UNDERGRADUATE RESEARCH
SYMPOSIUM
2024

Wednesday, March 27

Presented by
Tallahassee Community College
Council on Undergraduate Research

Thanks to our Sponsors

This year's Undergraduate Research Symposium would not have been possible without the very generous support of the TCC Foundation, which has financially supported the program since its inception. Their continued support provides for the production of publicity materials, the printing of high-quality full-color posters, and cash prizes for students. We are so grateful to all of the TCC Foundation's generous donors for their support of this worthy cause. We also welcome a first-time sponsor, Publix, for their in-kind contribution of refreshments for our closing awards ceremony.



Publix.

Award Category	Award	Amount	Winner(s)
Oral Presentations in Science, Technology, Engineering, and Math	Third Place	$100	Jeniya Harrison
	Second Place	$150	Juli Balkom and Hannah Lee
	First Place	$200	Sally Clavell and Kara Lane-Lightfoot
Oral Presentations in Social Sciences and Humanities	Third Place	$100	Davisha Hardy
	Second Place	$150	Alayna Montague
	First Place	$200	Grace Horner
Three-Minute Thesis in Science, Technology, Engineering, and Math	Third Place	$100	Leila Kouanda
	Second Place	$150	Edward Romero
	First Place	$200	Jonathan Norton
Three-Minute Thesis in Social Sciences and Humanities	Third Place	$100	Walter Culley
	Second Place	$150	Ryan Henry
	First Place	$200	Reanna Byrd
Posters in Science, Technology, Engineering, and Math	Third Place	$100	Kamden Hatten
	Second Place	$150	Maggie Tterlikkis
	First Place	$200	Yann Nassa
Posters in Social Sciences and Humanities	Third Place	$100	Quentin Stevens
	Second Place	$150	Joel Matthews
	First Place	$200	Destinee Britto
Visual Arts	Third Place	$100	Audrey Harlacher
	Second Place	$150	Eliana Alger
	First Place	$200	John Bump
Performing Arts	Second Place	$200	Janelle Dixon
	First Place	$150	Elizabeth Blair
Best Paper		$200	Michele Fulbright

SCHEDULE AT A GLANCE

9:00-9:15	**Welcome and Opening Remarks** FPAC Lobby
9:30-10:45	**Oral Presentations** FPAC 104, 215, and 216
11:00-12:00	**3-Minute Thesis Video Presentations** FPAC 104 and via Zoom @ 992 4735 3849 FPAC 215 and via Zoom @ 916 6469 9997
12:00-1:30	**Poster Presentations** FPAC Lobby
1:45-2:45	**Visual Arts Artist Talks** FPAC 104
3:00-3:30	**Performing Arts** FPAC 104
4:00-5:00	**Reception and Awards** FPAC Lobby

FULL SYMPOSIUM SCHEDULE

9:00-9:15 — Welcome and Opening Remarks, FPAC Lobby

9:30-10:45 — Oral Presentations

FPAC 104

Moderator: Ross Brooks

"A Patterned Universe"
Juli Balkom and Hannah Lee
Faculty Advisor: Dr. Erika Williams

"The Interaction Between the Cilantro Gene (OR6A2) and Artificial Grape Flavoring: A Taste Perception Study"
Sally Clavell and Kara Lane-Lightfoot
Faculty Advisor: Dr. Renee Gordon

"Native Species"
Dianne Cruz
Faculty Advisor: Dr. Rebekah Lane

"How We Can Limit the Amount of Greenhouse Gases in the Atmosphere"
Jeniya Harrison
Faculty Advisor: Dr. Beth Huettel

"The Mark of Cancer"
Tanner Robinson
Faculty Advisor: Nicolette Costantino

FPAC 215

Moderator: Michelle Peruche

"Understanding the Sustainability Risks in Swift Fast Fashion Trends"
Cyreen Abichou
Faculty Advisor: Dr. Joseph McNeil

"Growth Mindset within a Leadership Role"
Alayna Montague
Faculty Advisor: Dr. Daniel Beugnet

"The Advertisement of Stimulants to School-Aged Children and Their Parents for ADHD"
Laney Montgomery
Faculty Advisor: Nicolette Costantino

FPAC 216

Moderator: Dr. Cathryn Meyer

"The Connection Between the Harlem Hellfighters and 'Leaving for the Front'"
Davisha Hardy
Faculty Advisor: Jenny McHenry

