employed in social, behavioral, and health sciences. The efficacy of LCA hinges on having a sufficient sample size to reliably identify classes and accurately classify individuals. However, inconsistencies in past research results underscore the necessity for guidelines. This study aims to improve the application of LCA by providing insights into determining sample sizes and assessing performance across various scenarios. We conducted simulations encompassing over 24 scenarios, including different class counts, observed indicators, and sample sizes. Each scenario involved 1,000 simulation runs. Our results indicate that, compared to the 3-class models, 2-class models demonstrate higher accuracy in model selection across different numbers of variables. Additionally, larger sample sizes for scenarios involving 15 and 20 variables enhance the accuracy of 3-class models but diminish that of 2-class models. Our findings suggest that 2-class models consistently outperform 3-class models in terms of model selection accuracy, regardless of the number of variables or sample sizes. However, increasing the sample size can adversely affect the accuracy of 2-class models when dealing with more variables while benefiting 3-class models.

Aidan Jensen

Mathematics & Statistics

An Exploration of Presence and Pseudo-Absence Data in the Analysis of Loggerhead Sea Turtle Nesting Behavior in the Florida Panhandle

Co-Author(s): Halie Wetherington

Faculty Mentor(s): Samantha Seals

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #4

Sea turtle nesting behavior focuses on nesting location (presence data), however, to fully study nesting behavior, we must have information about locations they did not nest (absence data). In order to study nesting behavior, pseudo-absence points are created using historical topological data collected by scientists. It is standard ecological practice to examine different ratios of presence and pseudo-absence points, however, there has not been a formal investigation into the statistical properties of various ratios. Thus, our goal is to quantify any differences in the estimation of statistical models. Specifically, we focus on data collection from 2010, when there were $n=17$ loggerhead sea turtle nests observed, resulting in $n=170$ 10:1 pseudo-absence points that we will treat as the “population” of absence data. Then, smaller samples were repeatedly sampled from this data, without replacement, at ratios of 1:1, 2:1, and 5:1, and concatenated with the original presence data. Binary logistic regression was then used to model nesting behavior as a function of foreshore slope, beach slope, foredune height, nest distance from higher high water, and nest elevation for each of the constructed datasets. Bias, mean squared error, and discordance rate will be examined to determine if a smaller ratio is sufficient to detect relationships between nesting behavior and topographical characteristics.

Rachel Ledford

Mathematics & Statistics

Profiling Pensacola Beach: One Field Trip for Multiple Lesson Plans

Faculty Mentor(s): Samantha Seals

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #22

Coastal sand dunes are essential to our environment by providing a natural barrier to weather conditions, such as storm surges, which protects infrastructure along the beach and prevents flooding. Sand dunes are home to many animals such as mice, worms, and other common beach creatures. Through the UWF-Teach and Noyce Scholar programs, a detailed lesson plan on coastal sand dunes was created for high school geometry students. By finding the distance traveled and point of elevation, students are able to use the Pythagorean Theorem to find the slope of the dune between two points. Then, by adding the slope distances together we can find the true distance of the sand dunes and can compare them to one another if conducted on multiple dunes. This research has been continued by expanding this data collection to include the high school statistics course. Through collecting data on multiple locations across three local beaches, students can use analysis of variance to discover differences in characteristics among the coastal sand dunes. These lesson plans will allow students to gain hands-on experience with scientific equipment and apply a real world application to concepts being learned in the classroom and demonstrate how one field trip for data collection can connect multiple topics between mathematics and science.

Emmanuel Paalam

Mathematics & Statistics

Leveraging Data Analytics to Improve Education Outcomes

Faculty Mentor(s): Shusen Pu

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #20

This research project aims to improve data science and analytics use in the education sector, from K-12 to higher education, for greater student success. We are investigating students at greater risk of academic stagnation or disengagement, which is influenced by complex circumstances, such as academic and non-academic aspects, including financial and behavioral traits, to identify the attributes behind student dropouts. There are already various techniques currently used by educational institutions and districts to detect these student populations. The University of West Florida’s Computational Statistics and Data Analytics Lab is leading a study analyzing these tactics to tackle the problem of student dropouts and delays and identify areas for improvement. The first phase of our study is to provide an extensive assessment of the current literature on the existing frameworks and approaches to the techniques used by educational institutions and districts. We will then gather publicly accessible student data, creating an advanced machine learning and statistical model to accurately predict critical educational results, such as the probability of dropout or graduation delay among students. We expect obstacles may be due to the restricted availability of specific datasets, especially those holding personally identifiable information. Additionally, the size and composition of some datasets may require significant data-cleaning operations. Nevertheless, our results aim to enhance scholarly discussions on educational analytics and provide practical insights for educational institutions, helping schools execute tactics that enhance student retention and achievement in an effective way with minimal resource loss tradoff.

Harsha Pola **Mathematics & Statistics**
Generative AI: A Comparison of CTGAN and CTGAN with Gaussian Copula in Generating Synthetic Data with Synthetic Data Vault (SDV)
Co-Author(s): Dr. Chandra Prayaga, Dr. Aaron Wade, Gopi Shankar Mallu
Faculty Mentor(s): Lakshmi Prayaga
Lead Author Classification: UWF Graduate Student
Session: Main Oral Presenters
Session Time: 10:45-12:15; **Location:** Olympia (rm 272)
Presentation Time: 12:00PM

Generative AI: A Comparison of CTGAN and CTGAN with Gaussian Copula in Generating Synthetic Data with Synthetic Data Vault (SDV) Synthetic data generated by Generative Adversarial Networks and Auto encoders is becoming more common to combat the problem of insufficient data for research purposes. However, generating synthetic data is a tedious task requiring extensive mathematical and programming background. Open-source platforms such as the Synthetic Data Vault and Mostly AI have offered a platform which is user friendly and accessible to non-technical professionals to generate synthetic data to augment existing data for further analysis. The SDV also provides for additions to the generic GAN such as the Gaussian copula. We present the results from two synthetic data sets (CTGAN data and CTGAN with Gaussian Copula) generated by the SDV and report the findings. The results indicate that the ROC and AUC curve for the data generated by adding the layer of Gaussian copula are much higher than data generated by the CTGAN. **Keywords—** Synthetic Data Generation, Generative Adversarial Networks (GANs), Conditional Tabular GAN (CTGAN), Gaussian Copula.

FNU Shrishti **Mathematics & Statistics**
Cherry Blossom Predicting in Washington D.C. Using Machine Learning Models
Co-Author(s): Nitul Singha
Faculty Mentor(s): Achraf Cohen
Lead Author Classification: UWF Undergraduate Student
Session: Main Poster Session
Session Time: 11:00-12:00; **Location:** Conf Room AB
Presentation Time: 11:00-12:00; **Poster #25**

The captivating phenomenon of cherry blossoms tree inspires our exploration into predicting their timing using advanced machine learning and statistical modeling. This project investigates regression models to predict the cherry blossom day of the year in Washington D.C.. Leveraging multiple data sources on weather and climate change (temperature distribution, number of climate incidents, humidity, rain, etc.), we developed three predictive models to minimize the mean absolute difference between the predicted and the actual values. R/RStudio, Python, and tidymodels packages were employed to perform the analysis.

Kellie Tamimi **Mathematics & Statistics**
Understanding Salivary pH vs Life Satisfaction Through Perceived Stress and Sleep Quality

Faculty Mentor(s): Shusen Pu
Lead Author Classification: UWF Undergraduate Student
Session: Main Poster Session
Session Time: 9:00-10:00; **Location:** Conf Room AB
Presentation Time: 9:00-10:00; **Poster #21**
 Life satisfaction significantly impacts motivation, resilience, and overall well-being (Anataramian, 2017). It is assessed as a subjective indicator, showing positive links with academic performance (Halkos & Bousingakis, 2010). Research also suggests correlations between life satisfaction, organizational activity, internal control orientation, and perceived health (Palmore & Luikart, 1972). Additionally, studies have explored relationships between life satisfaction, sleep quality, and perceived stress. Lee et al. (2016) found an indirect correlation between perceived stress and life satisfaction, while Shin and Kim (2018) supported a direct link between sleep quality and life satisfaction. Salivary pH has been linked to both sleep quality and perceived stress. Dickman et al. (2007) reported an indirect relationship between salivary pH and sleep quality, and Cohen and Kaliha found a similar indirect relationship to perceived stress. This study aims to investigate the correlation between salivary pH and life satisfaction in student populations, using perceived stress and sleep quality as mediators. Participants completed the Perceived Stress Scale-10 and Pittsburgh Sleep Quality Index, alongside providing saliva samples. Analyses involved correlations, regressions, and t-tests. Results are expected to support an indirect correlation between salivary pH and life satisfaction, potentially offering an accessible biomarker for assessing life satisfaction with economic benefits. This correlation may lead to utilizing salivary pH as a quantitative marker of life satisfaction in the future.

Dylan Wright **Mathematics & Statistics**
Modelling in Computational Neuroscience
Faculty Mentor(s): Shusen Pu
Lead Author Classification: UWF Undergraduate Student
Session: Main Poster Session
Session Time: 11:00-12:00; **Location:** Conf Room AB
Presentation Time: 11:00-12:00; **Poster #26**
 With the recent advancements in technology and the rise in the general public's awareness of artificial intelligence and neural network models, it is imperative to reflect on the field of neuroscience for its foundational contributions. Data analysis is typically paired with biologically plausible models that can encapsulate the multitudes of behaviors for a single neuron to connections between multiple neural populations. Despite these developments, there remains a lack of understanding of how single-neuron behaviors integrate into neural network models. This study presents a comprehensive review of the current models in practice, examining their descriptive and computational constraints, including accuracy, complexity, mathematical limitations, and solution stability. Our findings aim to pinpoint specific areas that require further research to enhance our quantitative understanding of the connection between individual neuron functions and neural networks.



DEPARTMENT OF MECHANICAL ENGINEERING

Davin Anderson

Micro-Steam Turbine

Co-Author(s): Israel Reimer, Blake Bullock, Reid Travis

Faculty Mentor(s): John Stutz

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; **Location:** Cannon Green

Presentation Time: 10:00-12:00

Inspired by problems with generating power in Liberia, the idea of a compact steam turbine generator that runs off burning biomass came about. The primary objective of this project is to design and build a functioning turbine generator that caters to the specific needs of the people of Liberia as well as provide an alternative form of power generation for campers and people living off-grid. The turbine will be driven by super-heated steam created by heating a boiler system with burning biomass. The boiler system will utilize an open design to nullify the need for condensers and pumps, thereby reducing weight, size, complexity, and manufacturing costs. The Tesla Turbine design will also aid in reducing the complexity and manufacturing costs as the entire turbine will be made from a single sheet of metal.

Mechanical Engineering

Matthew Arellano

Robotic Arm for Lunar and Martian Exploration

Co-Author(s): Juliana Barchie, Cole Bokowski, Brandon Long, Alexis Hughes, Jason Sherwood

Faculty Mentor(s): Maher Amer

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; **Location:** Cannon Green

Presentation Time: 10:00-12:00

To supplement the efforts of extraterrestrial exploration and research in the near future, we have created a robotic arm designed to be equipped to a man-powered vehicle with which astronomical explorers can collect regolith samples and perform daily routines without exacerbating their oxygen supply on missions away from their base of operations. The Robotic arm we have designed can be equipped in any orientation on an explorative vehicle, and be powered electrically, and controlled remotely. In order to test the capabilities of the robotic arm, the robotic arm will be equipped to the NASA Rover Enterprise Team's rover and will compete in the NASA Human Exploration Rover Challenge (HERC) in Huntsville Alabama the day after this symposium! The NASA HERC is an international competition held yearly for students to showcase their designs and contend with other universities for the best time to complete a course with several tasks and obstacles. We are hoping that, while the robotic arm is perhaps not faster than students filled with adrenaline using manual tools, it offers a

Mechanical Engineering

new perspective to students across the world and encourages others to pursue meaningful design solutions that could contribute to developing extraterrestrial exploration in the future.

Kira Benton

UWF Solar Car Team

Co-Author(s): Jade Palewicz, Luca Benny, Nick Woods, Ryan Worley, Teau Turner, Wesley Schmidt, Landon Lee, Daniel Pearson, Evan Middleton, Gavin Ellis, Hecham Mouissa, Michael Wood

Faculty Mentor(s): John Stutz

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; **Location:** Cannon Green

Presentation Time: 10:00-12:00

The UWF Solar Car team was established in 2015 with the purpose of building a car that solely runs on solar-powered energy to compete in the Formula Sun Grand Prix, an annual track competition held on a grand prix or road style closed course. The former team worked on the original enterprise car until a work-in-progress solar car was donated from the Massachusetts Institute of Technology (MIT) in 2020 and was worked on throughout the 2020-2022 semesters. At the beginning of the Fall 2023 semester, it was decided that the design on the MIT car was too unstable for proper use and our focus was turned to the team's original enterprise car. The team is asking the question, "What is required to get the car drivable and how do we best assemble and build each component?"

One major step is designing and assembling our battery pack. A test battery has been successfully assembled and tested this semester, but the team is currently working on testing impedances of the battery cells that will be used to construct our final car battery. A motor and motor controller are in the process of being ordered and will be attached to the vehicle soon after arriving. Steering designs are in progress and will be completed soon. Conducting this research on each component of the car is important in creating a car which is safe to drive and meets all performance requirements.

Mechanical Engineering

Logan Black

R.C. Hydrofoil Sailboat

Co-Author(s): Eddy Alonzi, Emily OConnell, Daniel Bethea, Aric Hansen, Shelby Harris, Michial Holmes, River Schreckengost, Nathan Garner, Aanthony Thompson

Faculty Mentor(s): Michael Reynolds

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; **Location:** Cannon Green

Presentation Time: 10:00-12:00

Our group's goal for this semester was to construct a remote controlled sailboat capable of foiling for 10-second intervals while avoiding the common problems of capsizing and stalling. The stability of our boat is largely due to its three-hulled structure, which was designed by our structural subteam. A trimaran's inherent wider beam lends itself to increased balance while sailing, a crucial characteristic our group considered to be of utmost importance to prevent the risk of capsizing.

As for counteracting the risk of stalling, our hydrofoil subteam used the software

Mechanical Engineering

XFOIL to test foil cross section performance at a variety of different angles of attack to find the optimal fixed angle of attack that provides the coefficient of lift we require to foil at the speeds our craft will be sailing at without being at risk of stalling. Our sail subteam also did extensive research to find out how to obtain optimal wind capture and increase the stability of our boat. Our boat has a two sail configuration due to the increased stability that a headsail provides when combined with a mainsail. Additionally, the foot length of our mainsail also facilitates increased stability. We decided to make our mast 128 cm in accordance with the standard rule of keeping the mast 1.2-1.3 times the overall length of the boat. Even though our research has been applied to a relatively small remote-controlled sailboat, our research is important because hydrofoils can be and have already been integrated into watercraft capable of carrying humans, and the advantages are undeniable. Hydrofoiling allows vessels to experience less drag since the body of the vessel is elevated above the surface of the water, which means that fuel efficiency is improved, a smoother ride is experienced, and higher speeds are achieved.

Christopher Brown

Mechanical Engineering

Budget Oriented Electric Hydrofoil

Co-Author(s): Andres Hamilton, Christopher Brown, Denis Riordan, Ethan Gurley, James Kreuser, Nirdosh Bhandari, Zane Esche

Faculty Mentor(s): Cheng Zhang

Lead Author Classification: UWF Undergraduate

Session: Engineering Showcase

Session Time: 10:00-12:00; **Location:** Cannon Green

Presentation Time: 10:00-12:00

A hydrofoil is a type of recreational watercraft that glides above the surface of the water and is ridden similarly to a surfboard. Currently, available electric hydrofoils can have prices ranging from \$9,000 to \$15,000 US Dollars. We intend to make an inexpensive, safe hydrofoil for less than \$1,500. This will give a broader range of people access to this fun and innovative technology. Our design process involved careful consideration of the many different components of our build including the electrical system and its safety and the hydrodynamic principles of our hydrofoil. We carefully designed with these aspects of our project in mind in order to achieve optimal performance at a reduced cost. The resulting electric hydrofoil provides a memorable recreational experience while remaining accessible and budget friendly. Furthermore, this project leaves possibilities for future improvements and scalability, including the use of renewable energy sources, increased foil efficiency and less labor intensive manufacturing processes. This project demonstrates the feasibility of developing a budget-oriented electric hydrofoil without compromising on performance or safety. The proposed design represents a significant step towards advancement of hydrofoil technology and the expansion of its appeal to a wider audience.

Luis Cwu Rodriguez

Mechanical Engineering

Skateboard Design Team

Co-Author(s): Gary Tran, Gabriel Briley, Jayce Marshall, Shane Laws, Caleb Pereira, Carson Farkas, John Cobb

Faculty Mentor(s): Amrita Gautam

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; **Location:** Cannon Green

Presentation Time: 10:00-12:00

This semester, the UWF Skateboard Design team will design and build skateboards out of sustainable materials. The goal is to design and create composite materials based on epoxy and natural fibers. The skateboard industry is one of the major contributors of maple deforestation. Finding and utilizing new alternatives is vital in order to make sustainable engineering more feasible. Natural fibers such as jute, flax, hemp, etc. may be viable options due to their strength in bending and mechanical loss coefficient. But natural fibers have low elastic modulus compared to synthetic fibers (e.g. carbon fibers, glass fibers), and since a skateboard requires a stiffness-limited design approach, suitable modifications need to be made to the board design and manufacture. To address this problem, composites with varying fiber orientations and lay-ups will be manufactured and tested for improved stiffness. Utilization and design of hybrid composites based on natural and synthetic fibers in an epoxy matrix is also envisaged for improved performance of the manufactured skateboards.

Natalia DeJesus

Mechanical Engineering

Autonomous Lawnmower - Engineering Capstone Design

Co-Author(s): Malcolm Jones, Tyler Murray

Faculty Mentor(s): Bassam Shaer

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; **Location:** Cannon Green

Presentation Time: 10:00-12:00

Over the Spring and Fall semesters of 2023, the team set out to design and produce an autonomous mowing robot, giving time back to the consumer that would otherwise be spent maintaining the height of their residential or commercial lawn. The unit remains conveniently docked in its docking station while not in operation. While the unit is running, it utilizes induction sensors to navigate within its set variable boundary as well as a bumper system to avoid obstacles. An emergency kill switch is included for emergency shutdown. All systems operate on the researchable 36V battery which is easily connected to a standard household 120V outlet, resulting in easy integration into the residence.

Ryan Ebbighausen

Mechanical Engineering

UWF AIAA Design/Build/Fly 2024

Co-Author(s): William Emiro, Lily Haddock, Matthew Hoffman, Liberty McLean, Caleb Opava, Caiden Patton, D'Andre Walden

Faculty Mentor(s): Bradley Regez

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #1

Aircraft design competitions provide a great opportunity for engineering students to gain experience designing and fabricating RC aircraft. Every year, the American Institute of Aeronautics and Astronautics hosts their Design/Build/Fly aircraft design competition. This year, the competition missions and design limitations are based around the theme of Urban Air Mobility. Teams are awarded scores

based on payload carried, time per lap, and battery capacity. Teams are invited to submit a proposal, in which teams outline their conceptual design approach, team structure, analysis techniques, and manufacturing plans for their aircraft. The University of West Florida Design/Build/Fly team consists of 5 seniors and 3 sophomores, all majoring in mechanical engineering. The senior team members have competed in 2 previous aircraft design competitions. The team hopes to leverage this previous experience to create a competitive aircraft design. So far, this goal has been achieved. The team's proposal was ranked among the top 50 out of the 149 proposals submitted. Many of the teams we are competing with have more members, some of them with graduate and aerospace engineering degrees. The team is satisfied with our placement so far and has met our goals outlined in the proposal. The team has submitted an overall design report and is in the process of manufacturing our competition plane.

Hudson Farkas **Mechanical Engineering**

UWF SAE BAJA

Co-Author(s): Matthew Blas, Orion Conolly

Faculty Mentor(s): John Stutz

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

The UWF SAE BAJA team is working on a brand new off-road-capable vehicle to compete in the SAE BAJA competitions. With previous failures in mind, the team intends to engineer and build a reliable and capable off road vehicle with every inch being mathematically analyzed and methodically constructed. Our goal is to build something that will last for years to come and will continue to compete through that time.

Keith Floyd **Mechanical Engineering**

Spiral Conveyor Optimization

Faculty Mentor(s): Tiffany Jackman

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #23

Increasing adoption of spiral conveyors by industries such as food and beverage, pharmaceuticals, automotive, and electronics, has created a need for efficient and optimized material handling processes to meet consumer demands and ensure operational efficiency. Spiral conveyors offer unique advantages in material handling applications, particularly for vertical and space-constrained environments. However, their design holds potential for further optimization. This research investigates various aspects of spiral conveyor design with the aim of identifying ways the industry has optimized this product to improve efficiency, enhance material flow, and optimize structural design. Optimized designs reduce operational costs by lowering energy consumption and maintenance requirements. It also improves material handling efficiency by enhancing throughput and minimizing material losses. Optimization leads to lighter and more durable conveyors, improving performance and the overall lifespan.