"Space Monkey See, Space Monkey Do: Fight Club's Appeal to Modern Society's Middling 'Male Minority'"
Grace Horner
Faculty Advisor: Jenny McHenry

"The Life and Legacy of Dorothy West"
T'Erica James
Faculty Advisor: Teresa Paliwoda

"'War Girls': A Poetic Analysis of 20th Century Feminism and How It Shapes Today"
Isabella Rios
Faculty Advisor: Jenny McHenry

11:00-12:00 — Three Minute Thesis Video Screenings

FPAC 104 and via Zoom @ 992 4735 3849

Moderator: Dr. Renee Gordon

"The Final Showdown: Mobile Apps vs. Websites"
Arinzechukwu Abanah
Faculty Advisor: Dr. Renee Gordon

"Is Hydrogen the Fuel of the Future?"
Ernand Alzenor
Faculty Advisor: Dr. Renee Gordon

"The Role of a Psychologist"
Terrianna Brow-Hendrickson
Faculty Advisor: Donmetrie Clark

"Prime Hydration's Effectiveness"
Crete Carter
Faculty Advisor: Dr. Kimberly Davis

"Is Roman Concrete a Solution to Erosion of Civil Infrastructure?"
David Dixon
Faculty Advisor: Dr. Renee Gordon

"Dark Matter"
Jailynn James
Faculty Advisor: Dr. Renee Gordon

"Optimizing Sleep... by Eating Protein?"
Shelby Jones
Faculty Advisor: Dr. Rebekah Lane

"The Effect of Excessive Use of Social Media on the Mental Health of Teenagers"
Leila Kouanda
Faculty Advisor: Dr. Renee Gordon

"Automated vs. Manual Systems"
Trevor Lopez
Faculty Advisor: Dr. Renee Gordon

"Electrical Technology is Essential to Earth"
Timothy McCall
Faculty Advisor: Dr. Renee Gordon

"The Effects of Sunlight on Human Behavior"
Jonathan Norton
Faculty Advisor: Will Owens

"Human Technological-Neurological Integration"
Ryan Prince and Shaune Jessemay
Faculty Advisor: Dr. Renee Gordon

"Incorporating Renewable Energy in our Everyday Lives"
Makiah Rogers
Faculty Advisor: Dr. Renee Gordon

"The Interaction Between the Cilantro Gene (OR6A2) and Artificial Grape Flavoring: A Taste Perception Study"
Edward Romero
Faculty Advisor: Dr. Renee Gordon

"Commercial Space Flight"
Abel Samson
Faculty Advisor: Dr. Renee Gordon

11:00-12:00 — Three Minute Thesis Video Screenings

FPAC 215 and via Zoom @ 916 6469 9997

Moderator: Shekitta Allen

"How Exercise Affects Cognition"
Reanna Byrd
Faculty Advisor: Dr. Gina O'Neal-Moffitt

"The Complexity and Mechanisms of Visual Perception"
Walter Culley
Faculty Advisor: Dr. Gina O'Neal-Moffitt

"Noise Sensitivity in Autism: Scientific and First-Hand Perspectives"
Michelle Fulbright
Faculty Advisor: Dr. Gina O'Neal-Moffitt

"The Need for Humanities in Healthcare: Bridging the Divide"
Elizabeth Fussell
Faculty Advisor: Dr. Daniel Beugnet

"Anger in Children: The Effects and Responses to How Children Interact with Anger"
Ryan Henry
Faculty Advisor: Dr. Gina O'Neal-Moffitt

12:00-1:30 — Poster Presentations

FPAC Lobby

Moderator: Greg Schaberg

"Investigating the Relation Between Action Potential Quantity and Extent of Muscle Contraction"
Orire Adeniyi
Faculty Advisor: Dr. Wade Henning

"Autism in Women: Diagnosis, Symptoms, and Early Detection"
Zikora Aliche
Faculty Advisor: Dr. Renee Gordon

"Galileo vs. Aristotle"
Luna Ampuero
Faculty Advisor: Dr. Renee Gordon

"Do You Like the Beach?"
Karla Backey
Faculty Advisor: Dr. Renee Gordon

"Did the Annunaki's Build the Egyptian Pyramids?"
Karina Beasley
Faculty Advisor: Dr. Renee Gordon