Kassandra Gartman **Mechanical Engineering**

SAE Aero Argonautics

Co-Author(s): Alyssia Bryson, Aza Boykin, Brett Brustad, Ashley Creighton, Hunter Wagner, Kaitlyn Williams, Connor Yourist, Liberty McLean, Camden Chambers, William Emiro, Kamran Bineshtarigh, Joel Gonzalez, Caiden Patton,

Hayden Pursell, Joseph Pusateri

Faculty Mentor(s): Bradley Regez

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

The UWF Argonautics Team aimed to participate in the 2024 SAE Aero East Competition. This competition required the design and construction of an aircraft capable of carrying a liquid payload in flight. Our team was challenged to drain the payload within a minute after completion of a full circuit of flight. Initially, the team performed research, gaining an understanding of aircraft design for stability and performance. After creating a design and modeling it in SolidWorks, the team constructed a prototype. A test flight was performed which demonstrated the flight capability of the design and revealed the need for refinements. The team updated our design and constructed a final iteration of our aircraft: the Odyssey. Between March 8th and 10th, our aircraft was entered in the SAE Aero Competition. Our team placed 11th overall. During competition our team learned various ways to improve our methodology and understanding of aircraft design.

Brendon Jones **Mechanical Engineering**

Autonomous Tackling Dummy (ATD)

Co-Author(s): KJ Torres, Cody Reilmann, Ethan Besmer, Daniel Hughes

Faculty Mentor(s): Amrita Gautam

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

The Autonomous Tackling Dummy (ATD) is an automated tackling dummy capable of replicating human-like agility and movement. Employing mecanum or omnidirectional wheels, the robot can execute maneuvers without requiring specific turning orientations, unlike conventional vehicles. The Autonomous Tackling Dummy (ATD) represents a cutting-edge advancement in sports training equipment, driven by the vision of our team leader, KJ Torres, a former student-athlete at UWF. Recognizing a gap in advanced training tools within our facility and others like it, we embarked on this project to revolutionize athletic preparation. Existing robotic tackling dummies, priced around \$4500, offer limited movement capabilities, primarily moving forward and backward with minimal lateral agility. In contrast, the ATD utilizes omnidirectional wheels, enabling it to execute human-like maneuvers, including sharp 90° cuts in any direction, mirroring real-world athlete movements with a full 360° range. Currently, the robot is operated through an RC-transmitting remote control, but it is undergoing a transition to be controlled via a smartphone application. The ATD can be adapted for use in various sports beyond football, such as basketball or soccer, broadening its potential impact across athletic disciplines. Furthermore, while primarily designed for college-level athletes and beyond, the

ATD demonstrates remarkable versatility and adaptability, making it suitable for implementation in youth sports programs as well.

There is currently ongoing research and development to further refine the ATD technology as we continue to explore new applications within the realm of sports training.

Tanner Landry

Mechanical Engineering

Dog Wheelchair Team

Co-Author(s): Caleb Jackson, Greg Miller

Faculty Mentor(s): Michael Reynolds

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

Enhancing Canine Mobility: A Canine Wheelchair Design This project presents a novel approach to enhancing the mobility of canines through the development of a customized wheelchair system. Over the course of two semesters, our team has focused on designing and prototyping a canine wheelchair that addresses key challenges faced by rear limb disabled dogs. The wheelchair incorporates adjustable legs, driven by servo motors, enabling canines to stand comfortably and maintain mobility. One of the significant aspects of our design is the utilization of 3D printed TPU wheels which not only ensure maintenance-free operation but also serve as effective shock absorbers, providing a smoother and more comfortable ride. Additionally, we have developed a custom-tailored harness made from TPU, precisely fitted to each individual canine, ensuring optimal comfort and support during use. Furthermore, the wheelchair has been engineered to lift canines weighing over 18 kg, incorporating a two-times safety factor to ensure reliability and safety in operation. This design not only offers improved mobility for rear limb disabled canines but also aims to enhance overall quality of life by providing a durable and efficient solution. Our canine wheelchair represents a significant strike in assisting disabled canines, embodying a practical and compassionate approach to enriching their mobility and well-being.

James Lehman

Mechanical Engineering

Spring 2024 Battle Bots (Pensacola)

Co-Author(s): Benjamin Feliciano Rodriguez, Caden White, Connor Oswald, Jonah Mitchell, Keith Floyd, Koda Prevatte, Nathan Stevens, Tony Aepli, Wyatt Ross, Gavin Bailey

Faculty Mentor(s): Davi Oliveira De Camargo

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

Battle Bots (Pensacola) is an OUR funded enterprise team that tasked with providing a battle bot that will later compete against the Battle Bot Fort Walton Beach team. Throughout both semesters our team utilizes the engineering process where we have to learn to design, order parts, assemble, test, adjust, manage a budget, and most importantly learn how to work on a team. Finishing out this semester strong we plan to come back from break and have our bot fully assembled for the fight early May.

Alli Morgan

Mechanical Engineering

U.C. Cool - The Solar Powered Air Handler for Unoccupied Cars

Co-Author(s): Gregory Clark, Joshua Coonrod

Faculty Mentor(s): Sam Russel

Lead Author Classification: UWF Undergraduate Student

Session: Main Oral Presenters

Session Time: 12:15-1:15; Location: Great Hall

Presentation Time: 12:30PM

Parked cars left baking in the sun can quickly turn into ovens, posing discomfort and potential health risks to occupants upon entry. The UC Cool Team presents an innovative solution to this pervasive issue by introducing a solar-powered ventilation system designed to regulate cabin temperatures effectively. Our project addresses this challenge of overheated car interiors through the implementation of a compact yet powerful fan system driven by solar energy via a solar panel. Conveniently, the duct system is designed to connect to the top of a car window for easy access and control. A setup consisting of a temperature sensor, relay, microcontroller, battery, solar panel, and fan ducting system will allow detection of cabin temperature and regulate the system accordingly by activating or deactivating the fans. By strategically integrating the UC Cool into the vehicle's structure, we aim to circulate air efficiently, mitigating the buildup of heat and ensuring a more comfortable environment for occupants. Through rigorous design, testing, and optimization, our team has developed a solution that not only enhances comfort but also promotes sustainability by harnessing renewable energy sources. The proposed duct offers a practical and eco-friendly approach to managing cabin temperatures, alleviating the discomfort of an overheated car. Ultimately, UC Cool represents a step towards creating smarter, more comfortable and environmentally conscious transportation solutions, with potential applications in consumer vehicles.

Peter Salvucci

Mechanical Engineering

R.C. Leaf Processing Machine

Co-Author(s): Jake Garbison, Connor McGreger, Justin Fradejas

Faculty Mentor(s): Sam Russel

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

Every year many elderly and disabled people struggle to rid their yard of leaves as raking is an arduous task. Could there be a way to design a machine that would allow these people to safely remove the leaves and dispose of them without straining themselves in the process? Our machine will accomplish this by being remotely controlled and will vacuum and then process leaves to ensure quick and effective disposal. At this point, we understand the process and components required to accomplish the fabrication of this machine and will finish the project by the end of next semester.

Amanda Serger

Mechanical Engineering

Microneedle Design Team

Co-Author(s): Vanessa Lopez, Ellie Rothfuss, Jaden Langford

Faculty Mentor(s): Maher Amer

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

The Microneedling design team is working to develop an alternative, more accessible technique to conventional suturing utilizing microneedles. The goal is to design a suture device for soldiers with deep skin injuries and restricted access to a healthcare professional. Using novel microneedle technology, this design will enable the soldiers to insert a number of arrays with small needles into their skin. Multiple designs have been proposed, most of which utilize hooks or holes in the array for the user to thread sutures through the microneedle. This method is beneficial in that the microneedles will eventually dissolve into the skin, meaning that soldiers will not have to worry about their removal. While this is the project's ultimate goal, it is still very early in the design process, with testing and development near the future. Each design is tested to see if it can withstand enough force to function as a suture. Thus far, the Microneedle team has four proposed designs. The first two designs consist of hourglass-shaped needles with sharp tips. The hour-glass shape is to ensure optimal penetration—it will be difficult for the inserted needles to fall out of the skin due to the hourglass design. The second two designs utilize a traditional cone shape, and will be tested against the hourglass needles. Ultimately, the end goal of this project will be beneficial to anyone that cannot access a nurse or doctor to provide conventional sutures, and will act as an easier, more efficient means to heal the body.

Ryan Wehmeyer

Mechanical Engineering

Title: Fort Walton Beach BattleBots Enterprise Team

Faculty Mentor(s): Danita Marcum

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

Keenan Williamson

Mechanical Engineering

UWF Electrathon Racing

Co-Author(s): Nolan Basel, Tommy McDonald, Dylan Nearbin, James Perz, Timothy Thai, Damian Huff, Christopher Heggdal, Micah Cilley, Grayson Walters

Faculty Mentor(s): Cheng Zhang

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

The goal for the Fall 2023 semester for the EV Racing Team was to finalize and execute changes to our electric vehicle to ensure it is ready to race in the Electrathon. Our first race is scheduled in this April at Five Flags Speedway in Pensacola. The race will be an endurance-type race. Specifically, the competition is how far a team can go in an hour on one charge.

Sharon Zubler

Mechanical Engineering

NASA Rover

Co-Author(s): Grayson Reamsma, Brandon Conk, Nikolas Hume, Viktor Tran,

Will Steele, Sam Kammerer

Faculty Mentor(s): Maher Amer

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

The NASA Human Exploration Rover Challenge (HERC) is a competition where teams from across the globe design, document, and fabricate a human-powered vehicle to traverse obstacles that replicate terrain on Mars. The UWF 2024 NASA Rover team has designed a new Rover with a new drivetrain, wheels, and steering system. Our competition takes place at the Space and Rocket Center in Huntsville, AL from April 18-20. Teams are graded based on reports, presentations, the construction, and the performance of the rover.

Ethan Moen

Mechanical Engineering

FWB Battlebots Spring 2024

Co-Author(s): Ceaser Abdel-Hafez, Stephan Rogers, John Welsh, Andrew Santos, Ryan Wehmeyer

Faculty Mentor(s): Danita Marcum

Lead Author Classification: UWF Undergraduate Student

Session: Engineering Showcase

Session Time: 10:00-12:00; Location: Cannon Green

Presentation Time: 10:00-12:00

This project's primary focus was to design and fabricate a functional robot ready for competition. The design itself was chosen via Socratic method, and, due to limited team experience, was kept relatively simple, but with as much efficacy as could be maintained. This project taught specifics of design, systems integration, team building skills, and resourcefulness. Specifically, when designing and fabricating a prototype, the team was made to work with sub-optimal parts such as components intended for other types of vehicles. This skill has translated into being able to more readily configure more appropriate parts when creating the finished product. Overall, this project has helped to solidify knowledge and experience that had previously been exclusively theoretical as well as set the foundation for the practical skillset needed in a real-world engineering scenario.

DEPARTMENT OF PHYSICS



Teddy Al-Bayat

Physics

Exploring Electronic Resonance Enhancement in 3-color Two-Beam Coherent Raman Scattering

Co-Author(s): Mack Partridge

Faculty Mentor(s): Laszlo Ujj

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #28

We report a new application and extension of our formerly developed and characterized instrumentation and spectral processing methods of two-beam

3-color broadband coherent Raman methodology [1]. The procedure was applied for molecular vibrational measurements over the low-frequency spectral domain. It was recognized that the method could be used to measure high-quality phonon spectra of crystals, but the effects of electronic enhancement have not been investigated. We now present new low-frequency vibrational spectra of, e.g., beta-carotene measured under electronic resonance conditions. We developed the necessary signal-processing method for the observed spectra because altered lineshapes and polarization were detected.

Arav Jain

Physics

An environmentally benign and inexpensive organic semiconductor via cascade cyclization

Co-Author(s): Declan McGurk

Faculty Mentor(s): Tanay Kesharwani

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; Location: Conf Room AB

Presentation Time: 11:00-12:00; Poster #27

Fused heterocyclic compounds are useful in a wide range of applications. Most notably they can be used as high efficiency organic semiconductors. Organic semiconductors boast several advantages over standard, inorganic semiconductors with organics being cheaper, easier to synthesize, flexible, and more environmentally friendly. Fused heterocycles are a class of compounds that consist of multiple rings that are connected edge-to-edge and are the most sought-after organic molecules for organic semiconductor research. This project aims to develop and optimize a new efficient reaction scheme that can create multiple fused rings effectively, thereby reducing the waste generation and cost to produce such molecules on the industrial scale. Varying methods (alkyne-alkyne coupling, reduction, etc.) will be used to form specific dialkynes. Then, a salt will be used to cyclize these dialkynes into fused systems that have semiconductor properties.



EDUCATION PROGRAM



Thanh Bui

Education

Exploring Pre-service Teachers' Understanding Between Two Geometric Concepts of Symmetry and Diagonal.

Co-Author(s): Dr. Giang-Nguyen Thi Nguyen

Faculty Mentor(s): Giang-Nguyen Nguyen

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #15

This ongoing study investigates pre-service teachers' understanding of symmetry and diagonal. A solid understanding of geometric concepts plays the foundation for effective learning and teaching experiences for both pre-service teachers (PSTs) and their future students (Unal et al. 2009). This study examines pre-service teachers' ability to identify the diagonals and the symmetrical in various geometric shapes to diagnose the potential challenges PSTs were facing. By collecting data reflecting the understanding as well as the ability to differentiate between symmetrical and diagonals, the study, at the same time, assesses the previously learned information. For this study, the pre-service teachers were given the task of identifying elements consisting of basic characteristics of different geometric shapes including geometry transformation. The study's results provide practical implications on how to better prepare PSTs to teach mathematics.

Tim Morse

Education

Development of an Explicit Instruction Lesson Plan Protocol From a Synthesis of Multiple Single Case Design Mathematics Studies

Lead Author Classification: UWF Faculty Member

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #13

Attendees will learn about an explicit instruction lesson plan protocol developed from synthesizing six single case design studies involving preschool-grade 12 students with disabilities and students at risk for school failure. In each study, the explicit instruction framework put forth by the National Center on Intensive Intervention was embellished with evidence-based practices to create a lesson plan for teaching one or more mathematics skills. Results across the studies were synthesized to create an evidence-supported lesson plan protocol appropriate for short-duration lessons (i.e., lasting 5-10 minutes) involving multiple practice opportunities with immediate behavior-specific feedback.

Giang-Nguyen Nguyen

Education

The Role of Faculty Mentor on Doctoral Student Journeys Through Self-Determination Theory Lens

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #14

This research investigated the role of a faculty mentor in supporting doctoral students in an online program. The research is guided by the Self-Determination Theory. The Basic Psychological Need Satisfaction (BPNS) Scale was used to assess doctoral students' basic psychological needs of competence, relatedness, and autonomy. According to the theory, these three needs must be fulfilled for an individual to function in optimal ways. In that respect, this research examined if there is a significant difference in their need satisfaction between the two groups of doctoral students, those who have faculty mentors and those who do not have faculty mentors. The results indicate that there is a statistically significant difference between the two groups in terms of relatedness and autonomy.

Stephany Rosas-Bernardino

My Experience With a Short-Duration Lesson With Students With Multiple Disabilities

Co-Author(s): Dr. Giang-Nguyen Nguyen

Faculty Mentor(s): Tim Morse

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #18

I decided to get involved in research because it allowed me to dive deeper into a subject I'm enthusiastic about. It has helped me gain valuable skills like communication, collaboration, planning, patience, and time management. In the long term, I plan to use the skills and knowledge I have learned to advance my career. As for my faculty mentor, I'm interested in Dr. Morse's work due to his field reputation and passion for research. Alongside Dr. Morse, we've been doing "An Investigation of an Explicit Instruction Approach to Teach Basic Academic Skills to Students With Multiple Disabilities." The research is to determine the efficiency of a short-duration lesson on addition and subtraction acquisition and fluency. We are working with two first graders. Dr. Morse completes the main 10-minute lesson, and I reinforce the lesson attainment with a post-study mathematics activity. Thus far, I've only time-checked and done 5-minute post-study math activities after the main 10-minute lesson is complete. I've also learned how a case study operates and the importance of organizing and planning. It has been a hands-on learning experience, and I've gained beneficial skills. My next steps for this research project will be to gain sufficient practice to conduct the main 10-minute lesson myself. From this experience, I expect to expand my knowledge, critical thinking, and analytical skills. Being part of OUR Works, I have learned how to communicate properly and effectively and collaborate with a team. This experience will help me achieve my future goal of becoming a Family and Marriage therapist.

Mary Sylvester

Nomological Network Development for Examining Multiculturalism in Private Sector Dance Curricula

Faculty Mentor(s): Giảng-Nguyễn Thị Nguyễn

Lead Author Classification: UWF Graduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #28

Nomological networks may be implemented in research procedures to visually represent the relationship among examined theoretical constructs, accompanying variables, and forms of measurement. This presentation highlights the development of an original nomological network for a mixed methods case study examining how multicultural information is included in curricula by educators within private sector dance schools in the New England region of the United States. This study explored how multicultural information

Education

is presented in private sector dance curricula, the relationship between dance educators' experience regarding cultural competency education and multicultural information inclusion in private sector dance education, the factors influential for the dissemination of multicultural information in private sector dance curricula, and the perspectives of dance educators regarding opportunities for professional growth related to cultural competency education in the private dance sector. Theoretical constructs of cultural capital, privilege, cultural representation, perpetuation of cultural inequities, racial equity, and social justice derived from cultural reproduction theory and critical race theory (CRT) constituted the first level of the developed nomological network. Nine independent variables derived from the expressed theoretical constructs composed the second level of the network: (a) acceptance; (b) acknowledgment; (c) comfort level; (d) cultural competency; (e) discrimination; (f) exclusive practices; (g) fairness; (h) multicultural inclusion; and (i) responsibility. The final level of the network was represented by the forms of measurement implemented to examine expressed variables: a survey instrument featuring a Likert scale for quantitative considerations and a structured interview for qualitative considerations.



EDUCATIONAL LEADERSHIP

Aneta Walker

Educational Leadership

Using Innovative High Impact Practices to Prepare Aspiring Educational Leaders

Co-Author(s): Julie Gray

Lead Author Classification: UWF Faculty

Session: Faculty HIP Showcase Presentations

Session Time: 8:00-9:00

Location: Zoom (<https://uwf.zoom.us/meeting/88495534775>)

Presentation Time: 8:00-9:00

The presentation will describe one educational leadership preparation program's approach to continuous improvement via high impact practices (HIPs) and experiential learning opportunities for Educational Leadership candidates. The program redesign is based on the conceptual framework of Kolb's Experiential Learning Theory (ELT) and Kuh's High-Impact Practices (HIPs), which promote the connection of theory and practice for an online educational leadership program. The integration of HIPs, including ePortfolios, critical reflection, project-based learning, and immersive simulations, promotes active engagement and allows for experiential learning in a safe environment. HIPs offer leadership candidates an opportunity to engage in real-life scenarios and build their confidence to manage complex, authentic situations. Lastly, immersive simulations allow for leadership-focused coaching that provides strategic, specific feedback for aspiring leaders, who are required to make ethical decisions, navigate complex issues, communicate with stakeholders effectively, and collaborate with their faculty and staff. The presenters will share feedback and perceptions gained from graduate-level students concerning their participation in the HIPs.

Education



INSTRUCTIONAL DESIGN & TECHNOLOGY PROGRAM

Jake Gorman

Instructional Design & Technology

Exploring Virtual Reality Experiences in Construction Drawings

Co-Author(s): Austin Langille

Faculty Mentor(s): Byron Havard

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #38

Virtual Reality (VR) technology offers groundbreaking opportunities for enhancing learning outcomes. This project focuses on leveraging VR to enrich the educational experience within the Construction Drawing class at the University of West Florida (UWF). We've developed a VR experience that allows students to examine the HVAC ductwork of Building 70 on the UWF campus from a reduced size. The mission of the experience is to educate the students on the inner workings of the HVAC system in a highly engaging and interactive environment. Considerations during development will also employ new methods of VR learning at the university. Through the development of a VR journey set within the HVAC systems, students are immersed in a virtual world, allowing for a firsthand exploration of complex systems. Utilizing Unity for development and Engage VR for visualization, the project aims to provide an engaging and interactive environment conducive to learning. Iterative refinement, pilot testing, and feedback analysis are central to the project's methodology, aligning with goals to advance VR-based education. Anticipated outcomes encompass not only enhanced skills in VR development and instructional design but also the cultivation of teamwork skills and techniques for enhancing engagement and interaction. Moreover, this project sets the stage for potential career paths in VR development, opening doors to previously unexplored opportunities.

Holley Handley

Instructional Design & Technology

Technology

Instructional Strategies and Models for Incorporating Critical Reflection in High-Impact Practices

Co-Author(s): Julie Gray

Lead Author Classification: UWF Faculty

Session: Faculty HIP Showcase Presentations

Session Time: 8:00-9:00

Location: Zoom (<https://uwf.zoom.us/join/88495534775>)

Presentation Time: 8:00-9:00

During this session, presenters provide specific examples of instructional strategies and models for incorporating critical reflection into high-impact practice activities. The goal is to provide specific tools for faculty to lead students through critical reflection. Being led through the critical reflection process is one way to help students connect their authentic HIP experiences to the theoretical

content of courses (Ryan, 2013). The presenters will discuss lessons from using the DEAL model to design and develop assignments incorporating critical reflection. Universities continue to incorporate more high-impact practices into their culture and overall curriculum to be student-centered by providing "high-impact educational and co-curricular learning experiences that inspire, engage, and prepare students to become knowledgeable citizens and successful in their careers and lives" (USP, 2023). The increased attention to high-impact practices (HIPs) necessitates the ability to properly assess the impact these practices have on student learning outcomes. Various mechanisms are available to assess student learning outcomes. Two essential elements of HIPs include opportunities to integrate learning through reflection and to discover the relevance of learning through reflection and connection to real-world practices (Kuh, 2013). During this presentation, the authors discuss the insights gained as they designed and developed and examined various models and tools to support key learning outcomes through critical reflection assessment.



DEPARTMENT OF HEALTH SCIENCES & ADMINISTRATION



Skyler McGee

Health Sciences & Administration

Beyond the Shaker: A Comprehensive Metanalysis of the Impact of Salt Intake on Hypertension

Faculty Mentor(s): Ludmila Cosio-Lima

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #16

Hypertension has become an increasingly important topic to healthcare providers across the world for the mitigation of heart disease. Seemingly, the severity of this condition has resulted in many organizations such as the World Health Organization (WHO) and the American Heart Association (AHA) taking a stand towards stricter values associated with the diagnosis of hypertension. The potential causes of this condition are widely accepted within the scientific community, however, the restriction of salt as a reliable component toward its reduction is still debated. Studies demonstrating the potentiality of its positive relationship mostly center on data collected from researchers in the form of independent trials through diet control methods. The variability and lack of control towards confounding factors such as reliable self-respondent eating habits, stress, history of diabetes mellitus (DM), and chronic kidney disease (CKD) have created a considerable examination of its reliability. This working metanalysis describes the association

of salt with blood pressure as it relates to eating habits using data from multiple peer-reviewed journals and sources from the WHO and AHA. Aspects examined in this report will primarily focus on rates of obesity, hypertension, and salt intake as well as confounding factors such as CKD and DM.

Andrea Nelson **Health Sciences & Administration**
Simulating Interprofessional Collaboration Through the Use of Board Games

Co-Author(s): Katie Canvar

Lead Author Classification: UWF Faculty Member

Session: Main Poster Session

Session Time: 2:00-3:00; Location: Conf Room AB

Presentation Time: 2:00-3:00; Poster #25

Increasing access to interprofessional education (IPE) activities has become a top priority for the Usha Kundu, M.D. College of Health (UKCOH) in accordance with many programmatic accreditation measures requiring IPE. Faculty in the past have found it hard to create activities or scenarios that incorporate students from multiple departments at the UKCOH. After much research, the Friday Night at the ER (FNER) board game was determined to be a method to meet that need. FNER allows students from multiple programs, disciplines, and community members to work together and learn the importance of interprofessional collaboration while engaging in this high-impact practice (HIP) project. This poster presentation will showcase the benefits of this collaborative HIP project for not only UKCOH students, but for all UWF students, faculty, and staff.



DEPARTMENT OF MOVEMENT SCIENCES & HEALTH

Denali Bishop **Movement Sciences & Health**
For athletes with ACL reconstruction, does dry needling with neuromuscular electrical stimulation compared to dry needling alone increase quadricep activation and decrease pain intensity operatively?

Faculty Mentor(s): Kelley Henderson

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

I am choosing to conduct research on the following topic because as an Athletic Trainer it is important to stay up to date with new treatment modalities and understanding how they work and their purpose. While doing my clinical immersion with South Alabama, I had the opportunity to interact with the team physical therapists, pre and post surgical intervention. One thing that caught my attention was following all anterior cruciate ligament reconstruction, the players were being dry needled with and without electrical stim to help activate their quadriceps and manage pain. Considering there is minimal research conducted thus far, I wanted to see if there were any outcome measures such as quadriceps activation and a decrease in pain intensity.

Hannah Brooks **Movement Sciences & Health**
What is the Effectiveness of Corticosteroid Injections vs. Platelet Rich Plasma (PRP) Injections for the Treatment of Chronic Shoulder Pain in Adults

Faculty Mentor(s): Kelley Henderson

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

Over the past couple of years, platelet-rich plasma (PRP) injections and corticosteroid injections (CSI) have become increasingly popular to help relieve chronic pain. There has been a rising question of if PRP injections are more beneficial than CSI's due to them being your own cells from your blood to accelerate the healing process of tendons, muscles, ligaments, joints, bones, etc. Whereas CSI injections are a powerful anti-inflammatory and typically just relieve any pain that a patient may be in. With that being said, I will be examining the effectiveness of PRP injections and CSI injections for the treatment of Chronic Shoulder Pain in Adults (results are still pending).

Anonymous Graduate Student **Movement Sciences & Health**
Flexor Digitorum Profundus Tendon Rupture in a High School Football Defensive Lineman

Faculty Mentor(s): Christopher Dake

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

An 18-year-old male high school football defensive lineman presented during halftime with a swollen finger that was tender to palpation. Jersey finger is an acute injury that refers to a rupture of the flexor tendon that bends the finger downward. Further, the injury is typically a result of a mechanism such as the grabbing of an opponent's jersey to make a tackle. Forceful hyperextension of the Distal Interphalangeal Joint (DIP) on a flexed finger is what causes the tendon to tear. Jersey finger is generally accompanied with an avulsion of the bony structure meaning a piece of the bone is pulled off along with the tendon however, in this case the tendon was completely torn without an avulsion which could explain why it didn't present on the x-ray alone. Additionally, surgery for this injury needs to be done within 1-2 weeks after injury not only to restore/preserve blood supply but also because if the tendon sits too long after a rupture it could become too tight to be surgically reattached. Post operation the patient is required to wear a finger splint for a specific duration of time that is dependent on injury severity, and preference of the surgeon. Patients will be assigned exercises, and physical therapy to prevent stiffness, restore strength, and range of motion. Full recovery will require 8-12 weeks of inability to compete in contact sports before they can make a full recovery. It is very common for a jersey finger injury to be misdiagnosed and mistaken for a ligament sprain or a finger fracture. Using diagnostic ultrasound or MRI in addition to an x-ray is the most reliable method to accurately diagnose this type of injury and it is important for clinicians to re-evaluate, and leave no stones unturned.

Jamie Campbell **Movement Sciences & Health**
Effects of Blood Flow Restriction Training on Myokine Release and Isokinetic Strength

Faculty Mentor(s): Youngil Lee

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; **Location:** Conf Room AB

Presentation Time: 9:00-10:00; **Poster #24**

Resistance training (RT) has been a pivotal exercise mode to enhance muscle mass and strength. Besides the muscular benefits, growing evidence has suggested that myokines, biomolecules released from contracting skeletal muscles, critically contribute to protecting the brain from neurodegenerative diseases such as Alzheimer's and Parkinson's disease. However, certain populations cannot tolerate the heavy load required for traditional RT due to various health factors, including age, injury, disease, etc. Intriguingly, the combination of low-load RT with blood flow restriction (BFR) has emerged as a novel modality comparable to high-intensity RT; for instance, a lower stimulus (e.g., 20% of one repetition maximum) in conjunction with BFR results in functional and morphological improvements equivalent to those observed in heavy RT. However, it is unknown if passive involuntary muscle movement with BFR may elicit muscular benefits and myokine release into the blood comparable to those in voluntary RT with BFR. To test this, we will recruit forty UWF sedentary college-aged individuals who will be randomly assigned to one of four exercise conditions: Control group (CON, n=10) Sit on biodex and not required to do any activity Blood flow restriction group (BFR, n=10) Sit on biodex with BFR cuffs inflated to 80% pressure for 5 minutes Blood flow restriction with passive involuntary movement group (PIM+BFR, n=10) Perform 4 sets of 20/10/10/10 repetitions of seated isokinetic leg extensions into a leg curl on a Biodex isokinetic dynamometer; the participants will not be required to move because the Biodex will guide their legs through the movement pattern at a set speed. Blood flow restriction with active voluntary movement group (AVM+BFR, n=10) Follow the same protocol as the PIM+BFR group; however, the exercises will be performed actively by the participant on a seated leg extension machine set at 20% of their determined 1RM. Due to pending Institutional Review Board (IRB) approval, we were not able to start participant recruitment or collect any data as of yet. Once approved, we will start collecting data to present at the symposium next month.

Mia Derosa

Movement Sciences & Health

Investigating the Effect of Transcutaneous Vagus Nerve Stimulation (tVNS) on Pain Management in Knee Osteoarthritis

Faculty Mentor(s): Armaghan Mahmoudian

Lead Author Classification: UWF Undergraduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #26

Knee osteoarthritis (OA) is a leading contributor to physical disability among the elderly and is prevalent among more than 500 million people worldwide, making it one of the most common musculoskeletal disorders. We propose a pilot project that assesses the utility of transcutaneous vagus nerve stimulation (tVNS), which has garnered enough evidence and obtained an FDA approval for management of certain kinds of pain to osteoarthritis. Therefore, we aim to investigate the impact of tVNS on pain management in individuals diagnosed with knee OA. the broader implications of TVNS on enhancing the overall quality

of life for individuals with this chronic condition. Methods: A single-blinded randomized trial (N = 20) with repeated measurements on pain and quality of life will be used. The interventional arm will receive the tVNS stimulation in addition to regular OA management while the participants in the control group will go over the same procedure without tVNS. Knee pain level and quality of life will be measured using the KOOS standard measure. Currently we're awaiting IRB approval to start data collection. Significance: Musculoskeletal conditions affect over 125 million Americans each year with total cost of treatment, care, and lost wages estimated to be over \$200 billion. The proposed research validation of gammaCore's usefulness in this domain could lead to an easy-to-use, non-invasive adjunct treatment for this common chronic condition while reducing the use of opiates and other potentially harmful medication as well as mitigating the negative psychological impact stemming from the condition.

Madeline Fraga

Movement Sciences & Health

In adults suffering from a traumatic brain injury, what is the long term effect of vitamin D supplementation on improving neurological and cognitive recovery?

Faculty Mentor(s): Kelley Henderson

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; **Location:** Athens

This past Fall semester I completed my clinical immersion at the University of Tennessee Chattanooga, with the women's soccer team. During this time, I was able to evaluate numerous concussions and see the recovery process. These experiences made me think of what nutritional factors could potentially affect the recovery of traumatic brain injuries. Vitamin D has been associated with maintaining cognitive function and regulating many genes important for brain function. My presentation will set out to answer the question: In adults suffering from a traumatic brain injury, what is the effect of vitamin D supplementation on improving neurological and cognitive recovery. Results from the research on this topic are still under review.

Kelsey Hodges

Movement Sciences & Health

2024 Spring

Faculty Mentor(s): Kelley Henderson

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; **Location:** Athens

Spring 2024 Investigating the Difference between the Efficacy of Blood Sugar Control by means of Telehealth and In-person consultations with Adolescents who have Type I diabetes. There are two primary reasons as to why I chose this topic and why it is vital that we understand the difference between online and in-person healthcare avenues. One, the increased demand and use of Telehealth arrises a concern for its efficacy and reliability with the improving and/or maintenance of adolescents with Type I diabetes. Two, the observed gradual rise of adolescents diagnosed with Type I diabetes is an area of concern, as it is a serious condition that is often difficult to up-keep if not dealt with and treated appropriately. It is imperative to understand what mediums of healthcare are most effective to solve or maintain a condition that is life-lasting, like Type I diabetes.

Cassidy Hydes

Micronutrients Role with RED-s

Faculty Mentor(s): Kelley Henderson

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

REDs is the acronym for relative energy deficiency in sport. This was previously commonly known as the female athlete triad. This study will be looking at the effects of upping the amount of micronutrients in the athletes diet to see how they will effect the energy level of athletes diagnosed with REDs.

Movement Sciences & Health

cells were cultured, and the neurotoxin MPP+ was used to induce a cell culture model of PD. The cells were split into four groups: 1) control, 2) MPP+-treated, 3) MPP+-treated + 5 mM lactate, and 4) MPP+-treated + 10 mM lactate. Two sets of the four groups were analyzed. For the first set, each group was analyzed with biochemical assays using Western blots. The second set was analyzed using fluorescence microscopy. Our data showed that MPP+-treated cells with no lactate exhibited more cell death compared to the control, and when the cells were treated with lactate as well, they exhibited less cell death than the group treated with only MPP+. The results suggest that lactate can confer neuroprotection against MPP+, and therefore, against PD. The finding provides important insight into the development of a non-pharmacological therapeutic approach for treating PD.

Amy Crawley

In their own words...An intergenerational discussion on exercise and aging in a service-learning course

Faculty Mentor(s): Amy Crawley

Student and Community Participant: See below

Session: Panel Discussion

Session Time: 9:00-10:00; Location: Great Hall

Service learning is a high impact, higher education teaching practice that incorporates the local community and engages students with groups outside of the traditional classroom. This research panel will consist of exercise science students and their community partners sharing insights regarding their challenges, concerns, fears, connections, respect, and admiration when participating in a student-led strength training program. The intergenerational dynamic between students and older adults (age 65+) provides a rich foundation for social, emotional, and professional growth.

Student: Older Adult

Alishah Mays: Cindy Sweeney, age 71

Molly Lamb: Bill Bereki, age 75

Bradley Kelley: Jean Downing, age 62

Jessica Pratt: Sherry Sireci, age 78

Jhett McCosker: Jeanette Norman, age 81

Movement Sciences & Health

Guilherme Magalhaes Lins

Osteochondral Defect in a Women's Soccer Player

Faculty Mentor(s): Christopher Dake

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

This case study follows a 22-year-old female soccer player who suffered an osteochondral defect in her left knee during a game, having previously experienced a similar injury in her right knee. Initially, the injury was misdiagnosed as a ligament sprain or meniscus tear due to its unusual presentation. However, further evaluation, including MRI, confirmed the osteochondral defect. The patient underwent surgical intervention, opting for an Osteochondral Allograft, which proved successful in her recovery. One significant benefit of OCA transplantation over other cartilage regeneration techniques is its quick rehabilitation protocol. OCA transplantation allows patients to rejoin activities and bearing weight more immediately due to the secure fixation of an allograft with a viable chondral surface. Postoperative instructions require the patient to remain non-weight bearing and utilize a brace until advised otherwise by the physician, usually for a month. Physical therapy commences a few days post-surgery, initially focusing on swelling control and range of motion restoration. After four weeks, the patient transitions to strengthening exercises. Compression, ice therapy, elevation, and transcutaneous electrical nerve stimulation (TENS) are common yet efficient ways to manage inflammation. Supervised rehabilitation addressing quadriceps control and proprioception along with core, hip, and ankle strength is required to enhance range of motion and weight-bearing. Six months post-surgery, the patient should report no pain and return to play is the main goal of the last stage of recovery. Higher impact activities are commonly postponed until postoperative months 8 to 10 while low-impact activities like cycling are usually favored from postoperative months 6 to 8. Before returning to competition, an athlete should exhibit complete strength, painless range of motion, and ligamentous stability.

Movement Sciences & Health

Vy Le

Protective Effects of Lactate on Parkinson's Disease

Co-Author(s): Beomsoo Ju

Faculty Mentor(s): Youngil Lee

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 9:00-10:00; Location: Conf Room AB

Presentation Time: 9:00-10:00; Poster #25

Parkinson's disease (PD) is a prominent neurodegenerative disease present in the elderly population. PD arises from the loss of dopaminergic neurons in the substantia nigra and basal ganglia, and it manifests primarily as motor dysfunction. Research has suggested that endurance exercise (EE) confers neuroprotection against PD. However, the molecular mechanisms of how EE helps against PD progression are unknown. Given that lactate has been strongly associated with maintaining normal neuron function and neuroprotection, and that exercising muscle tissue produces a significant amount of lactate, we hypothesized that lactate confers neuroprotection against PD. To investigate this hypothesis, SH-SY5Y

Movement Sciences & Health

Angelique Mallard

Exercise Perceptions of Older Adults Participating in an 8-week, Student-led Strength Training Program

Faculty Mentor(s): Amy Crawley

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Movement Sciences & Health

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #21

With the continued increase in America's aging population, there is a strong need for exercise programs that target older adults. Increased chance of multiple health conditions, physical injuries, and lack of structured exercise experience result in higher rates of sedentary behavior. To overcome barriers in participation, it is necessary to gain insights from the older adults' perspective. Purpose: The purpose of this research was to assess perceptions of exercise and changes in senior fitness testing (SFT) scores in older adults participating in an individualized, student-led, 2/d/wk, 8-week strength training program. Methods: A convergent research design was used to collect data from 26 participants (7 males, 19 females, age 60-89). Qualitative, ex-post facto data was collected from health history surveys and semi-structured, face-to-face interviews while quantitative data included one group pre/post assessments. A paired samples t-test was used to assess differences. Results: Thematic qualitative analysis found primary barriers to exercise included lack of motivation, existing conditions/poor health, and time constraints. The leading motivational reasons to participate were social engagement (with both students and other older adults), maintaining/increasing strength, and the importance of staying active. Significant improvements were found in almost all SFT measures (chair sit-to-stand, $p = .00$; arm curl, $p = > .00$; 2-minute step test, $p = .00$; chair sit-n-reach, $p = .02$; 8 foot up-n-go, $p = > .00$; 6-minute walk, $p = .00$) except for the back scratch test which did not change. Conclusions: The inclusion of a social component was the principal motivator and aligned with the participants' desire to be valued and of service. Pre/post SFT testing demonstrated an increase in aerobic performance, upper and lower body strength, lower body flexibility, and overall dynamic balance/agility. These findings can be used to support best practices when implementing exercise interventions with older adults.

Kendra Munkelt

Movement Sciences & Health

Idiopathic Plantar Plate Tear of a 17-year-Old High-School Football Player

Faculty Mentor(s): Chris Dake

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

Introduction The plantar plate is a ligamentous collection of tissue which connects to each toe. The function of the plantar plate is to retract the toes to the floor. During a plantar plate rupture, the toes can be pulled out of alignment resulting in conditions such as hammertoe or crossover toe. Background A 17-year-old male, high school junior football player presented with symptoms of an injury to the second metatarsal joint of the left foot. Differential Diagnosis Plantar plate rupture, Metatarsalgia, Morton's neuroma, Tenosynovitis, Stress fracture of the metatarsal, and Intermetatarsophalangeal bursitis Treatment Conservative treatments which include muscular rehabilitation, manual mobilization, and cold therapy. Treatment goals aim at regaining range of motion, strength in the extremity, and reducing pain. This is completed alongside using pharmacologic treatments such as NSAIDs and rehabilitation three times a week. Uniqueness Total acute tears in the plantar plate have an occurrence rate of less than 10%. Tears most commonly occur in the young athletic population, and between 60-90% of injury occurs at the 2nd MTP joint, 25% of the pressure

exerted through forefoot during the gait cycle is exerted on the 2nd MTP creating greater risk for rupture. The carbon fiber cleats could have impacted the integrity of the plantar surface by inducing micro trauma over an extended period of time. Conclusions Diagnostic tools for identifying plantar plate lesions are reliable and accurate, further research is recommended for nonoperative rehabilitation methods. Studies focus primarily on surgical treatments to correct this condition.

Briana Panter

Movement Sciences & Health

For patients diagnosed with a pituitary tumor producing symptoms, will medication intervention reduce symptoms without the need of surgical intervention?

Faculty Mentor(s): Kelley Henderson

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

During a clinical rotation, a patient who was 14 years old was diagnosed with a non-functioning pituitary microadenoma that produced symptoms. A non-functioning pituitary microadenoma is an unusual benign growth that has developed on the pituitary gland. Due to the symptoms the patient is having and her young age a question is proposed on if medication intervention alone will reduce symptoms without the need for surgical intervention. Results are still under review and will be displayed during the presentation.

Rickie Perry

Movement Sciences & Health

Axillary Nerve Dysfunction in Football Athletes

Faculty Mentor(s): Christopher Dake

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

The case study is of an athlete who is a linebacker who plays at a DII university who sustained injury during practice. While running a play, the athlete was running his assigned play a delivered a hit which is when the injury occurred. At once glance, it seemed like the athlete may have sustained an acute brachial pathology aka "stinger." This is an injury that could occur, but with time the sensation and neurological function will return. For this athlete, that wasn't the case. The athlete was taken back to the locker room to assess the possible injury. After a neurological screening, manual muscle test and a series of special tests, it was found that the teres minor and subscapularis were lacking neurological function. The athlete was sent to the physician's office for further assessment which consisted of X-rays, MRIs, EMG and nerve conduction study. The imaging did not show anything wrong to the brachial plexus, torn labrums, but it did show stenosis and two bulging discs, and the nerve conduction study showed there was no electrical activity in the teres minor and the subscapularis on the right side. With the lack neuromuscular function over an extend period of time, atrophy of the affected muscles will be begun to set in so there needs to be a catalyst for neuromuscular function so that the musculature can begin to be rebuilt.

Josh Pfnisel

Movement Sciences & Health

Effects of Blood Flow Restriction Training on Cardiovascular Benefits

Co-Author(s): Jamie Campbell

Faculty Mentor(s): Ludmila Cosio Lima

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; **Location:** Conf Room AB

Presentation Time: 1:00-2:00; **Poster #22**

Resistance training (RT) has long been recognized for its ability to enhance muscle mass and strength. Emerging evidence suggests its potential cardiovascular benefits, including the reduction of cardiovascular disease (CVD), morbidity, and mortality. While conventional RT protocols recommend high-intensity sessions, certain populations with physical limitations may not tolerate such intensity. Recent studies have shown that low-load RT combined with blood flow restriction (BFR) can elicit muscular benefits akin to those of high-intensity RT. However, the effects of passive involuntary muscle movement with BFR remain unexplored. This study aims to investigate whether passive involuntary muscle movement with BFR induces similar benefits to active voluntary RT with BFR. Specifically, we will examine the potential cardiovascular adaptations and enhancement of vascular endothelial functions induced by passive involuntary muscle movement. Our hypothesis is grounded in reported mechanisms of BFR-induced cardiac protection, which suggests this novel exercise modality may offer therapeutic potential for individuals unable to engage in active voluntary RT. This research not only contributes to our understanding of alternative exercise strategies but also holds promise for the development of tailored interventions for populations with physical limitations, ultimately promoting cardiovascular health and overall well-being. Due to pending Institutional Review Board (IRB) approval, we were not able to start participant recruitment or collect any data as of yet. Once approved, we will start collecting data to present at the symposium next month.