"NMN Supplementation and its Ability to Reverse the Aging Process"
Justin Bolt
Faculty Advisor: Dr. Renee Gordon

"The Effect of Divorce on Children's Mental Health in America "
Destinee Britto
Faculty Advisor: Dr. Renee Gordon

"Does the Structure of Our Cities Affect Us Psychologically?"
Xyonna Carreia
Faculty Advisor: Dr. Renee Gordon

"The Impact of Plant-Based Diets on Microbiota and Cardiovascular Health: A Review of Recent Research"
David Carrillo
Faculty Advisor: Dr. David McNutt

"Harnessing AI: Advancing Clean Energy Technology Using Artificial Intelligence"
Julian Daniel
Faculty Advisor: Dr. Renee Gordon

"Emergence from Systems of Particles"
Kyle Devlin
Faculty Advisor: Dr. Joseph McNeil

"Global Guidelines to Preventing Malaria"
Morgan Edwards
Faculty Advisor: Dr. Margelet Hamilton

"Gender Ratio Dynamics in Historically Black Colleges and Universities (HBCUs)"
Widens Filsaime
Faculty Advisor: Dr. Renee Gordon

"Laws of Motion"
Eric Fresquet
Faculty Advisor: Dr. Renee Gordon

"Can You Hear the Music?"
Kamden Hatten
Faculty Advisor: Dr. Renee Gordon

"The Effects of Air Pollution vs. Cardiovascular Health"
Jordan Henry
Faculty Advisor: Dr. Renee Gordon

"Deciphering the Dance: Exploring Diffusion Dynamics through Vinegar-Agar Cube"
O'Tisha Jones
Faculty Advisor: Dr. Renee Gordon

"The Effects of Nursing Burnout on Hospitals"
Aheim King
Faculty Advisor: Dr. Bryan Hooper

"The Origins and Genetic Changes of Covid-19"
Anna Manning
Faculty Advisor: Dr. Renee Gordon

"Marine Life Affected by Contaminants and the Oil Spill in the Gulf of Mexico"
Charlene Marshall
Faculty Advisor: Dr. Renee Gordon

"The Interaction Between the Cilantro Gene (OR6A2) and Artificial Grape Flavoring: A Taste Perception Study"
Janessa Martin and Aakanksha Pathak
Faculty Advisor: Dr. Renee Gordon

"Urban City Development with the Integration of Solar Energy"
Joel Mathew
Faculty Advisor: Dr. Renee Gordon

"The Applications of AI for Protein Synthesis and Design"
Zachary Meeks
Faculty Advisor: Dr. Donya Samara

"Exploring the Impact of Age on Road Safety and Driving Behavior"
Jephte Moise
Faculty Advisor: Daniella Petit

"My Body My Choice"
Joi Monsanto
Faculty Advisor: Dr. Renee Gordon

"A World Without Human Teachers?"
Yann Nassa
Faculty Advisor: Dr. Renee Gordon

"Full Moon's Effect on Humans"
Taniyha Newsome
Faculty Advisor: Dr. Renee Gordon

"Hydrogen vs Electric"
John Polisknowski
Faculty Advisor: Dr. Renee Gordon

"Physician Assistants: The Hidden Hero"
Makayla Prewitt
Faculty Advisor: Dr. Renee Gordon

"The Impact of the Gut's Microbiome Upon Mental Health"
Chloe Rach, Allison Ochoa, and Laney Attus
Faculty Advisor: Dr. David McNutt

"Calibrating CHARON Silicon Detector Array Using Gaussian and Crystal Ball Functions"
Tristin Sabbage
Faculty Advisor: Dr. Joseph McNeil

"Are You A Math Person? Unraveling the Roots of Math Aversion"
Cimona Seagraves
Faculty Advisor: Dr. Renee Gordon

"Genetics of Human Behavior"
Kailar Shaw
Faculty Advisor: Dr. Renee Gordon

"Examining the Behavioral Effects of Video Game Violence"
Mason Simmons
Faculty Advisor: Dr. Renee Gordon

"Brushless Direct Current Motor"
Shereece Smith, Hannah Barron, Noved Ahmed, Revan Khan, William Van Royen
Faculty Advisor: Dr. Joseph McNeil

"Dissecting 'One Piece': How art imitates Life"
Quentin Stevens
Faculty Advisor: Dr. Renee Gordon