Brandon Seuzeneau

Movement Sciences & Health

Acute Rib Fracture and Subsequent Pneumothorax in a 17-year Old Football

Player: A Case Study

Faculty Mentor(s): Chris Dake

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; **Location:** Athens

The etiology of an acute pneumothorax can be classified as either traumatic or spontaneous. Regardless of mechanisms a pneumothorax occurs when air leaks out of a puncture in the lungs into the pleural space of the thoracic cavity. A 17 year old male high school linebacker presented on the sidelines after suffering blunt force trauma to the chest while participating in a Friday night game. He began experiencing a return of symptoms including sharp right-sided chest pain, difficulty breathing with exertion and a dry cough. Imaging revealed a pneumothorax and a hairline fracture of the rib over the site of the pneumothorax. Patient was seen immediately after in the ER and had a recorded 50% decrease in lung capacity on the right side. Patient was treated at the ER with supplemental oxygen and observation. He responded well to supplemental oxygen with significant increase in lung capacity over the course of receiving conservative treatment. More involved treatment would have involved chest tube placement and pleural space aspiration. Though rare in an athletic setting, traumatic pneumothorax can be a serious life-threatening injury for which the signs and symptoms should be well understood by Athletic Trainers who cover high impact

sports. In our case given the overall severity of the injury the patient had a one week rest period with a slow return to cardiovascular activity. Patient started with extended distance walking and progressed from there to jogging and eventually running. Distance and intensity was increased over a period of 2 weeks until he could return to practice with supplemental chest padding over the site of the injury.

Melea Stokes

Movement Sciences & Health

Male vs. Female Orthopedic Surgeons: Which Sex has Better Patient Morbidity and Mortality Rates Post-operation?

Faculty Mentor(s): Chris Dake

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; **Location:** Athens

New research focused on surgeon demographics reached national headlines in 2023 stating that the sex of the surgeon may translate into their patients' outcomes. With that said, males typically dominate the surgeon population, and especially the orthopedic surgeon demographics. With females representing an extremely small percentage of orthopedic surgeons, the aim of this presentation is to review the differences of post-surgical morbidity and mortality rates of patients treated by male or female orthopedic surgeons. *Results are still under review.*

Delaney Trushel

Movement Sciences & Health

Rehabilitation of Malunion Clavicle Fracture in High School Athlete

Faculty Mentor(s): Chris Dake

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; **Location:** Athens

A male high school athlete was playing football when he was tackled and quickly complained of shoulder pain. The athletic trainer performed an evaluation and noticed he had a decreased range of motion and a sense of weakness in the affected arm. After palpating the clavicular area and removing his football equipment, there was an obvious deformity on the mid-shaft of his clavicle. It was ruled as a closed clavicle fracture. The patient was given a sling and was referred to get an x-ray. The imaging confirmed the diagnosis. The patient followed a conservative treatment plan which resulted in a malunion to the area, resulting in a palpable bump on his collarbone. The clavicle is one of the most commonly fractured bones. This case was unique due to the malunion. Differential diagnoses include acromioclavicular joint injury, rib fracture, scapular fracture, shoulder dislocation, rotator cuff injury, and sternoclavicular injury. Rehabilitation for a clavicle injury varies based on severity. In this case, the fracture was treated conservatively. Other options include surgery. In weeks 1-2, the patient performs little movement and should wear a sling when moving because the fracture needs time to heal. In weeks 2-6, the patient begins minimal weight-bearing activities and starts a shoulder exercise program to strengthen the surrounding musculature. Once the injury heals, the patient performs more advanced exercises and gradually increases weight, frequency, repetitions, etc. Some exercises could be shoulder pendulums, shoulder flexion, and shoulder rotation. All exercises can be modified based on the patient's abilities/limitations. The patient increases weight in weeks 6-12 and implements active exercises. Some examples include

wall walk-ups, shoulder abduction, shoulder flexion/extension, and shoulder internal/external rotation. Again, all exercises can be modified by adding/taking away weight, using bands, utilizing isometric principles, etc. If patient can perform everyday movements without struggle and has regained full range of motion and strength, they can graduate from rehabilitation.

Aaliyah Tucker **Movement Sciences & Health**
Right Arm Complete Radioulnar Synostosis In An Adolescent High School Multi-Sport Athlete

Faculty Mentor(s): Christopher Dake

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

An 18-year-old female, high school cheerleader, volleyball, and lacrosse player was diagnosed with Complete Radioulnar Synostosis at the age of 13. Complete Radioulnar Synostosis is a rare complication, occurring after an injury to the elbow or forearm and can result in loss of motion or disability. At the age of 5, the patient had a right elbow accident on April 11, 2011. The result was a radial head fracture. The assessment at this time was contracture of the right elbow joint. The patient has had surgeries at Nemours and Sacred Heart Hospital to rebuild and repair the damage. Due to the trauma of the initial event, her radius and ulna have permanently fused into one bone in her arm and her radial head is permanently deformed. The two bones can not be cut apart due to her only having one bone marrow for the bones. It is highly likely she will be unable to ever pronate and supinate again. At the time of the original incident, the patient was treated by using closed manipulation. In 2014, synostosis removal took place. In 2019, treatment involved getting a CT scan to see if separation of the two bones would be possible. Separation of the bones would lead to the need of a microsurgical free flap between the radius and ulna. During this time, activity would not be limited. The later treatment plan was to not do anything. The patient lacked a cortex on the medial side, therefore, knowing how the procedure would result was not possible.

Savannah Weaver **Movement Sciences & Health**
Tibiofemoral Dislocation of a College Football Player: A Case Study

Faculty Mentor(s): Christopher Dake

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

The tibiofemoral, or knee, joint is composed of 6 ligamentous and cartilaginous structures along with several muscles and tendons (Henrichs, 2004). Knee dislocations are a rare and traumatic injury that can be limb threatening due to the potential neurovascular damage associated with the injury (Henrichs, 2004). However, the literature is lacking in information on the incidence, ligament injury patterns, associated injuries and injury mechanisms of knee dislocations (Moatshe et al., 2017). This athlete in this case study was playing wide receiver on scout team when the football players knee received an extreme varus stress. The dislocation self-reduced and he staggered off the field with the help of a teammate. He reported to the athletic trainer that he felt a “pop” and his knee felt like it hyperextended. He did not report any pain in his knee. The Athletic trainer

made him an appointment with the team physician the next morning. The team physician ordered an emergency CT and MRI which showed no neurovascular compromise but indicated a sprain of the anterior cruciate ligament, lateral collateral ligament, posterior cruciate ligament, and posterior lateral corner and a strain of the popliteal tendon and biceps femoris tendon. Two weeks later he went in for a full knee reconstruction provided by the team surgeon and one other surgeon that specializes in multi-ligament knee repairs. After an injury this extensive rehabilitation is imperative for full recovery. Rehabilitation will begin very slowly and progress as the injury progresses through the healing process.

Olivia Weeks **Movement Sciences & Health**
For college aged female athletes how would the use of oral contraceptives impact sport related injuries compared to athletes who do not use affect their outcome?

Faculty Mentor(s): Kelley Henderson

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

This presentation will answer for college-aged female athletes the effects of their outcome in sports injuries with or without the use of oral contraceptives. I chose this critically appraised topic from personal experience. Also, I believe there has not been enough light shown to this subject in female athletes who use oral contraceptives and the side effects they would possibly endure while being a college athlete. The results of this critically appraised topic are still under review.

Mackenzie Williams **Movement Sciences & Health**
Acetabular Labrum Tear Found After Initial Anterior Superior Iliac Spine Avulsion Fracture Diagnosis in a High School Football Player

Faculty Mentor(s): Christopher Dake

Lead Author Classification: UWF Graduate Student

Session: Movement Sciences MSAT Session

Session Time: 1:00-3:00; Location: Athens

The patient was a 15-year-old male, high school football player that presented with a mechanism of injury and symptoms of pain consistent with a hip flexor strain. After evaluation from the team doctor, it was confirmed that he was suffering from an avulsion fracture to the anterior superior iliac spine. The patient was treated with medication and physical therapy, however, when the pain would not subside, he was sent to the doctor for additional imaging. The MRI revealed a tear in the anterior acetabular labrum of the hip that required arthroscopic surgery. Upon repair to the labrum during surgery, it was also discovered that he had also torn his ligamentum teres. In standard practice, an incision is made to the anterolateral and mid-anterior portion of the hip to access the joint. During surgery, different tools are utilized to expose the joint capsule and tie sutures that anchor the labrum back down. Following surgery, the patient requires a rehabilitation protocol that relies heavily on physical therapy and that is individualized to them. For the first 4 weeks, the protocol is partial weightbearing with an assistive device and focuses on restoring range of motion. For weeks 4 to 6, the patient should have a normalized gait without a device and the protocol will focus on strengthening. From weeks 7 to 12, the rehabilitation protocol will shift towards adding elements of balance, coordination, and

proprioception. After 12 weeks, the patient can begin to incorporate sport specific activities for preparation of return to activity.

Hannah Winn **Movement Sciences & Health**
Anconeus Epitrochlearis Muscle Causing Ulnar Entrapment in a High School Year-Round Athlete

Faculty Mentor(s): Christopher Dake
Lead Author Classification: UWF Graduate Student
Session: Movement Sciences MSAT Session
Session Time: 1:00-3:00; Location: Athens

The study that is being presented is based on a rare muscle the anconeus epitrochlearis that when inflamed can lead to ulnar nerve entrapment. The anconeus epitrochlearis muscle is present in only 15% of the human population. Through ultrasound, the anconeus epitrochlearis muscle can be determined. My patient is a 17 year old, high school baseball pitcher. He stated that the act of throwing would irritate his elbow and cause ulnar neuropathy. Due to the inflammation of this accessory muscle and ulnar nerve entrapment, the anconeus epitrochlearis is surgically removed and an ulnar nerve transposition takes place. Based on the surgery and recovery time it takes on average 3 to 6 months. Following surgery, the patient will be in an elbow brace for the first 4 to 6 weeks. During this time the Protection phase has started from week 0 to 4. The main goals during this phase are to allow healing, restrict range of motion, and decrease pain and inflammation. The patient will do exercises for grip strength, and wrist ROM. The Intermediate phase 1 Month. This phase consists of gradually re-establishing ROM, increasing strength, and improving neuromuscular control. Performing flexibility exercises, strengthening exercises, and light sport activities. Once the patient has achieved the previous goals moving up to the Dynamic strengthening phase 2 to 3 months the goals for this phase are to maintain / progress to full ROM, improve strength, power, and endurance. After they have completed the phases the athlete can start their throwing program.



SCHOOL OF NURSING

Kathy Andresen **Nursing**
Interprofessional Collaborative Project for Online Nursing Students

Co-Author(s): Mariah Morris, Erin King
Lead Author Classification: UWF Faculty
Session: Faculty HIP Showcase Session
Session Time: 8:00-9:00
Location: Zoom (<https://uwf.zoom.us/meeting/88495534775>)
Presentation Time: 8:00-9:00

This presentation showcases a Common Intellectual Experience (CIE) that has been implemented within 5 asynchronous online courses. Presenters will discuss strategies for implementation of this CIE within several courses, focusing on video case studies that portray an individual client with various contemporary health issues.

Collin Groundwater **Nursing**
The effects food insecurity on perinatal period of women in North West Florida
Co-Author(s): Claudia Li, Hayley A. Smith, Ameila Atchinson, Collette Davis,

Karishma Chhabria
Faculty Mentor(s): Cynthia Smith Peters
Lead Author Classification: UWF Undergraduate Student
Session: Main Poster Session
Session Time: 9:00-10:00; Location: Conf Room AB
Presentation Time: 9:00-10:00; Poster #26

The literature demonstrates a correlation between food insecurity and risks for poor health during the perinatal period. If healthy dietary choices are not available, the pregnant woman may choose poor dietary choices, which lead to poor health. Themes such as housing instability, employment problems, and poor economics may lead to poor food insecurity. Poor health during the perinatal period may lead to compounding effects, such as unstable pregnancies, and poor birth outcomes (McKay, Spiteri, & Zinga, 2022). This research project will assess the barriers that women in NorthWest Florida face during pregnancy concerning food security. The objective of this study is to understand the impact of food insecurity on mental health during the perinatal period in Northwest Florida. McKay, F.H., Spiteri, S., Zinga, J. et al. Systematic Review of Interventions Addressing Food Insecurity in Pregnant Women and New Mothers. *Curr Nutr Rep* 11, 486-499 (2022). <https://doi.org/10.1007/s13668-022-00418-z>

Laura Meredith **Nursing**
Covid-19 Vaccine Hesitancy
Faculty Mentor(s): Jacqueline Thomas
Lead Author Classification: UWF Undergraduate Student
Session: Main Poster Session
Session Time: 9:00-10:00; Location: Conf Room AB
Presentation Time: 9:00-10:00; Poster #27

The world was faced with an unexpected public health crisis when the WHO declared COVID-19 a pandemic in March 2020. Hospitals reached their maximum capacity quickly as the virus affected numerous people. Daily routines changed and people were dying in record numbers. Public health officials such as the WHO and CDC began creating strategies to mitigate this deadly virus through social distancing, mask-wearing, and quarantining at home. In the meantime, a vaccine was being created with hopes of herd immunity. Once the vaccine became available, vaccine hesitancy existed, and people had various beliefs about taking the vaccine for COVID-19, even if they had received vaccines for other potential diseases in the past. This research study aims to examine factors influencing the hesitancy of COVID-19 vaccine uptake in combination with the Health Belief Model, which explores how cultural beliefs and health-directed behaviors influence attitudes toward vaccination. A literature review was conducted in three databases, CINAHL, PsychNet, and Medline, to better understand vaccine hesitancy between January 2022 and February 2024. We found 44 articles that support our research question.

DEPARTMENT OF PSYCHOLOGY

Hudson Barthes **Psychology**
Insights into Work Engagement: Exploring Sensory, ADHD, and ASD Correlations

Faculty Mentor(s): Vanessa Rainey
Lead Author Classification: UWF Graduate Student
Session: Main Poster Session
Session Time: 12:00-1:00; **Location:** Conf Room AB
Presentation Time: 12:00-1:00; **Poster #23**

Previous research has indicated positive relationships between sensory processing and burnout, but the links between sensory processing and work engagement, the conceptual opposite of burnout, have yet to be explored. In part due to atypical sensory processing, neurodivergent individuals have been excluded from the labor market. A survey consisting of the Adolescent/Adult Sensory Profile, Autism Quotient (Adult), Adult ADHD Self-Report Scale (ASRS-v1.1), and Utrecht Work Engagement Scale was dispersed through multiple outlets. Notable correlations were found between various sensory processing patterns, ADHD symptomology, Autism spectrum disorder symptomology, and work engagement. Implications, limitations, and future directions are discussed. Together, these findings pave the way for a future of inclusive workplaces to meet the growing population of neurodiverse workers.

Lisa Blalock Psychology
A CURE for the Science of Learning

Student Participants: See below
Faculty Mentor(s): Lisa Blalock
Session: See below
Session Time: 12:00-1:00; **Location:** See below

In this CURE, students worked in small groups to conduct a research project based on a central shared question: how do we learn new information? Over the course of the semester, students completed a theory-driven research project that either asked a novel research question or replicated an empirical study related to the science of learning and memory.

Individual posters and authors included in these course presentations are:

Layla Bass and Kiera Wrobel
Comparing the Effects of Video vs. Virtual Text Studying Materials on Retention
Session: Virtual Presentation
Location: Gather Town; **Presentation Time:** 12:00-1:00; **Poster #55**

Luke DeGraff and Rowe Elmore
The Impact of Mindfulness on Choice Go/No-go Performance
Session: Main Poster Session
Location: Conf Room AB; **Presentation Time:** 12:00-1:00; **Poster #28**

Will Ezeogu and Johnathan Hendren
How Does Job Satisfaction Correlate with Cognitive Flexibility?
Session: Virtual Presentation
Location: Gather Town; **Presentation Time:** 12:00-1:00; **Poster #56**

Nia Parker, Ally Payne, and Chloe Waterhouse
Interleaving vs. Blocking When Studying Geographical Regions
Session: Main Poster Session
Location: Conf Room AB; **Presentation Time:** 12:00-1:00; **Poster #26**

Saman Habib, Angelina Santos, and Sarah Schroeder
Comparing the Effect of Retrieval Practice on Neurotypical Students to Neurodivergent Student
Session: Main Poster Session
Location: Conf Room AB; **Presentation Time:** 12:00-1:00; **Poster #27**

Elizabeth Black Psychology

Sensory Processing Differences in Autism Spectrum Disorder
Co-Author(s): Ashley Martin, Emma Folk, James Arruda
Faculty Mentor(s): Vanessa Rainey
Lead Author Classification: UWF Undergraduate Student
Session: Main Poster Session
Session Time: 12:00-1:00; **Location:** Conf Room AB
Presentation Time: 12:00-1:00; **Poster #24**

The current study examined differences in sensory processing in people with autism spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD), and neurotypical individuals. People with ASD are often sensitive to environmental influences such as bright lights, loud sounds, background noises, or tactile feelings. Recent studies (e.g., Fabio et al., 2024) have identified that people with ADHD have similar sensory-processing issues. Investigations to determine the reason behind these sensory issues point to sensory gating problems (Schouder & Bennetto, 2016; Siper et al., 2016). Visual evoked potentials measured with electroencephalography (EEG) offer a way to measure sensory arousal in the cortex, giving information about when stimuli are initially processed (Aunon & Keirn, 1990). Participants were exposed to five conditions of blue light and were asked to complete the Adolescent/Adult Sensory Profile (AASP) questionnaire, a measurement of sensory processing patterns (Brown & Dunn, 2002). The study has a total of 12 typically developing participants (M = 8.4, SD = 2.1), eight participants with ADHD (M = 5.8, SD = 1.8), and seven with ASD (M = 5.2, SD = 2.5). Results of one-way repeated measures analysis of variance (ANOVA) showed that there was a significant main effect of diagnosis on amplitude $F(1, 25) = 12.01, p = .002$. Amplitudes of participants with ADHD and autism were found to be significantly different from amplitudes of neurotypical participants but the amplitude behavior was significantly different from each other. This indicates that although participants with ADHD and ASD both have abnormal sensory processing patterns, the manifestation of this differs between groups.

Jessica Croley Psychology

The Missing Puzzle Piece: Raising Children with Siblings Who Have ASD
Co-Author(s): Trinity Dean
Faculty Mentor(s): Vanessa Rainey
Lead Author Classification: UWF Undergraduate Student
Session: Main Poster Session
Session Time: 2:00-3:00; **Location:** Conf Room AB
Presentation Time: 2:00-3:00; **Poster #28**

Laura Green's (2013) "The Well-Being of Siblings of Individuals with Autism" concludes that despite quantitative research indicating that siblings without ASD may indicate normal and expected behavior, qualitative research indicates the opposite: "these siblings may be behaving and coping well, while internally facing turmoil" (6). This article indicates that there is not only a lack of research

in this area, but it also indicates an opportunity for intervention, which is where “The Missing Puzzle Piece: Raising Children with Siblings Who Have ASD” comes in. Specifically, we have created a pamphlet with activities to help parents foster both empathy and understanding between the child without ASD and the child with ASD as well as the child without ASD and the parents. Furthermore, we are grounding our research in Vygotsky’s sociocultural theory to back the activities.

Emma Folk **Psychology**
Magnitude Estimations and Perceptual Brightness Using Colored Strobe Flashes

Co-Author(s): Sally Ibrahim, Aaron Wade

Faculty Mentor(s): James Arruda

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #25

This study runs parallel to the Flash Visual Evoked Potential P2 Luminance investigation led by Dr. James Arruda, aiming to identify a biomarker for Mild Cognitive Impairment or Alzheimer’s Dementia. Following the EEG portion, participants return for psychophysical assessments. This distinct study focuses on perceived brightness differences using a strobe flash with white, black, and blue filters at various intensities. Utilizing magnitude estimation, a psychophysical measure, participants will encounter five intensity levels labeled 1 through 5 for each filter color. These intensities range from 1.375 to 22 lumens per square foot. The third intensity serves as a constant reference for comparison. Participants will assign arbitrary numbers to rate brightness, validating prior research. For instance, the first intensity corresponds to 25, the second to 50, the third to 100, the fourth to 200, and the fifth to 400. Participants, experiencing a constant flash at 5.5 lumens, compare the perceived brightness of all intensities against it. They indicate whether the tested intensity matches the constant, using the assigned numbers. Hypothesized outcomes suggest a ceiling effect for white light with increasing intensity, mirroring EEG findings. This study will examine the compression curve, anticipated to align with EEG Flash Visual Evoked Potential P2 results.

Madison Hagler **Psychology**
Developing an Innovative Mobile Application for Training Situation Awareness in Health Care Workers

Co-Author(s): Min Allen, Tristan Byrd, David Huson, Dr. Thomas Reichherzer

Faculty Mentor(s): Steven Kass

Lead Author Classification: UWF Graduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #26

In healthcare, maintaining situational awareness (SA) is crucial for nurses to ensure safe and high-quality care. However, traditional SA training methods are often constrained by resources and staffing shortages. MEDUSA (Mobile Environment for Developing User Situation Awareness) addresses this challenge by providing accessible, cost-effective SA training for nurses. MEDUSA consists of an instructor portal and mobile app. The app offers various patient scenarios where the user can assess patient vitals, ask questions, administer treatment, and add notes to their

chart. These scenarios incorporate the Situation Awareness Global Assessment Technique (SAGAT), the recognized best approach for measuring SA. SAGAT assesses the user’s perception of relevant information, comprehension of the situation, and projection of what could happen next (SA levels one through three). Our involvement in MEDUSA’s development includes scenario creation, bug testing, and enhancement recommendations. We also utilize OpenAI’s ChatGPT to create patient scenarios and CTGAN (Conditional Tabular Generative Adversarial Network) for generating realistic virtual patient vitals. We collaborated with subject matter experts to refine scenarios. The goal is to refine 10-15 scenarios for an efficacy study measuring MEDUSA’s impact on nurses’ SA. Nursing students practice SA with virtual patients throughout the semester and are tested in a controlled environment at the Nursing Skills & Simulation Lab.

Angelique Jefferson **Psychology**
Neurophysiological Alpha Wave Entrainment in the Flash Visual Evoked Potential P2

Co-Author(s): Nadia Mrahi

Faculty Mentor(s): James Arruda

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #27

Alzheimer’s dementia (AD) is a prevalent condition that is neurodegenerative and causes symptoms of memory loss, behavior changes, delusion, and ultimately death. The disease is defined by the accumulation of beta-amyloid plaques outside of neurons and neurofibrillary tau tangles inside neurons followed by damage and destruction to the neurons. Currently the detection of AD and amnesic mild cognitive impairment (aMCI), which is a precursor for AD, is limited to in vivo or postmortem; therefore, the need for an accurate and reliable biomarker to detect aMCI and AD is ever present. The flash visual evoked potential P2 (FVEP-P2) is a component of an electroencephalogram waveform that is produced in the human visual system in response to a strobe flash. More importantly, the latency of the FVEP-P2 has proven to be sensitive and specific to the neuropathological changes associated with Alzheimer’s dementia. Unfortunately, the FVEP-P2 latency remains too variable for the measure to be used clinically. A source of variability may be the entrainment effect of alpha waves becoming time-locked to a presented stimulus. Due to the FVEP-P2 being obtained by signal averaging time-locked EEG data, the entrainment of alpha waves does not allow the FVEP-P2 to be used as a diagnostic tool because of the systematic measurement error it contributes to the average waveform. The purpose of this study is to demonstrate the entrainment of alpha to a strobe flash, with the goal of lowering the systematic measurement error associated with alpha entrainment from the FVEP waveform.

Jacob Jones **Psychology**
Temperament as a Predictor of Private Speech in the Preschool Years

Co-Author(s): Kameron Andrews

Faculty Mentor(s): Kimberly Day

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #22

Temperament as a Predictor of Private Speech in the Preschool Years CEPO Conference 2024 Abstract INTRODUCTION: Private speech, a self-regulatory form of nonsocial speech that helps coordinate thought and action planning, is an influential dimension of child development (Winsler, 2009). As discussed in Day and Smith (2019), some forms of private speech are believed to be associated with better self-regulation and other forms are believed to be associated with poorer self-regulation. Research supports that temperament and language development mature in similar regions of the brain (Bell & Wolfe, 2004). Temperament is an individual's biological degree of reactivity and regulation. Effortful control, an aspect of temperament, is related to private speech usage (Day, Tan, & Smith, 2023) and temperamental anger is associated with private speech (Whedon et al., 2021). We hypothesized that children's temperament would be associated with their private speech. METHODS: Private speech was transcribed and divided into utterances (Manning et al., 1994; Winsler et al., 2003; Winsler et al., 2011). Each utterance was labeled as either vocalization (noises that were not actual words), inaudible muttering (appeared to be words but were mumbled), task-irrelevant private speech (unrelated to the task at hand), negatively valenced task-relevant (related to the task but stopped efforts), or facilitative task-relevant (related to the task but did not stop efforts). Temperament was measured using parent report with the Child Behavior Questionnaire - Short Form (Putnam & Rothbart, 2006). Scales of effortful control (i.e., inhibitory control, attentional control, low intensity pleasure, and perceptual sensitivity), negative emotion (i.e., sadness, fear, anger/frustration, discomfort, and low levels of soothability), and surgency/extraversion (i.e., impulsivity, high intensity pleasure, activity level, and low levels of shyness) will be used in analyses. RESULTS: Pearson correlations were run to examine the associations between children's temperament and private speech. A significant association was found between inaudible muttering and surgency, partially supporting our hypothesis. DISCUSSION: The purpose of this study is to provide additional evidence supporting the codependent nature of cognitive and emotional processes, as well as offer context for preschool-aged children's overt regulation strategies. Future research should replicate with a larger, more diverse sample size.

Zoe McCurdy

Psychology

Rehabilitation or Ruse? Exploring "Shame-Based" CBT for Domestically Violent Offenders

Faculty Mentor(s): Jane Halonen

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #29

Rehabilitative programs for incarcerated individuals have been defined by the ever popular cognitive behavioral therapy (CBT) approach, being the most commonplace treatment method as of recent years. The focus in past years has been on recovery programs for domestic violence victims, with little consideration regarding the potential of rehabilitation programs for offenders. Regarding the American prison system, recidivism rates among offenders with a history of domestic violence has been at the forefront of reform debates, with an emphasis on psychological assessments and psychobehavioral treatments. Since

the rise in popularity of positive psychology and identity topics, the potential for "Shame-Based" CBT appears promising for rehabilitative purposes, though the analyses of such experimental programs have been disconnected from one another up until now. However, it is underdeveloped, considering the number of similar approaches with various monikers and the lack of an exhaustive analysis of its efficacy and effects on the population of concern. The present study aims to conclusively determine the efficacy of "Shame-Based" CBT, with the subsequent foci including the efficacy in comparison to standard group CBT for the population of interest, relationships to recidivism rates within American detention facilities, historical connotations and psychological principles that are relevant to the development and implementation of "Shame-Based" CBT through an extensive meta-analysis. Keywords: Cognitive Behavioral Therapy, domestic violence, shame, rehabilitative interventions, recidivism

Landon Nelson

Psychology

To TA or Not to TA: Student Perceptions of the Undergraduate Teaching Experience

Co-Author(s): Elizabeth Black, Brooke Simila

Faculty Mentor(s): Jane Halonen

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #30

The use of undergraduate teaching assistants has become fairly common as a strategy for helping faculty accomplish more objectives in their classrooms. However, the impact of serving as an undergraduate teaching assistant (UTA) has not yet been well established. A substantial amount of research on UTA use transpired in the 1970s and 80s. In addition, researchers appeared to pay more attention to the nature and function of graduate teaching assistants. In the current research, past UTAs at a regional comprehensive university context were surveyed to identify the various activities that comprised their assignments as well as the short and long-term impacts of their service. Participants were recruited from a pool of past UTAs who serve in the regional comprehensive university's psychology department over the past six years. This study is parallel to a separate study capturing faculty perceptions on the use of UTAs. The findings call forth a discussion regarding the TA role in determining students' career paths and academic skills. The research concludes with recommendations from the student perspective regarding how the UTA experience can be improved.

Lamb Ngafeeson

Psychology

Sensory Sensitivities in the Classroom: Assessing the Link Between Sensory Profiles and Executive Functioning

Co-Author(s): Hudson Barthes, Nicholas Fenger

Faculty Mentor(s): Vanessa Rainey

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 2:00-3:00; Location: Conf Room AB

Presentation Time: 2:00-3:00; Poster #29

The current study examined the links between sensory processing and executive functioning in college students. Sensory processing issues encompass the

depletion and/or over-stimulation of the body's sensory facilities. Recent research has begun digging further into the relationship between sensory processing and executive functions (e.g., Engel-Yeger & Rosenblum, 2021; Fernandez-Prieto et al., 2021; Li et al., 2021; Pastor-Cerezuela et al., 2020; Sharfi et al., 2022), but no research has examined these sensory profiles in young adults, particularly concerning executive function skills that could impact academic performance. In total, 169 participants (M age = 21.8 years, SD = 5.67; 28.4% men, 68% women, 3.6% other) were recruited from a university campus. The Adolescent/Adult Sensory Profile (AASP; Brown & Dunn, 2002) was employed to assess the sensory profiles (quadrants: low registration, $\alpha = 0.82$; sensation seeking, $\alpha = 0.79$; sensory sensitivity, $\alpha = 0.81$; sensation avoiding, $\alpha = 0.66$). To measure executive function skills, the Comprehensive Executive Function Inventory (CEFI-Adult; Naglieri & Goldstein, 2013) was used. Ultimately, about 16% of the sample showed higher-than-average scores in low registration. Additionally, about 18% showed higher-than-average scores in sensory sensitivity. The low registration scores were most predictive of executive functioning deficits overall. Both the low registration and sensory sensitivity scores predicted lower attention scores. For students exhibiting increased sensory sensitivities, the data showed deficits in emotional regulation. In conclusion, these findings reveal significant differences in the sensory experiences of college students, emphasizing the need for a framework to support all students in the classroom.

Autumn Savage

Psychology

The Effects of Media Use on Externalizing and Internalizing Behaviors in Children

Faculty Mentor(s): Kimberly Day

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #28

Technology has become a staple in most homes in the form of tablets, smartphones, and televisions (Domoff et al., 2020; Neville et al., 2021). As a result of this saturation, children are exposed to various types of media through a variety of devices for increasing amounts of time every day (Domoff et al., 2020). Research has shown that higher levels of screen time and media consumption are associated with higher levels of child problem behaviors, such as externalizing and internalizing behaviors (Neville et al., 2021). Externalizing behaviors are those which are directed toward social situations and may manifest as aggression, impulsivity, or defiance, while internalizing behaviors are those which are directed toward the individual and may manifest as social withdrawal, depression, and anxiety (as cited in Gresham & Kern, 2004). This study seeks to further understand the associations between media use and children's externalizing and internalizing behaviors; we hypothesize that higher levels in overall media consumption will be associated with higher levels of externalizing and internalizing behaviors in children. The study was IRB approved and data collection is complete, correlational analyses will be run to identify associations. Participants were 300 U.S. based mothers with children between the ages of 3 and 7. Mothers were recruited through Prolific, an online research platform, and completed a 45-minute online Qualtrics survey that included measures for child

media use (Hinkley et al., 2014) and externalizing and internalizing behaviors (Strengths and Difficulties Questionnaire; Goodman, 1997).

Amanda Schraer

Psychology

Personality and Frustrated Driving Behaviors

Co-Author(s): Lonneke Pottinga, Sarianna Thomas, Emma Harrington, Alexander Ortega, Kat McCabe

Faculty Mentor(s): Steven Kass

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #27

In the first half of 2023, an estimated 19,515 people died of motor vehicle crashes (NHTSA, 2023). Deffenbacher et al., (2003) found anger behind the wheel could predict risky and unsafe driving behaviors. Being in an elevated emotional state may make it more likely to drive recklessly. The majority of driving programs do not take into consideration how emotions and personality affect a driver's behavior. This study will examine the impact of personality as it relates to aggressive driving. What will be assessed is a moderating relationship between personality and characteristics of aggressive driving. The personality inventory being used will be the Big Five. The Big Five consists of: Openness to Experience, Conscientiousness, Extroversion, Agreeableness, and Neuroticism. Participants will be randomly assigned to a frustration-inducing condition (i.e., an impossible driver exam) or a control condition. These drivers will then use a high-traffic driving simulator to monitor their behavior. The simulator will record risky and aggressive driving behaviors. These monitored behaviors will include some of the following: speeding, staying in lane, and running stop signs or lights. To assess the moods of these drivers, we will administer a version of PANAS (Positive and Negative Affect Scale). In addition, DDDI (Dual Dangerous Driving Index) will be administered as a self-report of unsafe driving. We expect that frustrated drivers' aggressive behavior will be moderated by personality type. This relationship could be considered valuable for future preventative programs. References Deffenbacher, J. L., Deffenbacher, D. M., Lynch, R. S., & Richards, T. L. (2003). Anger, aggression, and risky behavior: a comparison of high and low anger drivers. *Behaviour Research and Therapy*, 41(6), 701-718. [https://doi.org/10.1016/S0005-7967\(02\)00046-3](https://doi.org/10.1016/S0005-7967(02)00046-3) National Highway Traffic Safety Administration. (2023). Early estimate of motor vehicle traffic fatalities for the first half (January-June) of 2023. DOT HS, 813, 514. <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813514#:~:text=A%20statistical%20projection%20of%20traffic,as%20shown%20in%20Table%201.>

Lyndsey Steffen

Psychology

Stop It's Task Time

Co-Author(s): AvaGrace Robbins, Owen Wright

Faculty Mentor(s): Vanessa Rainey

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #25

Since the outbreak of Covid-19, technology use has been on the rise, especially

in preschool aged children. Screen time addiction and its negative effects have increased due to this rise. Passive screen time (watching videos/Netflix/tv/etc.) has been shown to be the most detrimental of the screen time types with active screen time (interacting with the screen in some way or form) having many benefits. Our project was designed to combat the negative effects of passive screen time in preschoolers by using a program app that acts as an ad blocker that locks the screen with a popup after a certain amount of time watching videos. This popup has an interactive task (solve a puzzle, tell the AI a story, do a certain number of exercises, etc.) that will be read out loud by an interactive AI (Artificial Intelligence) character that will also give hints to the child if they are struggling with a task. This task must be completed or have the time elapsed in order to continue watching videos. By interacting with the task and the AI character the preschoolers will gain the benefits of active screen time. Not all screen time is created equal, and we can use the benefits of active screen time to alleviate the negative effects of passive screen time in preschoolers.



Jocelyn Evans

Kugelman Honors

Tracing the Footsteps of Lincoln and Learning About Ourselves Along the Way
Student Participants: Maggie Brown, Emma Dukes, Aniya Harris, Nika Joseph, Bradley Love, Nicolas McCloskey, Desi McQueen, Liberty Moench, and Christina Monroig

Faculty Mentor(s): Jocelyn Evans

Session: Panel Discussion

Session Time: 10:00-11:00; **Location:** Great Hall

Kugelman Honors students took a 10-day trip over Spring Break 2024 to trace the footsteps of Abraham Lincoln. A set of common readings prepared students to critically analyze monumental spaces, making meaning of them individually and evaluating their significance comparatively. The trip itself exposed students to the rich history and profound impact of Abraham Lincoln as we visited the historical sites, museums, and monuments that commemorate his life and legacy. From the humble beginnings in Springfield, where he launched his political career, to the towering memorials in the nation's capital, this trip provided an immersive exploration of the 16th President's enduring influence on our nation. Students who took advantage of this alternative spring break share what they learned from the trip about Lincoln, about themselves, and about the value of study away and experiential learning.

Elizabeth Royappa

Honors

Nothing is More Punk Rock than Healthy Love

Faculty Mentor(s): Heather Riddell

Lead Author Classification: UWF Undergraduate Student

Session: Main Oral Presenters

Session Time: 12:15-1:15; **Location:** Great Hall

Presentation Time: 12:15PM

Pensacola has long been a hotbed for budding punk-rock artists, and the present day is no exception. Post-pandemic, small bands playing venues like Subculture and The Handlebar regularly draw large crowds of mostly young adult attendees. In contrast, fundraiser events held by the FavorHouse of NWFL (a local center for domestic violence survivors) attract established citizens who tend to be middle-aged and older. According to the National Domestic Violence Hotline webpage, intimate partner violence (IPV) is most prevalent among women ages 18 to 24. Therefore, Pensacola's young adult population must be made increasingly aware of the FavorHouse's resources and empowered to further the center's mission. On April 19 at The Handlebar, a punk-rock concert benefiting FavorHouse will bridge the gap between college-age showgoers and the typical attendees of upscale fundraisers. Several local food and craft vendors will be present throughout the night, and posters hung around the venue will educate attendees about the warning signs of domestic violence. The planning process for this event has been informed by existing literature on DIY and punk communities; poverty and IPV; social capital; and arts-based community building.

Alexa Schlobohm

Honors

Low-Dose Psilocybin for Mental Disorders: A Pharmacological and Systematic Review

Faculty Mentor(s): Rodney Guttmann

Lead Author Classification: UWF Undergraduate Student

Session: Main Poster Session

Session Time: 11:00-12:00; **Location:** Conf Room AB

Presentation Time: 11:00-12:00; **Poster #23**

Psychedelic substances, while known to evoke euphoric feelings and experiences, are thought to be effective in treating cognitive and behavioral disorders. More recently, microdosing psychedelics has been a topic of interest that is different from traditional dosing. Microdosing is the practice of taking a low, sub-euphoric dose of a psychedelic substance and is reported to have positive effects on creativity, cognition, and mental health. While psychedelic research has increased greatly, the vast majority of data is focused on moderate to high dosing regimens. Psilocybin has been a psychedelic of interest in neuropsychiatric research in the last five years. Studies have shown that low dosing of psilocybin may be effective in treating mental disorders, but more quality, reviewed data is needed. The social concept of microdosing is not scientifically sound enough to produce meaningful research and may be contributing to the topic's lack of study. Low-dose psilocybin must be investigated to move the needle and push psychedelic research forward.

Gregory Tomso

Honors

The Role of Polemical Discomfort in Site-Based Experiential Learning

Co-Author(s): Jocelyn Evans, Lexi Miller

Lead Author Classification: UWF Faculty Member

Session: Faculty HIP Showcase Presentations

Session Time: 8:00-9:00

Location: Zoom (<https://uwf.zoom.us/meeting/8849553477>)

Presentation Time: 8:00-9:00

The conservative movement at the state level is increasingly targeting higher education with claims of indoctrination and brainwashing. In particular, state governments are banning critical race theory, identity politics, and structuralist arguments aimed at increasing societal sensitivity to and efforts to improve diversity, equity, and inclusion. This study actually experiments with critical reflection practices to determine whether such claims are warranted. We critically interrogate the pedagogy of a first-year honors experience at a public institution in Florida focused on diversity, equity, and inclusion through a trip to the Legacy Museum and National Memorial to Peace and Justice in Montgomery, Alabama. Our previous findings from the quantitative survey data suggest that the overall experience of visiting a polemic space does significantly shape student perspective on questions of race and society (Evans, Tomso, and Owusu Daaku 2023). In this piece, we explore the qualitative survey data to understand the dynamics of critical reasoning by students when confronted with difficult and potentially uncomfortable artifacts in a history museum on the lasting legacy of racial terror in America. Preliminary analysis suggests that exposure to polemical spaces and/or arguments concerning history might not matter in the ways suspected by conservative lawmakers. We interrogate the data to understand whether students perceive bias, whether or not they feel discomfort, and whether or not they assume white guilt.



UNIVERSITY LIBRARIES

Michelle Finley

Library

The Changing Landscape of Academic Library Hiring: A Systematic Review of Research from 2000-2022

Co-Author(s): Dr. Christopher Levesque, Bianca Jimmerson

Lead Author Classification: UWF Faculty Member

Session: Main Oral Presenters

Session Time: 10:45-12:15; **Location:** Olympia (rm 272)

Presentation Time: 11:30AM

A systematic review of trends in academic library hiring was conducted using literature from library and information science and broader disciplines over the past twenty-two years in the United States. The review aimed to identify growth in interest in hiring practices and discuss the need for more academic research on hiring practices. While searches initially produced 1,142 results on academic hiring in library environments, the researchers could only find 49 results that addressed hiring practices in higher education related to their specific parameters.



OFFICE OF UNDERGRADUATE RESEARCH

Francesca Brasfield

Office of Undergraduate Research

Heart on My Sleeves: A Mixed Media Exploration of Emotions

Faculty Mentor(s): Emily Harris

Lead Author Classification: UWF Undergraduate Student

Session: Visual Art Exhibit

Session Time: 11:00-1:00; **Location:** Conference Room C

Presentation Time: 11:00-1:00

Heart on My Sleeves: A Mixed Media Exploration of Emotions is a project that combines both poetry and art in order to better convey my personal experiences as someone who experiences emotions and life very intensely, sometimes to my own detriment. Each work starts off with a poem that is written first and then a digital art piece done in the program Krita. I often find myself feeling things in extremes. I've always felt very connected to phrases such as 'bleeding heart' and 'wearing your heart on your sleeve'. Even as a child, I would find myself forming intense friendships only to be devastated by the end of those same friendships. It is through poetry that I've found a way to put these experiences into words. It is through my poetry and art that I aim to explore how these tendencies both sometimes harm as well as help me forge connections I wouldn't trade for the world. I am drawn to very visceral and visual language in my writing, finding it allows me to better convey the true extent of what I'm feeling. By pairing poetry with visual art, it allows me to better create the same impact on my audience. My art features a heavy contrast between dark and light to illustrate the extremes in my experiences while also creating a generally more moody atmosphere.