"Exploring the Use of Ultrasound for Pain Treatment in the Human Body"
Ben Stone
Faculty Advisor: Dr. Renee Gordon

"The Health of Tallahassee's Waterways 2024"
Maggie Tterlikkis
Faculty Advisor: Dr. David McNutt

"The End of Capitalism: The Great American Evolution"
Jaylen Wilson
Faculty Advisor: Guy Dormeus

"Investigating the Behavioral Response of the Florida Bark Scorpion (Centruroides Gracilis) to Stimuli and Food"
Emanuel Wright
Faculty Advisor: Dr. Renee Gordon

1:45-2:45 — Visual Arts Artist Talks

FPAC 104
Moderator: Dr. Amber Cresgy

"The Flow of Motivation"
Eliana Alger
Faculty Advisor: Ljiljana Obradovic-Edmiston

"Introspection"
Ethan Bonham-Reed
Faculty Advisor: Ljiljana Obradovic-Edmiston

"Self-portrait"
Chloe Brown
Faculty Advisor: Ljiljana Obradovic-Edmiston

"Overlooked"
John Bump
Faculty Advisor: Julie Baroody

"Ecological Erosion"
Dina Cisneros
Faculty Advisor: Dr. Renee Gordon

"Broken Couch Club Band Poster"
Sinclair Franz
Faculty Advisor: Ljiljana Obradovic-Edmiston

"Handmade Jewelry"
Audrey Harlacher
Faculty Advisor: Julie Baroody

"I Will Remain"
Audrey Harlacher
Faculty Advisor: Ljiljana Obradovic-Edmiston

"Food Sustainability Fights Hunger in Tallahassee"
Kyh Hayes
Faculty Advisor: Dr. Renee Gordon

"Fly In The Fryer"
Kaitlin Hoebich
Faculty Advisor: Ljiljana Obradovic-Edmiston

"Star Dreamer"
Makayla Holmes
Faculty Advisor: Ljiljana Obradovic-Edmiston

"Friendship"
Arabella Hudson
Faculty Advisor: Kelsie Parker

"Jungle Time for You"
Flood Hulbert
Faculty Advisor: Ljiljana Obradovic-Edmiston

"The Wonders of Jewelry Making"
Matthew Kratofil
Faculty Advisor: Julie Baroody

"Beginning to Create Jewelry: Finding Beauty in the Mishaps"
Citlali Patino
Faculty Advisor: Julie Baroody

"A Day in a Castle"
Jakarbi Pemberton
Faculty Advisor: Ljiljana Obradovic-Edmiston

"Where Is the Moon?"
Arianna Perruzzi
Faculty Advisor: Ljiljana Obradovic-Edmiston

"Out with the Old?"
Lainey Smith
Faculty Advisor: Ljiljana Obradovic-Edmiston

"Breathing Life into the Inanimate: Turning Silver into Art"
Keira Tuten
Faculty Advisor: Julie Baroody

"Broken Lives in the World Around Us and How They Can Change an Image"
Catherine Winter
Faculty Advisor: Joshua Flores

3:00-3:30 — Performing Arts

FPAC 104
Moderator: Donya Samara

"Bird"
Elizabeth Blair
Faculty Advisor: John Schultz

"Lost and Found"
Janelle Dixon
Faculty Advisor: John Schultz

4:00-5:00 — Reception and Awards, FPAC Lobby

PRESENTER ABSTRACTS

Organized by Event and then alphabetical by student surname

ORAL PRESENTATIONS

UNDERSTANDING THE SUSTAINABILITY RISKS IN SWIFT FAST FASHION TRENDS

Cyreen Abichou
Faculty Sponsor: Dr. Joseph McNeil

The phenomenon of fast fashion, epitomized by its rapid trend turnover and mass production, has revolutionized the global garment industry. Through a multidisciplinary lens encompassing consumer behavior, supply chain management, and environmental science, we can illuminate impacts of fast fashion on society, economy, and ecology. This research endeavor is aimed at unraveling the dynamics of fast fashion trends and exploring sustainable pathways forward within the industry. Furthermore, this study outlines proposed strategies and interventions aimed at promoting sustainable practices within the fast fashion industry. From advocating for transparency and accountability in supply chains to championing ethical sourcing and circular economy initiatives, we strive to pave a path towards a more socially responsible fashion industry. Through efforts and informed action, we aspire to understand the risks inherent in swift trends while advocating for sustainable solutions that uphold the principles of quality, equity, and environmental stewardship.