UWF ARGO CYBER EMERGING SCHOLARS PROGRAM

Michael Stoltz

UWF Argo Cyber Emerging Scholars (ACES)

The Road to Compliance: Executive Federal Agencies and the NIST Risk Management Framework

Faculty Mentor(s): Jacob Shively

Lead Author Classification: UWF Graduate Student

Session: Virtual Presentation

Location: Gather Town

Poster #29

This research report, titled "The Road to Compliance: Executive Federal Agencies and the NIST Risk Management Framework," provides a comprehensive analysis of how executive federal agencies implement the National Institute of Standards and Technology's Risk Management Framework (RMF) to achieve cybersecurity compliance. By exploring the concept and evolution of the RMF, the study delves into the framework's importance for enhancing cybersecurity measures within federal agencies, addressing the challenges these agencies face in the digital landscape. Through a methodical literature review, the report examines theoretical foundations, implementation strategies, and the critical role of continuous monitoring and automation in RMF processes, drawing from key sources like Ross (2014), Lubell (2020), Barrett et al. (2021), and Pillitteri et al. (2021, 2022), among others. Employing a detailed methodology for data collection and analysis, the report presents findings on the successes and challenges of RMF implementation, highlighting the impact of automation and continuous monitoring in bolstering cybersecurity postures. Case studies offer in-depth insights into the experiences of specific agencies, providing lessons learned and best practices. The report concludes with strategic recommendations for overcoming implementation challenges and suggests future directions for enhancing RMF research and practice. This investigation underscores the RMF's

critical role in establishing robust cybersecurity compliance across executive federal agencies, offering valuable recommendations for policymakers, cybersecurity professionals, and governmental bodies.



THE ROBINSON HONORS PROGRAM AT PENSACOLA STATE COLLEGE

Sabrina Bryant

PSC Biology

The Obesity Epidemic in Nauru

Faculty Mentor(s): Melissa Sears

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 9:00-10:30; **Location:** Nautilus (rm 255)

Presentation Time: 10:00AM

Obesity is something that affects the whole world but seems to impact a specific nation the most. This presentation will explore the causes and effects of obesity in the small Pacific island of Nauru, which is known as the “most obese” country in the world. In 1900, Albert Ellis discovered phosphate in Nauru, and mining for this resource began in 1906. This had an extremely negative impact on the health of the people of Nauru. Because of their unethical exploitation of the land in attempts to mine phosphate, Nauru was left with infertile and barren land. The inability to grow any fresh produce would result in a increased dependence on imported food, making it much more expensive due to the country’s location. This forced the people of Nauru to buy ultra- processed, highly palatable, and calorically-dense foods because of their cheaper price compared to healthy, whole foods and contributed to a significant rise in the obesity rate. Despite the country’s attempts at implementing education on nutrition and encouraging physical exercise, there has been little to no progress in combating their high obesity rate.

Magdalena Hernandez

PSC Biology

The Impact of Genetic Evolution of The Octopoda

Faculty Mentor(s): Melissa Sears

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 10:45-11:45; **Location:** Nautilus (rm 255)

Presentation Time: 11:30AM

In the ocean’s depths, resides the Octopoda, a class of Cephalopods equipped with remarkable intelligence. The Octopoda has the most extensive nervous system among invertebrates, making them an applicable candidate for one of the most intelligent animals in the world. Their evolved strategy to become the masters of camouflage is controlled by a specific organ, highlighting their expertise in adapting to their environment and outsmarting prey. However, like all organisms, the Octopoda has its weaknesses, and its environment plays a significant role in the cognitive development of the Octopoda. The daily environmental challenges it faces take responsibility for its genetic adaptation to control its genes, making this invertebrate unique amidst marine organisms. This presentation attempts to explore adaptations acquired by Octopoda in response to their environment in an attempt to increase their odds of survival in an ever-changing world.

Gillian Killingsworth

PSC Biology

Genetic Testing for Health Conditions Related to the Metabolization of Mucopolysaccharidoses

Faculty Mentor(s): Melissa Sears

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 10:45-11:45; **Location:** Nautilus (rm 255)

Presentation Time: 11:00AM

This study investigates why mucopolysaccharidoses, or MPS conditions, are among the hereditary diseases often missed by genetic tests, and why more research needs to be done to understand these conditions. Data was collected by the National Institute of Health surveying MPS cases in the United States. Results showed that MPS conditions affect around 1 in every 25,000 babies born in the United States, and the disorder is typically diagnosed after birth. MPS conditions are a group of genetic abnormalities that prevent the body from creating or utilizing certain enzymes responsible for metabolizing glycosaminoglycans (GAGs), sugars within the body’s cells. This inability to metabolize sugars eventually results in a sharp decline in mental and physical abilities, which is why many people refer to these conditions as childhood dementia. Using this data, it was found that approximately 75% of children with these conditions will not live to see their 18th birthday. Most genetic testing does not screen for these conditions, they can be hard to diagnose, and it currently has no cure. There is a distinct lack of awareness and resources being put into research for these conditions. The mechanisms of MPS conditions, the challenges of getting diagnosed, and the implications around studying these diseases will be discussed.

Heaven Lee

PSC Biology

Interconnected Gardens: Nurturing Wellness Across Generations

Faculty Mentor(s): Melissa Sears

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 12:30PM-2:00PM; **Location:** Olympia (rm 272)

Presentation Time: 12:30PM

This presentation will explore the transformative power of gardening as a catalyst for fostering wellness and intergenerational connections within communities. It attempts to acknowledge the symbiotic relationship between humans and nature, highlight the benefits of cultivating green spaces and showcase insights on gardening as a conduit for knowledge exchange and community building. Gardening can be used as a therapeutic outlet for individuals, promoting mental, physical, and emotional well-being. Nurturing plants can be used to instill a sense of purpose, foster mindfulness, and offer a calming space away from the commotion of modern life. Furthermore, practicing gardening activities can foster a deep appreciation for the natural world, and inspire values of environmental stewardship and sustainability. Moving on from personal wellness, gardens serve as communal spaces where people of all ages can converge, bridging generational divides through meaningful interactions. With the shared experiences of tending to plants, individuals forge bonds, exchange knowledge, and spread wisdom across generations. This intergenerational exchange not only preserves traditional gardening practices but also imparts valuable life skills to future generations. By sharing the various

benefits of interconnected gardens, this presentation aims to explore the utilization of gardening by communities as a catalyst for holistic wellness and collective empowerment, fostering prosperity and resilience across generations.

Addison Miller

PSC Biology

The Contributions of Domestic Swine to the Medical and Healthcare Fields

Faculty Mentor(s): Melissa Sears

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 12:00-1:00; Location: Lounge

Presentation Time: 12:15PM

This presentation attempts to explore the significant contributions to the medical field due to the usage of domestic swine in scientific research and testing. Female birth control, insulin production, even organ donation would not be able to meet the demands for production without our fellow mammals, pigs. Successful organ donations of kidneys, lungs and even a heart have been conducted with pig donors and a human recipients. Made possible due to gene similarities between humans and pigs, the medical advances made possible by domestic swine have implications for affecting many human lives as scientific advances continue to progress.

Peter Montgomery

PSC Biology

The Prevalence of Sickle Cell Disease Among Black Americans

Faculty Mentor(s): Melissa Sears

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 10:45-11:45; Location: Nautilus (rm 255)

Presentation Time: 10:45AM

Data from the Centers for Disease Control and Prevention in the United States shows that one out of every 365 black Americans will be born with sickle cell disease. Having one copy of the altered hemoglobin gene, known as having a sickle cell trait, is even more common, with a one in thirteen chance for black Americans. Sickle cell disease causes red blood cells to form in a sickle shape, which can then contribute to the formation of blood clots and other blood-related health issues. This presentation will explore the sickle cell disease, why certain populations have a higher risk of being born with the disease, and the protection against malaria provided by carrying one copy of the altered hemoglobin gene.

Melody Neal

PSC Biology

Are Colleges of the Past Evolving into Colleges of the Future?

Faculty Mentor(s): Melissa Sears

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 12:30-2:00; Location: Olympia (rm 272)

Presentation Time: 1:00PM

Over the past decade, an abundance of time and resources have been dedicated to the protection and inclusion of children diagnosed with Autism and ADHD in our school systems. In particular, colleges present an all-embracing college experience; however, being autistic with ADHD myself, that has not been my experience. In my presentation, I will explore research that indicates our

collegiate education system is severely lacking in meeting the needs of students with Autism and ADHD.

Katherine Peppers

PSC Biology

Unjust Prices: How Cost of Healthcare Generates Problems for America's Health

Faculty Mentor(s): Melissa Sears

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 9:00-10:30; Location: Nautilus (rm 255)

Presentation Time: 9:30AM

One of the major problems with the healthcare system in America is the excessively high cost of medical bills. Compared to other high-income countries around the world, America is known for its immense costs of medical procedures, pharmaceuticals, and hospice within emergency centers. The cost of medical procedures alone can make it difficult for those of low income to afford the medical attention they need. Factoring in the emergency procedures and distance traveled by emergency vehicles, rural communities also struggle to afford immediate healthcare. With most of the United States being comprised of rural areas and containing a high population of low-income citizens, the lack of available or affordable healthcare puts the entirety of America's health at risk. This presentation aims to investigate the origins of the high costs within the healthcare system, from the overpricing of pharmaceuticals and the cost of acquiring and maintaining all medical equipment required for operations.

Kris Rafdahl

PSC Biology

Forensic Investigative Genetic Genealogy: Emerging Cold Case Technology and its Controversies

Faculty Mentor(s): Melissa Sears

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 12:30-2:00; Location: Olympia (rm 272)

Presentation Time: 12:45PM

Forensic Investigative Genetic Genealogy is an emerging field of study in Criminology that has seen exponential growth in recent years. FIGG has brought resolution to a multitude of cold cases using this new DNA technology. CRISPR, clustered regularly interspaced short palindromic repeats, is used to repair degraded DNA and produce a full forensic-grade genomic sequence to compare to suspects using Genetic Genealogy. Oftentimes, FIGG has identified suspects that were never on the police radar and has brought closure to families as a result. It is also used in current cases when DNA is run through genetic genealogy websites to find potential matches and/or families. Forensic Investigative Genetic Genealogy is not without its controversies, and they have only increased over the past couple of years. Genetic consent is a hotbed issue that can be prohibitive, and access to genetic genealogy databases has now started to limit the information shared with law enforcement. The technology of CRISPR is so new that there are no ethical guidelines associated with it yet. This presentation examines what the technology of using forensic-grade genome sequencing is, the process by which it is developed, and how it is used to identify suspects in current cases as well as cold cases. Hard-to-solve cases, most often due to DNA degradation, are now being closed with this technology, but the controversies need to be addressed as well.

Courtney Stokes***Sickle Cell Disease and CRISPR Technology*****Faculty Mentor(s):** Melissa Sears**Lead Author Classification:** PSC Undergraduate**Session:** Main Oral Presenters**Session Time:** 9:00-10:30; **Location:** Nautilus (rm 255)**Presentation Time:** 10:15

Sickle Cell Disease is the most common monogenic blood disorder, 1 in 12 African Americans carries a sickle cell gene. In December of 2023, the U.S. Food and Drug Administration approved Casgevy, the first gene therapy utilizing CRISPR for the treatment of SCD. Before CRISPR therapy was approved for SCD blood transfusions, Hydroxyurea, L-glutamine, Crizanlizumab, and Voxelotor were the only approved treatments. Although it is controversial the combination of anti-switching therapies, and/or the combination of anti-switching and anti-sickling results have demonstrated that, for sickle cell anemia patients failing treatment with butyrate alone, adding hydroxyurea achieved higher HbF levels. Hematopoietic stem cell transplantation with fully matching donors is currently the most definitive treatment, but the lack of matching donors limits this form of treatment. Gene therapy is a new alternative form of treatment, experimental approaches include gene addition using lentiviral vector-based strategies, gene editing to correct the sickle cell disease mutation, and genetic silencing to enhance the production of fetal hemoglobin. The advantage of this approach decreases the need for immunosuppressive drugs and the risk of graft-versus-host disease. The ultimate mode for using gene editing of HSCs to treat SCD will be to perform the editing in vivo, rather than through ex vivo HSC isolation with chemotherapy conditioning.

Leia Burks***Ecosia: Searching Through Trees*****Faculty Mentor(s):** Jennifer Ehrhardt**Lead Author Classification:** PSC Undergraduate**Session:** Main Poster Session**Session Time:** 10:00-11:00; **Location:** Conf Room AB**Presentation Time:** 10:00-11:00; **Poster #25**

For every second you spend on Google, 23 trees must use their CO₂-intake abilities. This presentation will explain how Internet browsing causes carbon emissions and how the Ecosia search engine offsets this output by planting trees. These trees are paid for from ad revenue and planted in locations such as Brazil, Senegal, and Indonesia for reforestation efforts.

Michael George***Breaking Free: Gaining True Freedom Through Entrepreneurship*****Faculty Mentor(s):** Jen Ehrhardt**Lead Author Classification:** PSC Undergraduate**Session:** Main Oral Presenters**Session Time:** 10:45-12:15; **Location:** Olympia (rm 272)**Presentation Time:** 10:45AM

The Federal Bureau of Justice statistics estimated that in 2023 there were over 1.2 million people in prison in the US, 95 percent of which will be reintegrating

PSC Biology

into society in the future. The resulting need for employment for newly released felons and difficulty in attaining it due their former incarceration, requires outside-of-the-box thinking for employment solutions. This presentation will discuss the enterprenurial trend of formerly incarcerated individuals who are seeking, and often finding, true freedom through entrepreneurship. It will explore why ex-offenders are making the choice to become their own bosses, the growing movement to teach entrepreneurship to those in and out of prison, and profile a few formerly incarcerated entrepreneurs who have made the choice to determine their own destinies through entrepreneurship.

Faith Holman***Eugenics in WW2 and Today*****Faculty Mentor(s):** Brian Rucker**Lead Author Classification:** PSC Undergraduate**Session:** Main Oral Presenters**Session Time:** 9:15-10:45; **Location:** Athens (rm 260)**Presentation Time:** 9:30AM

Eugenics is a now widely criticized theory of how to arrange reproduction in humans in a way that promotes the occurrence of “desirable,” heritable characteristics. Within the Nazi party during the 20th century, the study of eugenics was utilized to justify their treatment of Jews, disabled people, and other minority groups and also motivated their attempts to coerce breeding of individuals with the more Aryan physical features to create the “perfect race.” Although eugenics has been discredited scientifically, my presentation attempts to explore the eugenic ramifications of selective embryo implantation and breeding utilizing new technology.

Gabriel Martin***The Soviet Start-Up: How the Disillusion of the Soviet Union Contributed to the Ukraine War*****Faculty Mentor(s):** Brian Rucker**Lead Author Classification:** PSC Undergraduate**Session:** Main Oral Presenters**Session Time:** 9:15-10:45; **Location:** Athens (rm 260)**Presentation Time:** 9:45AM

Thousands have died in the Ukraine War, a war fought over land and culture. Many factors play a role in the creation of this war: NATO, cultural ties, military power, and economic control, among others. Ukraine is a relatively new country, only gaining independence in the 1990s. It is one of eleven countries that formed out of the fall of the Soviet Union, and because of that Ukraine’s development has been shaped by the Soviet Union’s influence. Ukraine is tied to Russia economically through an open border agreement, and culturally through its history as part of the Russian Empire, yet has little economic power. What does Russia want from Ukraine? Ukraine’s desire to join the the European Union and its location left Russia nervous that the Ukraine holding an open border agreement with Russia and simultaneously being in the EU would be disastrous for Russia. After years of NATO encroaching on Russia’s borders, this presentation argues that Ukraine’s desire to join the EU and NATO was the final step that motivated Russia to invade Ukraine.

PSC Business**PSC Business****PSC History****PSC History**

Abbigale Maxwell

Medical Misconceptions and Advancements in European History

Faculty Mentor(s): Brian Rucker

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 2:00-3:00; Location: Auditorium

Presentation Time: 2:15PM

My research aims to explain how illnesses and surgical operations were treated prior to modern scientific advancements, the original practices that influenced our understanding of medicine, and which of those discoveries were most pivotal in shaping the modern medical field. Until the twentieth century, medical practitioners regularly prescribed addictive substances, operated in unsanitary conditions, and performed harmful medical procedures. This was because of the outdated concepts that shaped physicians' understanding of the human body and illness. The acceptance of germ theory in the mid-nineteenth century helped to invalidate ideologies without scientific evidence, such as humoral theory and spontaneous generation, and facilitated a more accurate comprehension of disease transmission and treatment, leading to the establishment of better-quality hygienic standards and the development of antiseptics. Furthermore, germ theory inspired Koch's Postulates, a set of guidelines for identifying the specific microbes that cause a particular disease, as well as the invention of pasteurization. By exploring the historical trajectory of diagnosis and treatment, my research emphasizes the transformative impact that germ theory had on healthcare that contributed to the development of modern medical procedures.

Hunter Ramos

The Soft Limitations to Executive Power: Parallels and Warnings from Rome

Faculty Mentor(s): Ronald Atchison

Lead Author Classification: PSC Undergraduate

Session: Main Poster Session

Session Time: 2:00-3:00; Location: Conf Room AB

Presentation Time: 2:00-3:00; Poster #26

The executive branch in the United States is an essential part to the balance and function of our federal government. In times of crisis, the executive branch may assume a role similar to that of the Roman dictator Lucius Quinctius Cincinnatus in terms of expectations of executive restraint. Cincinnatus expanded the Roman leadership role in terms of governing length and area of authority until the role was seized by Caesar to serve permanently. Over the life of the American republic, the powers of the executive branch have expanded, some critics argue, even beyond what is allowed by the constitution. This presentation will explore the similarities between the role served by Cincinnatus and the American presidents in times of crisis and the inherent risks to allowing one branch of government increased power and authority.

Thomas Rawley

Moving Pictures: The European Influence of Early Cinema

Faculty Mentor(s): Brian Rucker

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

PSC History

Session Time: 10:45-12:15; Location: Olympia (rm 272)

Presentation Time: 11:00AM

This presentation explores how the emergence of cinema in the late 19th and early 20th centuries was significantly shaped by the European influence on cinematic techniques, narratives and aesthetics in France, Russia, Germany, and Italy that resonate with filmmakers even to this day. The Lumière Brothers, Auguste and Louis, were instrumental in the early development of cinema. Their invention of the Cinématographe, capable of both recording and projecting moving images, marked the birth of modern filmmaking. Their short films, such as "Arrival of a Train at La Ciotat," astonished audiences and laid the foundation for the cinematic art form. Soviet cinema in the 1920s profoundly influenced the medium through avant-garde experimentation. German Expressionism emerged as a dominant force in European cinema, characterized by its use of distorted sets, chiaroscuro lighting, and psychological themes. Italian Neorealism focused on portraying ordinary life with authenticity and empathy. The impact of European cinema to this day has an enduring legacy and its pivotal role in shaping the art form turned cinema into what it is today.

Yana Ramos

PSC History and Government

The Stubbornness of an Outdated System: The United States Legal Immigration System in the Modern World

Faculty Mentor(s): Brian Rucker

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 9:00-10:45; Location: Olympia (rm 272)

Presentation Time: 10:15AM

This research focuses on deconstructing the United States legal immigration system to answer the most common concerns about its inability to operate effectively in the modern world. In that regard, the US immigration system is compared to other immigration system models, mainly from countries in the European Union, to establish the main problems it fails to address. Since its inception, the US legal immigration system has rarely been updated, which has created issues resulting in all-time high immigration court case backlogs. A system overhaul has been proposed many times over the past decades, with the last comprehensive immigration reform being passed in 1986. Since then, the attempts that were made to pass comprehensive legislation to address the issues with the immigration system have failed, leaving many of its problems worsening and unresolved. When the US legal immigration model is considered in terms of its efficiency and effectiveness, it must come to people's attention that it is not working correctly, and it hasn't been for decades. With so many real-world examples around the world, the United States must examine solutions that have been effective in other countries and attempt to employ new methods to resolve the issues with legal immigration.

Andi Chambless

PSC Human Growth and Development

The Verbal Divide: Exploring the Impact of Socioeconomic Status and Screen Time on Language Development

Faculty Mentor(s): Richard Carr

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

PSC History

Session Time: 9:30-11:00; Location: Auditorium

Presentation Time: 9:45AM

In recent years, there has been a phenomenon known as “Ipad kids” that refers to children who are constantly engrossed by their screens and demonstrate anxiety or misconduct when the screens are removed. Although this research does not focus on the behavioral consequences of screen time, it does dive into the effects of screen time on language development and how SES plays a role in combination with screen time to produce harmful effects on a child’s language development. In a well-known study by Betty Hart and Todd Risley in the 1990s, children of varying SES statuses were found to have vastly differing vocabulary sets, stating a gap of 32 million words between those from higher SES versus lower. These results have been widely debated among scholars due to the study’s small population of just over 40 families; however, it is worth exploring in the modern era, especially with the rise of technology and the use of it in everyday life.

Hannah Kilburn

PSC Human Growth and Development

ACEs and How They Affect Health

Faculty Mentor(s): Richard Carr

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 9:00-10:30; Location: Nautilus (rm 255)

Presentation Time: 9:15AM

Adverse Childhood Experiences, or ACEs, often negatively affect individuals not only in childhood, but throughout their lives. ACEs create long-term trauma reactions that can manifest in mental or physical health issues. Research shows that childhood adverse experiences are more common than previously believed, and they can have a lasting effect on mental and physical health. Overloading the body with cortisol and adrenaline, ACEs may cause lifelong damage, increasing the likelihood of chronic issues like heart disease and depression. The ACE scale was created to measure how many abuse situations someone may have experienced. Someone with an ACE score of 5 or more is more likely to have health problems later in life than someone with an ACE score of 1. Using these scores doctors can pay more attention to people with a higher ACE score to watch for health problems, and possibly even treat them. The presentation attempts to explore the adverse effects of childhood trauma, the ways in which it contributes detrimentally to physical and mental health in adulthood, and ways the ACE score can be utilized by medical professionals to promote better health among their patients.

Caitlin Albertson

PSC Literature

The Dystopian Mirror: Unmasking Corporate Control using Insights from “Ready Player One”

Faculty Mentor(s): Lauren Baugus

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 12:30-2:00; Location: Olympia (rm 272)

Presentation Time: 1:45PM

In a world where corporate influence pervades every aspect of society, parallels between the dystopian warnings of “Ready Player One” and the realities

of contemporary America become starkly evident. This paper explores the intersection of economic inequality, corporate power, and indentured servitude, drawing connections between fictional narratives and real-world phenomena. Through an analysis of the global energy crisis, corporate lobbying, and modern forms of slavery, it becomes clear that skepticism towards corporate giants is not only prudent but necessary for safeguarding liberty and equality. By examining these themes, this paper underscores the urgency of understanding and confronting corporate dominance in order to preserve societal well-being and democratic principles. Additionally, it advocates for consumer awareness and conscientious spending as a means of challenging corporate hegemony and promoting a more equitable society.

Kaelyn Christiana

PSC Literature

“Frankenstein”: The Creation of Monsters

Faculty Mentor(s): Lauren Baugus

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 11:00-12:30; Location: Athens (rm 260)

Presentation Time: 11:30AM

Though Mary Shelley’s “Frankenstein” was written over two hundred years ago, it still stands as a mirror image of how our society functions today. The creature within the novel is not a senseless monster as we’ve seen in movies, but rather the opposite. He is an intelligent being who craves love and understanding; he is merely a child longing for connection. The novel explores the questions of humanity and equality. There are reflections of the creature through history, our lives, and, for some, the mirror. Stories such as “Frankenstein” are outlets for deep rooted fears or personal experiences to be expressed and discussed and learning opportunities for mankind to understand one another more in depth. Through empathy, uniqueness, and relationships can we grow to become a unified humanity, for monsters are not born; they are created.

Damien Cruikshank

PSC Literature

Unveiling Misogyny: An Analysis of Gender Roles in Joe Wright’s “Anna Karenina” and Their Reflections in Contemporary Society

Faculty Mentor(s): Lauren Baugus

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 9:00-10:45; Location: Olympia (rm 272)

Presentation Time: 10:00AM

Joe Wright’s “Anna Karenina” is an incredible adaptation of Leo Tolstoy’s classical literature that displays masterful imagery of Imperial Russian Society as nothing more than a play. This presentation will explore the relationships between many characters and their spouses, the seemingly illicit affairs that are all too common, and the consequences that are leveraged against these parties. We will analyze the differences of the presentation and treatment of these characters primarily based on gender, and the root causes of the actions taken. We will also take the information gathered and compare it to the modern culture of America and discuss the aspects that are considered to be social norms and whether or not these elements of our everyday lives are still valid.

Genesis Feliciano***Gender Equality Benefits Men?: The Study of Gender Equitability in Voltaire's "Candide"*****Faculty Mentor(s): Lauren Baugus****Lead Author Classification: PSC Undergraduate****Session: Main Oral Presenters****Session Time: 12:30-2:00; Location: Olympia (rm 272)****Presentation Time: 1:30PM**

In Voltaire's "Candide," he explicitly puts his female characters through tough and trying times in order to highlight their strength and virility; no doubt allowing his male characters hard times as well, but by intention, they displayed inverse reactions. This presentation argues that in "Candide," Voltaire demonstrates his clear appreciation of women through the exploration of his female characters, and illustrates how women were treated differently than men by society. Studies have shown that in today's society gender equality would surely benefit men in ways like depreciating suicide rates and levels of depression as does Voltaire's argument in "Candide" that equality can improve quality of life for everyone, not just women.

Shyan Fredrickson***James Baldwin's Effect on the Growth of American Literature*****Faculty Mentor(s): Lauren Baugus****Lead Author Classification: PSC Undergraduate****Session: Main Oral Presenters****Session Time: 9:15-10:45; Location: Athens (rm 260)****Presentation Time: 10:30AM**

James Baldwin's reflection of American standards for identity within his literary works effects modern views on liberty and should be used in discussions of healing the trauma of a society burdened by prejudice. Not many who know of Baldwin do not know of his activism toward the equality between races and for those of queer identity, yet something surprising within Baldwin's approach is that he took in account both sides; he was often called the mediator between races. His take on the flaw of racism was unique, regarding it as a problem for white people instead of African Americans. His philosophy affects today's writers and the rest of the public's view on societal prejudices, specifically when it is interpreted through literature and other forms of media. Baldwin's theory on national trauma correlates with modern day problems as well as his own time, having a hand in America's growth as a nation to help heal those that have been harmed by traditional standards set within a time which lacked enough freedom or safety to express diversity and any 'queer' identity. Though he was one man within the grand history of activism through literature, his philosophy allowed later literature to grow to be realistically complex and inclusive.

Evan Klein***Humanity of The Misfit: Using "A Good Man Is Hard to find" to Understand Humanity*****Faculty Mentor(s): Lauren Baugus****Lead Author Classification: PSC Undergraduate****Session: Main Oral Presenters****Session Time: 11:00-12:30; Location: Athens (rm 260)****Presentation Time: 11:00AM****PSC Literature**

Humanity. What is it? Upon first glance, it does not seem too difficult to answer. However, humanity is such a broad topic that a single definition is hard to find. This research attempts to give a definition to humanity and apply it to Flannery O'Connor's short story "A Good Man Is Hard to Find" to better understand not only the characters in story, but also the concept of humanity itself. This presentation argues that the character of the misfit often portrays the most humanity. This revelation comes in sharp contrast to his actions and demonstrates how humanity and morality are in fact two separate things: what separates us from other animals are our abilities to make sense of our world by telling stories and asking questions, but these alone are not what make us good or bad people.

Heaven Lee***Navigating Othello's Shadows: Mental Health in the Digital Landscape*****Faculty Mentor(s): Lauren Baugus****Lead Author Classification: PSC Undergraduate****Session: Main Oral Presenters****Session Time: 12:00-1:00; Location: Lounge****Presentation Time: 12:30PM**

In an era where technology is constantly improving, the line between technology and mental health is beginning to converge. Drawing parallels between Shakespeare's "Othello" and modern mental health issues, this presentation will delve into the complexities of navigating psychological well-being in the digital age. Just as Othello grappled with insecurities, manipulation, and the consequences of his vulnerabilities, individuals today face similar struggles exacerbated by online environments. Technology has been able to revolutionize mental health support, offering accessibility to various resources, therapeutic communities, and beneficial platforms. While this gives some amazing benefits to the mental health community it also introduces new risks. Virtual therapy sessions and supportive online groups come with privacy concerns and information overload, mirroring Othello's susceptibility to manipulation. Furthermore, the pervasive influence of social media sets unrealistic standards and exacerbates existing mental health issues, akin to the societal pressures Othello faced. By examining Othello's journey alongside contemporary challenges this presentation aims to foster awareness and empower individuals to navigate the digital landscape mindfully. Through an exploration of treatment options and the importance of discernment in online interactions, attendees will gain insights into mitigating risks while harnessing the benefits of technology for mental well-being.

Kris Rafdahl***Finding the Humanity in American War Poetry*****Faculty Mentor(s): Lauren Baugus****Lead Author Classification: PSC Undergraduate****Session: Main Oral Presenters****Session Time: 11:00-12:30; Location: Athens (rm 260)****Presentation Time: 11:15AM**

When war poetry is examined and analyzed, it is often analyzed from the perspective of the horrors of war. There is another not-so-obvious analysis that is necessary to reveal. With war, there is a plethora of expressed humanity and servitude that often go unnoticed. This is even true today. American war

PSC Literature**PSC Literature****PSC Literature****PSC Literature**

poetry has been a genre since the Revolutionary War and continues today. “Paul Revere’s Ride” by Henry Wadsworth Longfellow, “The Wound Dresser” by Walt Whitman, “Dulce et Decorum Est” by Wilfred Owen, “The Death of the Ball Turret Gunner” by Randall Jarrell, and “Beautiful Wreckage” by W. D. Ehrhart are just a few war poems that you can find the humanity in the soldiers and citizens of their hosting countries. Examining these poems and other war poems, one can be led into the fray of war only for peace to be also found in its prose. So, upon analysis of these wars through poetry, it is often asked, “Have we learned nothing?” It can be argued that we have. At least between the lines, we can find the humanity that is so essential in this warring world. This paper is intended to open our eyes to the humanity in us all and to learn to find the humanity in us no matter what painful predicament we find ourselves in. If we can find it in war, we can find it anywhere.

Hunter Ramos

PSC Literature

Digging in the Trash”: How Empathy Demands Action to Solve Poverty

Faculty Mentor(s): Lauren Baugus

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 12:00-1:00; Location: Lounge

Presentation Time: 12:45PM

“Digging in the Trash,” an essay by David Joy, asks us to look at poverty with empathy. The author suggests that viewing poverty through an empathetic lense is a great first step on the road to ending poverty, but action is also needed to effectively address it. Poverty is such a large-scale issue that tackling the problem can seem impossible, yet our government has successfully decreased it in the past with programs associated with The Great Society. This presentation will explore ways in which the author’s suggestions could be implemented in modern society to decrease the amount of individuals suffering from the effects of poverty in American society.

Detra Simmons McDonald

PSC Literature and Social Science

The Invisible Plight of our “Darker Brother”: Disparities and Inequality among Indigenous Peoples in American Healthcare and Criminal Justice Services

Co-Author(s): Sonja Hoffman

Faculty Mentor(s): Laura Baugus

Lead Author Classification: PSC Undergraduate

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #21

This poster aims to raise awareness about the invisible plight of indigenous peoples in the American healthcare and criminal justice systems. We will outline some of the vast disparities and inequalities faced by indigenous peoples in their attempts to access healthcare and in navigating the criminal justice system. Utilizing a wide range of notable sources, our analysis examines the historical context, systemic failures, and challenges fueling the disparities. It will explore how cultural insensitivity, socioeconomic factors, and institutional biases combine to foster unequal outcomes for American indigenous communities. Lawmakers, medical professionals, and justice practitioners can do a better job in implementing equitable and culturally sensitive approaches while taking steps to improve the well-being

and justice outcomes that contribute to these disparities. In addition, we will explore policies aimed at addressing these disparities and in hopes of promoting equality in attaining much-needed healthcare and criminal justice services.

Thomas Rawley

PSC Natural Sciences

Why All The Beef? Animal Agriculture on the Environment

Faculty Mentor(s): Caren Garrity

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 12:30-2:00; Location: Olympia (rm 272)

Presentation Time: 1:15PM

This presentation examines the negative environmental effects of the animal agricultural industry on a global scale. Animal agriculture uses 45% of Earth’s land area, this is particularly remarkable when compared to space that every human city uses, which is less than 1% of Earth’s land area. 95% of the Amazon Rainforest’s deforestation is due to the expanding need for the land to be utilized for animal agriculture. Not only is deforestation problematic, but it also destroys ecosystems causing a lack of biodiversity, an essential aspect of Earth’s natural order. Animal agriculture is also the cause of pollutants in both our atmosphere and Earth’s water systems, negatively affecting humans and the environment around us alike.

Kaelyn Christiana

PSC Physical Sciences

Rubber is the New Green

Faculty Mentor(s): Caren Garrity

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 9:00-10:30; Location: Nautilus (rm 255)

Presentation Time: 9:45AM

With the rise of greenhouse gas emissions caused by increased industrialization, temperatures are rising, causing ice to melt at a concerning rate. Melting glaciers cause a large influx of freshwater to enter the oceanic conveyor belt, causing it to slow. There are many ways for us to try to lower these emissions, even if it is a small change. Tires have been a challenging item to recycle. In some places they are burned to create energy, while in other places they pile up in landfills. A creative way of recycling these rubber wheels is turning them into bricks that can be used for sidewalks, playgrounds, gyms and even driveways. These bricks have a bounce to them making them more comfortable for such designated flooring. This presentation will explore this method of recycling tires that could help relieve space in landfills, provide better flooring than concrete or asphalt, and push for renewable energy for industrial companies, and even at Pensacola State College.

Amy Ryan

PSC Physical Sciences

Making Colleges More Energy Efficient, “Green” and Sustainable: What Can We Do?

Faculty Mentor(s): Caren Garrity

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 10:45-11:45; Location: Nautilus (rm 255)

Presentation Time: 11:15AM

The prompt is a way to make the campus a more sustainable place while saving the school money. My focus is to introduce more native and biodiverse plants

that will replace grass and add to the current ecosystem. This will save the school money by spending less on maintaining grass, while creating less waste by the lack of grass maintenance.

Courtney Stokes

PSC Physical Sciences

Water and Your Plants: The Effects of Distilled, Tap, Spring, and Carbonated Mineral Water on Plants

Faculty Mentor(s): Timothy Hathaway

Lead Author Classification: PSC Undergraduate

Session: Main Poster Session

Session Time: 1:00–2:00; Location: Conf Room AB

Presentation Time: 1:00–2:00; Poster #23

This research presentation explores the effects of distilled, spring, tap, and carbonated mineral water on basil, bok choy, and spider plants.

Katherine Beckman

PSC Psychology

Safe Spaces on Campus: Peaceful Utopias or Gag Orders?

Faculty Mentor(s): Richard Carr

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 9:00–10:45; Location: Olympia (rm 272)

Presentation Time: 9:30AM

In today's society, we are confronted with opposing forces of political correctness and civil liberties. However, we must recognize that embracing diverse perspectives is essential to our intellectual growth and development. In this presentation, I will argue that safe spaces on college campuses, while well-intentioned, can actually hinder student's ability to learn and engage in open-minded discourse. In order to truly achieve educational goals, students must be willing to engage in uncomfortable and challenging conversations, learn to embrace the discomfort, and strive to create an environment that promotes free speech and critical thinking. Only then can students fully realize their potential and make a positive impact on the world.

Chantel Cox

PSC Psychology

Food Desserts – lack of resources? Or lack of Understanding?

Faculty Mentor(s): Richard Carr

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 9:00–10:45; Location: Olympia (rm 272)

Presentation Time: 9:45AM

Food deserts play a large role in the decline of health for low-income populations within rural and urban areas. This presentation investigates the link between these two topics and evaluates the evidence behind trials linked to curing the problem and health-related diseases associated with these conditions of living. Food insecurity was observed in Pittsburgh before and after a new supermarket was opened in an urban neighborhood compared to its counterpart neighborhood that had no intervention. Moreover, elderly adults in rural areas struggle with growing and/or accessing their own food as their age declines and health related issues rise with a lack of food resources aiding in ailments. In addition, in Texas, researchers found that convenience stores and grocery stores in food deserts held

lower options of healthy foods and lower quality food but have a lack of resources to provide balanced healthy meals that promote healthy lifestyles.

Layla Fullmer

PSC Psychology

The Critical Reset

Faculty Mentor(s): Richard Carr

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 9:00–10:45; Location: Olympia (rm 272)

Presentation Time: 9:15AM

This presentation explores the different stages of sleep in the sleep cycle and why they are important for humans. The stages include wakefulness, N1, N2, N3, and REM sleep. Each stage of sleep has unique chemical releases in the brain as well as different amplitude patterns, which indicate critical reactions occurring in the mind during rest. When people sleep, the brain is cleansed of toxins that have accumulated throughout the day, making it one of the most important bodily functions in the human body each day.

Courtney Stokes

PSC Psychology

Epigenetics and Intergenerational Trauma

Faculty Mentor(s): Richard Carr

Lead Author Classification: PSC Undergraduate

Session: Main Poster Session

Session Time: 2:00–3:00; Location: Conf Room AB

Presentation Time: 2:00–3:00; Poster #27

In the early 2010s researchers started to give more credence to epigenetic inheritance, which was often labeled by scientists as a pseudo-science before that date. Children born from parents who suffered something traumatic have shown vulnerability to stress, and others have a resiliency that is usually learned, not inherited. Previous research suggested this discrepancy was from child-rearing techniques and different environments. New research proposes that these transgenerational effects may have been also genetically transmitted to their children. By merging genetic inheritance with environmental influences, epigenetics introduces a broader psychobiological perspective to understanding how trauma is passed down across generations. In this presentation, I aim to expand and explore the current research on epigenetics and intergenerational trauma.

Tristany Benton

PSC Social Sciences

The Destruction of Thirds Places and Its Effects on the Aging Population of the United States

Faculty Mentor(s): Richard Carr

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 10:45–12:15; Location: Olympia (rm 272)

Presentation Time: 11:15AM

This research project assesses the reasons for the decline of essential third places, as well as the effects it has on postgraduates of high school or college. The 1960s brought in a new wave of car dependence and a changing way of life. A way of life that started to diminish the third place. Third places, settings outside of the home,

school, or work that are essential to maintaining connections and meeting new people, started dissipating. After graduation and integration into the workforce, third places become a necessity for connection with others. Without them, ties to community as well as individuals of different gender, ethnicity, and economic background weaken, allowing stress, loneliness, and even depression to take hold.

Sonja Hoffman

PSC Social Sciences

The Invisible Plight of our “Darker Brother”: Disparities and Inequality among Indigenous Peoples in Healthcare and Criminal Justice Services

Co-Author(s): Detra Simmons-McDonald

Faculty Mentor(s): Richard Carr

Lead Author Classification: PSC Undergraduate

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #19

This poster aims to raise awareness about the invisible plight of indigenous peoples in the healthcare and criminal justice systems. We will outline some of the vast disparities and inequalities faced by Indigenous peoples in their attempts to access healthcare and in navigating the criminal justice system. Through multiple notable sources ranging from executive Orders to statistical data to historical novels made motion pictures; our analysis examines the historical context, systemic failures, and challenges fueling the disparities. It will explore how cultural insensitivity, socioeconomic factors, and institutional biases combine to foster unequal outcomes for Indigenous communities. In addition, we will explore policies aimed at addressing these disparities and in hopes of promoting equality in attaining much-needed healthcare and criminal justice services.

Tiana Reynolds

PSC Social Sciences

Breaking the Silence of Childhood Trauma of Emotional and Mental Neglect

Faculty Mentor(s): Richard Carr

Lead Author Classification: PSC Undergraduate

Session: Main Poster Session

Session Time: 12:00-1:00; Location: Conf Room AB

Presentation Time: 12:00-1:00; Poster #20

Childhood trauma resulting from emotional and mental health neglect is a pervasive yet often overlooked issue with profound and long-lasting consequences. This research project aims to shed light on the prevalence, impact, and interventions related to childhood neglect. Through a comprehensive literature review, qualitative analysis, and case studies, this study explores the multifaceted nature of emotional and mental health neglect in childhood which by examining the causes, manifestations, and effects on psychological development and wellbeing. Additionally, the research investigates the societal and systemic factors that contribute to the perpetuation of neglect and barriers to identification and intervention. By amplifying the voices of survivors and incorporating insights from mental health professionals and educators, this project seeks to raise awareness, foster dialogue, and advocate for systemic change to prevent and address childhood trauma resulting from emotional and mental health neglect. Ultimately, the findings aim to inform evidence-based practices, policies, and interventions to support the healing and resilience of survivors and promote healthier outcomes for future generations.

PSC Social Sciences

Asia Schofield

Vapes and Cigarettes and Our Health

Faculty Mentor(s): Richard Carr

Lead Author Classification: PSC Undergraduate

Session: Main Oral Presenters

Session Time: 9:00-10:45; Location: Olympia (rm 272)

Presentation Time: 9:00AM

In recent years, vaping tools have experienced a surge of increased usage among American youth, while traditional cigarette usage has declined. This presentation attempts to explore how nicotine and related nicotine-laced products in vaping tools, such as advanced personal vaporizers, disposable e-cigarettes, e-pipes, and e-cigars, affect the physical health of individuals who use them.

Shelby Smith

PSC Social Sciences

Pay to Play: Socioeconomic Status Within Young Athletes

Faculty Mentor(s): Richard Carr

Lead Author Classification: PSC Undergraduate

Session: Main Poster Session

Session Time: 10:00-11:00; Location: Conf Room AB

Presentation Time: 10:00-11:00; Poster #26

As young athletes pursue their dreams of becoming professional athletes, their socioeconomic status can greatly impact their ability to succeed. This presentation explains how the opportunities and resources available to athletes from low-income families are often limited compared to those from high-income families. Along with socioeconomic status other inequalities like race or gender creates an uneven playing field, making it harder for young athletes to succeed.

Yana Ramos

PSC Visual Arts

Comics as Tools for Social Criticism

Faculty Mentor(s): Anna Cavnar

Lead Author Classification: PSC Undergraduate

Session: Main Poster Session

Session Time: 1:00-2:00; Location: Conf Room AB

Presentation Time: 1:00-2:00; Poster #24

This research examines the impact of comics, caricatures, and editorial cartoons on American society. Comics play a crucial role in social criticism, serving as a tool to challenge, enlighten, and criticize current events. By investigating the visual and storytelling aspects of comics, we can observe history unfold through the eyes of the artists, representing the voice of the people, and expressing their fears, desires, and hopes for the future. Similarly, comics often push the boundaries of free speech and the First Amendment, which have recently become a hot topic concerning the younger generation. This opens up a bigger conversation that dives into the contrast between what freedom of expression was, as represented by art, in the past and what it looks like in the present. In that regard, the research also examines the reasons why editorial cartoons and comics have been suppressed and if this effective way of criticism is a dying form of art.