A PATTERNED UNIVERSE

Juli Balkom and Hannah Lee
Faculty Sponsor: Dr. Erika Williams

Our investigation delved into synchronous and parallel formations and processes prevalent in various realms encompassing life, space, and chemistry. Employing a multidisciplinary approach merging scientific inquiry with philosophical contemplation, we endeavored to shift perspectives. Recognizing the value of all knowledge and the plethora of ideas contributing to a broader understanding, we embarked on a journey to explore the interconnectedness of the universe from both philosophical and scientific lenses, laying a foundation for future inquiries and a deeper comprehension of the world. Central to our investigation was an exploration of the Fibonacci sequence and its pervasive manifestations in nature and the composition of DNA. Drawing intriguing parallels to sacred geometry and statistical principles, our analysis revealed a multitude of similarities upon comparison across diverse domains. These parallels even transcend biological kingdoms, extending to cosmic structures such as the Milky Way and the helical configuration of DNA.

THE INTERACTION BETWEEN THE CILANTRO GENE (OR6A2) AND ARTIFICIAL GRAPE FLAVORING: A TASTE PERCEPTION STUDY

Sally Clavell and Kara Lane-Lightfoot
Faculty Sponsor: Dr. Renee Gordon

A study was conducted where 100 individuals in Tallahassee were surveyed to understand the Cilantro Gene. This gene is known to make cilantro taste like soap to certain people. This study focuses on the interaction between the gene and artificial grape flavoring, investigating whether this flavoring impacts the perception of taste in individuals with and without the gene, particularly noting that artificial grape flavoring may be less appealing to those without the gene due to an association with the taste of sweat. The methodology involves randomly selecting participants from the Tallahassee area and having them 1) taste a grape, 2) eat cilantro, and 3) taste a grape-flavored Jolly Rancher. Following these tastings, a questionnaire designed to eliminate bias and prior knowledge of the study's purpose is administered. This research aims to enrich the understanding of the OR6A2 gene's influence on taste perception and its broader implications on daily life.

NATIVE SPECIES

Dianne Cruz
Faculty Sponsor: Dr. Rebekah Lane

The purpose of my study was to gather knowledge and information about native species found in Florida. The way I did my project was with any encounter with animals or plants around me, I would take pictures and then investigate what they were and if they were native or not. However, that eventually became hard because I did find lots of species that weren't native at all. So, I then heard about Wakulla Springs and how they held something called a boat tour that then shows you around the Spring and what native species it has, and I found that they had a lot. I think this was important as an application to the real world because the function of each species can be very beneficial to human society and the environment itself.

THE CONNECTION BETWEEN THE HARLEM HELLFIGHTERS AND "LEAVING FOR THE FRONT"

Davisha Hardy
Faculty Sponsor: Jenny McHenry

This presentation "Oblivion" discusses the contrasts between the Harlem Hellfighters and the poem "Leaving for the Front" by Alfred Lichtenstein. The Harlem Hellfighters are black American war veterans who fought in WWI. They were the first all-black unit—the 369th infantry regiment—to fight in the war. However, due to racism and segregation, they were prohibited from fighting amongst their white comrades in the United States. They fought alongside the French and gained notoriety for their contributions. Despite their success at the time, years later their legacy has faded from many Americans' minds. "Leaving for the Front" by Lichtenstein, who was a poet and German soldier in WWI, is a poem that anticipates war and its counterpart, death. In this presentation, I will give a brief history of the Harlem Hellfighters and hone in on the contrasting attitudes left by the Harlem Hellfighters and "Leaving for the Front."

HOW WE CAN LIMIT THE AMOUNT OF GREENHOUSE GASES IN THE ATMOSPHERE

Jeniya Harrison
Faculty Sponsor: Dr. Beth Huettel

The topic I want to research is the abundance of greenhouse gases, the effects on the environment, and ways the amount of greenhouse gases in the atmosphere can be reduced. I plan to find where most of the carbon emissions are from and investigate options for replacing carbon-based power with renewable sources of energy. I will also investigate the methods that are being developed to remove greenhouse gases from the atmosphere. These carbon-capture techniques may be necessary to reduce the worst effects of climate change and finding cost effective ways to do this is important. I will conduct research to learn about the effects of greenhouse gases and their effects on the environment as well as pictures that illustrate how we might be able to use technology to reduce carbon in the atmosphere.