AUTHOR & FACULTY INDEX



A		Barnes, Karen34, 35, 36, 38, 39,40, 41, 42, 43	Boss, Parker.....47	Cavnar, Anna.....87
Abdel-Hafez, Ceaser62	Barnett, Bryton.....46	Bostwick, Joshua.....48	Cavnar, Peter.....27, 29, 32	Chambers, Camden.....60
Aeppli, Tony61	Barrett, Hope26	Bosworth-Canner, Josephine.....52	Chambless, Andi82	Champagne, Marie19, 20, 21
Afroz, Sharmin.....29	Barthes, Hudson72, 75	Bouchard, Grace.....47	Choi, Beloved28	Chomos, Stephen44
Ahaz H. Shah, Syed.....55	Basel, Nolan62	Bowman, Baye27	Christiana, Kaelyn.....83, 85	Christiansen, Dane.....10
Al-Bayaty, Teddy.....62	Basilis, Sara55	Boykin, Aza.....50	Cilley, Micah.....62	Clark, Gregory61
Albertson, Caitlin83	Bass, Layla.....73	Brandt, Heaven27	Clauussen, Isabella47	Cobb, John59
Albrecht, Barbara.....34	Bassett, Jordan.....4	Brasfield, Francesca.....78	Coburn, James47	Cohen, Achraf54, 55, 57
Alderfer, Lucas.....54	Baugus, Laura83, 84, 85	Breed, Glenn21	Cohen, Sophia.....24	Coker, Braden.....47
Alger, Sydney.....23	Baxter, Jordan10	Brichetto, Kyla47	Cokor, Vio48, 50	Collum, Brandon.....62
Alikhani, Zahra32	Beckman, Katherine86	Briley, Gabriel.....59	Conolly, Orion.....60	Cook, Daniel47
Allen, Min.....74	Bennett, Paris46	Brooks, Hannah.....66	Cook, Josh.....28, 30, 54, 55	Cook, Judson.....47
Allgeyer, Julia.....26	Benny, Luca58	Brooks, Lane.....18	Cook, Joshua.....61	Coonrod, Joshua.....61
Allgyer, Winfred.....53	Benton, Kira.....58	Broom, Gabriel44	Cosio Lima, Ludmila.....65, 70	Costilow, Tori29
Alonzi, Eddy58	Benton, Tristany86	Brown, Christopher59	Cox, Chantel.....86	Cox, Charley.....50
Amer, Maher58, 61	Benz, Pamela.....35, 40	Brown, Jasmine49	Cramer, Cassie50	Crawford, Lindsey60
Amos, Rin2	Bereki, Bill.....68	Brown, Maggie16, 17, 77	Crawley, Amy9, 68	Crawley, William9
Anderson, Davin58	Besmer, Ethan60	Brown, Megan34, 36, 37, 42	Creighton, Ashley.....60	Croley, Jessica.....73
Andresen, Kathy72	Bessemer, Elora.....50	Brown-Duncan, Norma18	Croteau, Amanda.....34	Crow, Bethany53
Andrews, Kameron74	Bethea, Daniel58	Bruner, Bonnie.....27, 31	Crownover, Kel.....5, 6	Cruikshank, Damien.....83
Archer, Marcus.....16	Bhandari, Nirdosh.....59	Brustad, Brett.....60	Cunningham, Brenna.....29	Currency, Alayna52
Arellano, Matthew58	Bickham, Chris.....48	Bryant, Deverious66	Cuzan, Alfred.....16, 17, 18	Cwu Rodriguez, Luis.....59
Arita, Shoei.....23	Billings, Philip.....23	Bryant, Luke54		
Arruda, James73, 74	Bilski, Joseph.....47	Bryant, Sabrina79	D	
Asmuth, Thomas.....4	Bineshtarigh, Kamran60	Bryson, Alyssia60	Dake, Christopher66, 68, 69,70, 71, 72	Dalton, Allie.....29
Atchinson, Ameila.....72	Bishop, Denali.....66	Bui, Thanh.....63	Davis, Alana41	Davis, Brenton52
Atchison, Ronald.....82	Bishop, Yasemin.....4	Buker, Nicholas.....9		
Atchison, Thadd47	Bjornstad, Alexis.....30, 49	Bullock, Blake.....58		
	Black, Aiden45	Burgen, Ben2		
	Black, Elizabeth73, 75	Burks, Leia81		
	Black, Logan58	Burleson, Keirstin.....10		
	Blalock, Lisa.....73	Burnett, Maddie4		
	Blanchard, Cole.....47	Byrd, Ashley16		
	Blas, Matthew60	Byrd, Tristan74		
	Blazer, Christopher46			
	Blouin, Liliana4	C		
	Blyn, Robin.....11, 12, 16	Caffrey, Jane.....34		
	Bogantes, Viktoria.....26, 29	Cameron, Þórunn.....44		
	Bokowski, Cole.....58	Campagna, Adrianna.....5		
		Campbell, Jamie66, 69		
		Campbell, Lily-ana.....46		
		Canvar, Katie66		
		Capristo, Gia40		
		Carr, Declan24		
		Carr, Richard.....82, 83, 86, 87		
		Carrillo, Denise.....28		
		Carroll, Brady47		
		Carter, Anessa.....28		
		Cavazos, Robert.....47		

AUTHOR & FACULTY INDEX

Dawson, Bianca.....35, 37, 39	Fenger, Nicholas.....75	Griffo, Jay.....50	Ho, Barrett.....21
Day, Kimberly.....74, 76	Fiedler, Gabe.....47	Grissom, Maegan.....11	Hobbs, Chasidy.....48, 50, 51, 52
de Oliveira Camargo, Pedro.....54	Finley, Michelle.....78	Grizzle, Danielle.....47	Hobbs, Jonathan.....40
Dean, Trinity.....73	Florentino De Assis, Clay.....48	Groundwater, Collin.....72	Hodgdon, Devon.....47
Decker, Ashley.....21	Floyd, Keith.....60, 61	Guidroz, John-Michael.....47	Hodges, Kelsey.....67
Decker, Matthew.....47	Fogarty, Quinn.....46	Guillen, Jasmin.....23	Hoffman, Matthew.....59
Defelix, Syn.....4	Folk, Emma.....73, 74	Gurley, Ethan.....59	Hoffman, Sonja.....85, 87
DeGraff, Luke.....73	Fonder, Carrie.....3, 4, 5, 6, 7, 8, 9	Guttmann, Rodney.....27, 28, 30, 31,32, 33, 77	Holloway, Kate.....12
DeJesus, Natalia.....59	Fontana, Caytriana.....46		Holman, Faith.....81
Derosa, Mia.....67	Foulkrod, Michele.....35	H	Holmes, Michial.....58
Dickens, Sarah.....10	Fradejas, Justin.....61	Habib, Saman.....73	Homandberg, Sophie.....46
Dieguez, Alejandro.....47	Fraga, Madeline.....67	Haddock, Lily.....59	Hoskins, Payton.....46
Dillersberger, Lucia.....49	Francia, Guillermo.....45	Hagler, Madison.....74	Huertas Rodriguez, Arimsay.....25
Dorr, Sarah.....10	Francis, Hope.....33	Halonen, Jane.....75	Huff, Damian.....62
Dougherty, John.....4	Fraser, Michael.....9	Hamilton, Andres.....59	Hughes, Alexis.....58
Downing, Jean.....68	Fredrickson, Shyan.....84	Han, Gail.....55	Hughes, Daniel.....60
Doyle, Colin.....47	Fredriksson, Matthew.....60	Handley, Holley.....65	Hume, Nikolas.....62
Drake, Victoria.....40	Freeman, Ashley.....46	Hansen, Aric.....58	Huson, David.....74
Dukes, Emma.....77	Freeman, Jackson.....18, 19	Hardin, Jacob.....30	Hydes, Cassidy.....68
Duncan, Marci.....21	French, Allison.....46	Hardy, Taylor.....50	
Duphiney, Natalie.....16	French, Jurnee.....16	Harper, Anne.....35, 40, 42	I
Dykes, Jady.....47	Fullmer, Layla.....86	Harrington, Emma.....76	Ibrahim, Sally.....74
		Harris, Aniya.....77	Irwin, Steven.....48
E	G	Harris, Emily.....46, 47, 51, 78	
Earl, Noah.....53	Gaither, Blake.....11	Harris, Melissa.....47	J
Ebbighausen, Ryan.....59	Ganatchian Barros Pilli, Pedro.....23	Harris, Shelby.....58	Jackman, Tiffany.....60
Eckles, Tia.....5	Garbison, Jake.....61	Harrison, Jordan.....59	Jackson, Caleb.....61
Eells, Amber.....49	Garner, Nathan.....58	Harrison, Sandy.....5	Jackson, Devon.....46
Egan, Patrice.....23, 24	Garrett, John.....49, 50	Harrynarine, Jordyn.....48	Jain, Arav.....37, 63
Ehrhardt, Jennifer.....81	Garrity, Caren.....85	Hathaway, Savannah.....48	James, Ebony.....47
Ellis, Gavin.....58	Garthwaithe, Kristy.....11	Hathaway, Timothy.....86	Janosik, Alexis.....26, 27, 28, 31, 32
Ellis, Hannah.....47	Gartman, Kassandra.....60	Hatley, Samantha.....19	Jaramillo, L. David.....40
Ellison, Makayla.....11	Gautam, Amrita.....59, 60	Havard, Byron.....65	Jefferson, Angelique.....74
Elmore, Rowe.....7, 73	George, Michael.....81	Hawkins, Richard.....25	Jennings, Chase.....12
Emanuel, Keegan.....46	Gerow, Jordyn.....47	Hearn, Alyssa.....46	Jensen, Aidan.....56
Emiro, William.....59, 60	Gilliam, Frank.....30, 52	Heggdal, Christopher.....62	Jimenez, Andrew.....55
Enkey, Olivia.....50	Gilmer, Nikki.....49	Hemming, Trevor.....36	Jimmerson, Bianca.....78
Ennis, Caroline.....7	Glover, Ashli.....47	Henderson, Jay.....47	Jipson, Jim.....6, 7
Esche, Zane.....59	Gonzalez, Cristina.....30	Henderson, Kelley.....66, 67, 68, 69, 71	John, Caroline.....44
Esteves, Rafael.....54	Gonzalez, Joel.....60	Hendren, Johnathan.....73	Johnson, Al.....6
Evans, Jocelyn.....77, 78	Gorman, Jake.....65	Hennick, Victoria.....36	Johnson, Brianna.....40
Ezeogu, Will.....73	Gougeon, Ramie.....3	Henry, Daesha.....37	Johnson, Dawn.....50
	Grammer, Chandler.....30	Henry, Rayne.....6	Johnson, Maggie.....12
F	Grant, Gavin.....50	Hensor, Ben.....36	Johnston, Mike.....30
Farkas, Carson.....58	Gratz, Eli.....47	Hernandez, Jacob.....55	Jollie, Bethany.....6
Farkas, Hudson.....60	Graves, Christina.....47	Hernandez, Magdalena.....79	Jones, Brendon.....60
Farre, Joshua.....50	Gray, Julie.....64, 65	Herring, Joseph.....6, 7, 8	Jones, Bryce.....49
Feliciano, Genesis.....84	Green, Ethan.....47	Hillman, Mikah.....2	Jones, Jacob.....47
Feliciano Rodriguez, Benjamin.....61	Griffith, Tyler.....49, 50		Jones, Malcolm.....59

AUTHOR & FACULTY INDEX

Joseph, Nika.....	77	Legaspi, Josh.....	36, 37, 38	Mays, Alishah.....	68	Mowe, Sarafina.....	31
Josephs, Matthew.....	12	Lehman, James.....	61	McCabe, Kat.....	76	Mrahi, Nadia.....	74
Joy Luayon, Desirie.....	49, 50	LeMay, Stephen.....	45	McClain, Emmalee.....	54	Muncy, Brooklyn.....	46
Ju, Beomsoo.....	68	Lepley, Julia.....	12	McCloskey, Nicolas.....	77	Munkelt, Kendra.....	69
Juchniewicz, Rachel.....	11	Levesque, Christopher.....	78	McCosker, Jhett.....	68	Murray, Mads.....	49
Jurado, Eduardo.....	47	Li, Claudia.....	72	McCullough, Kaleigh.....	25	Murray, Tyler.....	59
K							
Kaiser, Jack.....	6	Liebens, Johan.....	52	McCurdy, Zoe.....	75	Murry, Aliana.....	48
Kammerer, Sam.....	62	Linkous, Allie.....	31, 32	McDonald, Gabby.....	48	Myers, Amelia.....	48
Karaskova, Isabella.....	46	Lino, Farah.....	37, 39	McDonald, Tommy.....	62	N	
Kass, Steven.....	74, 76	Lo, Shurzong.....	46	McGee, Skyler.....	62	Neal, Melody.....	80
Kelley, Bradley.....	68	Lombardo, Chase.....	47	McGreger, Connor.....	61	Nearbin, Dylan.....	62
Kesharwani, Tanay.....	32, 35, 37, 38, 63	Londoni, Martha.....	31	McGurk, Declan.....	37, 63	Neidigk, Jason.....	38
Kidder, Ivan.....	47	Long, Brandon.....	58	McLean, Liberty.....	59, 60	Nelson, Andrea.....	66
Kilburn, Hannah.....	83	Lopez, Vanessa.....	61	McLeod, Paul.....	30	Nelson, Landon.....	75
Killian, Isabella.....	47	Lorenz, Roman.....	50, 51	McMullen-Kadi, Hana.....	46	Ness, Georgia.....	38
Killingsworth, Gillian.....	79	Lorton, Bryce.....	7	McQueen, Desi.....	77	Ngafeeson, Lamb.....	75
Killough, Austin.....	45	Lott, Jordyn.....	13	Mead, James.....	23	Nguyen, Giang-Nguyen.....	63, 64
Kinfe, Jesse.....	48	Love, Bradley.....	77	Melcher, Jennifer.....	2	Nguyen, Rosemary.....	40
King, Erin.....	72	Lucas, Kelsie.....	48	Mendoza, Yesi.....	4	Nicholson, Brianna.....	32
King, Kaden.....	47	Lumsden, Kimiko.....	10, 11, 12, 13, 14, 15, 16, 21, 22	Menser, Kobi.....	54	Nimblett, Elizabeth.....	48
Klein, Evan.....	84	Luu, Jessica.....	47	Meredith, Brianna.....	35	Nincevic, Lilly.....	39
Knettle, Gavin.....	16, 17	M				Meredith, Laura.....	72
Knight, Lanie.....	17	Macareno Lopez, Andrea.....	25	Meronvil, Jonathan.....	3	Niznik, Stephan.....	11
Koether, Kaylee.....	5, 6	Mace, Eli.....	17	Meyers, Jackson.....	46	Noble, Cory.....	48
Kowu, Nelson.....	48, 49, 50, 51	Magalhaes Lins, Guilherme.....	68	Middleton, Evan.....	58	Nolen, Albertina.....	50
Kraus, Sophia.....	23	Mahawongnan, Dena.....	37	Miller, Addison.....	80	Norman, Jeanette.....	68
Kreuser, James.....	59	Mahmoudian, Armaghan.....	67	Miller, Greg.....	61	Nowling, Jonathan.....	47
Krouse, Briley.....	31	Mahmud, Istiak.....	22	Miller, Lexi.....	77	Nyameasem, Bright.....	48
Kruse, Jack.....	47	Mallard, Angelique.....	68	Miller, Shane.....	34, 38, 41, 42	O	
L							
Lajmi, Ajay.....	34, 36, 37, 38, 39	Mallu, Gopi Shankar.....	45, 57	Miner, Emily.....	22	OConnell, Emily.....	58
Lamb, Molly.....	68	Mann, Leigh.....	12, 48	Mink, Dustin.....	44	Odea, Payton.....	13
Landry, Tanner.....	61	Marcum, Danita.....	62	Mitchell, Jonah.....	61	Okeke, Chigozie.....	48
Langford, Jaden.....	61	Mariani, Emily.....	17	Moen, Ethan.....	62	Oliveira De Camargo, Davi.....	61
Langille, Austin.....	65	Marier, Gray.....	22	Moench, Liberty.....	77	Opava, Caleb.....	59
Larence, Sheryl.....	7	Markowitz, John.....	5, 7, 8	Mohlmann, Nicholas.....	10, 11, 15	Orrantia Marmol, Isabella.....	50
Larkin, Gabrielle.....	46	Marshall, Jayce.....	59	Molek, Karen.....	40, 43	Ortega, Alexander.....	76
Larsen, Kacey.....	48, 50	Martin, Ashley.....	73	Molina, Jesus.....	53	Ortiz-Hernandez, Denzel.....	34
Laws, Shane.....	59	Martin, Gabriel.....	81	Montgomery, Peter.....	80	Oswald, Connor.....	61
Lazare, Lawrence.....	7	Martinez, Guadalupe.....	48	Morales, Emily.....	13	Owens, Emma.....	46
Le, Vy.....	68	Martins Camperlingo Pereira, Marcus.....	47	Morcate, Jack.....	46	Owens, Trey.....	54
Ledford, Rachel.....	56	Masih, Prerna.....	28, 29, 31, 32, 33	Moreno Rodriguez, Gyleishka.....	7	Owusu-Daaku, Kwame.....	48, 49, 50, 51
Lee, Chancy.....	39	Mason, Austin.....	10	Morgan, Alli.....	61	P	
Lee, Heaven.....	79, 84	Mattes, Joyce.....	37	Morgan, John.....	49, 50	Paalam, Emmanuel.....	56
Lee, Landon.....	58	Maxwell, Abbigale.....	82	Morman, Kendall.....	26	Packwood, Madeline.....	49, 50
Lee, Youngil.....	28, 66, 68	Maxwell, Kaiden.....	48	Morris, Cheryl.....	11	Paczkowski, Rebecca.....	46
		May, Jacob.....	47	Morris, Mariah.....	72	Pajuelo, Cynthia.....	48
		Mayo, Elijah.....	35, 40	Morrison, Megan.....	7	Palewicz, Jade.....	58
				Morse, Tim.....	63, 64		
				Mouissa, Hecham.....	58		

T

Talbert, Darrius47
 Talcott, Simon28
 Tamimi, Kellie57
 Tannous, Elizabeth 15
 Tarrance, Maddie.....38, 41
 Tawiah, Josiah.....48, 50, 51
 Taylor, Immanuel47
 Thai, Timothy 62
 Thayer, Bailey..... 50
 Thomas, Jacqueline.....72
 Thomas, Sarianna.....76
 Thompson, Aanthony58
 Tilley, Maliya8
 Tims, Brandon..... 48
 Tomso, Gregory77, 78
 Torino, Hanna.....18, 20
 Torres, KJ 60
 Tracy, Jacob.....37, 39
 Tran, Gary..... 59
 Tran, Viktor 62
 Tran, Xuan.....23, 24, 25, 26
 Travis, Reid58
 Truax, Sydney32
 Trushel, Delaney.....70
 Tucker, Aaliyah.....71
 Turner, Teaun58
 Turner-Ward, Domani.....51, 52

U

Ujj, Laszlo 62
 Urquhart, Dane..... 49

V

Valente, Kelsey22
 Vallo, Selena..... 48
 Vann, Mishael..... 48
 Vargas, Veronica 54
 Vazquez, Lydia.....47
 Velez, Ally33
 Velez, Heather47

W

Wade, Aaron45, 57, 74
 Wagner, Hunter..... 60
 Walden, D’Andre 59
 Walker, Aneta 64
 Walsh, Chase.....49, 50

Walters, Grayson..... 62
 Warrick, Riley 18
 Waterhouse, Chloe73
 Watkins, Meredyth 15
 Watkins, Samantha.....41
 Weaver, Savannah.....71
 Webb, Tanner47
 Webster, Murphy9
 Weeks, Olivia71
 Wehmeyer, Ryan 62
 Wei, Dr. June (Jun).....22
 Welsh, John 62
 Wetherell, Hannah 15
 Wetherington, Halie..... 56
 Whetzel, Anna..... 48
 Whisman, Allie..... 48
 White, Caden 61
 White, Noah52
 White, Tyler53
 Whitley, Gracie16, 17, 18
 Wigington, Tamari.....52
 Wilder, Caleb..... 21
 Williams, Adam..... 15
 Williams, Alexandria..... 48
 Williams, Julie.....23
 Williams, Kaitlyn.....60
 Williams, Mackenzie.....71
 Williams, Sean..... 16
 Williamson, Keenan 62

Willis, Jennifer 34, 41, 42
 Winburn, Allysha3
 Winn, Hannah.....72
 Wolfe, Lindsay 33, 34
 Womack, Charlie.....43
 Wood, Michael.....58
 Woods, Nick58
 Worley, Ryan.....58
 Worth, John.....2, 3
 Wright, Dylan.....57
 Wright, Owen76
 Wrobel, Kiera73

Y

Yetter, Kilea40, 43
 Young, Aubrey 18
 Young, Leo52
 Young, Lilly 46
 Yourist, Connor60
 Youssef Elsayed, Tarek53

Yu Lee Barberan, Isabella 48

Z

Zeigler, Zion..... 12
 Zhang, Cheng59, 62
 Zubler, Sharon 62



Office of
Undergraduate Research
UNIVERSITY *of* WEST FLORIDA