SPACE MONKEY SEE, SPACE MONKEY DO: FIGHT CLUB'S APPEAL TO MODERN SOCIETY'S MIDDLING "MALE MINORITY"

Grace Horner
Faculty Sponsor: Jenny McHenry

Chuck Palahniuk's "Fight Club" stands and has stood as one of modern society's most revolutionary pieces of literature for over twenty years, and is generally known because of its movie adaptation. From the message it conveys to the quotable lines to the characters themselves, people just can't seem to get enough of the story. Generally speaking, "Fight Club" is targeted towards a specific group of people– the male, white-collar working class of America. This presentation will discuss the psychology behind these individuals, explaining why the story resonates so much with this particular demographic. This analysis of the book and the film incorporates demographic statistics.

THE LIFE AND LEGACY OF DOROTHY WEST

T'Erica James
Faculty Sponsor: Tereasa Paliwoda

This presentation focuses on Dorothy West, a prominent writer and author during the Harlem Renaissance, to shed light on influential African American female writers during that time. When discussing the Harlem Renaissance, a lot of prominent and influential African American women who had real influence on the culture during that time are not highlighted enough. Dorothy West is one of those women. The Harlem Renaissance is a period in history where Black artists of all kinds were able to showcase their talents proudly amongst likeminded individuals. This presentation will go through West's life as well as her achievements and what it was like for her during her career.

GROWTH MINDSET WITHIN A LEADERSHIP ROLE

Alayna Montague
Faculty Sponsor: Dr. Daniel Beugnet

This paper examines those in a leadership role when they have a growth mindset rather than a fixed one. It looks at how these leaders approached teaching, listening, and adapting to situations. A growth mindset is a positive view of how one approaches an obstacle or mistake. This study is important because when leaders have a growth mindset, they teach their followers to develop one as well. This analysis examines the differences between a growth and fixed mindset, the defining traits a good leader possesses, how a leader can impact those in a workplace or learning environment, and the process needed to change a mindset. I evaluate how it affects, and benefits individuals, and how it can change the environment in which we all live. Throughout my research, I gather how important the mindset is of the people around us.

THE ADVERTISEMENT OF STIMULANTS TO SCHOOL-AGED CHILDREN AND THEIR PARENTS FOR ADHD

Laney Montgomery
Faculty Sponsor: Nicolette Costantino

The purpose of this study was to explore whether children with ADHD should be prescribed stimulants as the first and only way to combat their symptoms. While stimulants are often advertised as the "best" way to combat the symptoms of ADHD because they can adjust the chemical imbalances that cause those symptoms, what is not advertised as much are the side effects stimulants have on the mental and physical state of children. The research was conducted by reading articles in the TCC databases. Throughout this paper, the researcher acknowledges and focuses on the values of both opposing sides of this argument about whether stimulants should be recommended to children.

"WAR GIRLS": A POETIC ANALYSIS OF 20TH CENTURY FEMINISM AND HOW IT SHAPES TODAY

Isabella Rios
Faculty Sponsor: Jenny McHenry

This oral presentation dissects Jessie Pope's poem "War Girls." The poem explores the themes of early 20th century feminism through a poetic lens. The analysis displays how far society has come from the early 20th century to today in terms of the progression of women's rights. The extent of the research conducted was analyzing the change in stereotypical female roles, how vital women were during the First World War, and how women can be mothers and wives while still having outside occupations and being the breadwinner of the family.

THE MARK OF CANCER

Tanner Robinson
Faculty Sponsor: Nicolette Costantino

This paper explores different views on the suggestion for cancer screening for citizens between the ages of 49 and 70. This study will bring in two authors: David Ropiek (opposed to screening), and Leana S. Wen (for screening) who commonly believe that cancer is a horrible battle disease, but suggests different ways of handling it. This project focuses on the debatable discussions about cancer. Overall, this presentation will propose a common ground between the opposing sides to enlighten one another about their perspectives on recommending cancer screening.

3-MINUTE THESIS VIDEOS

THE FINAL SHOWDOWN: MOBILE APPS VS. WEBSITES

Arinzechukwu Abanah
Faculty Sponsor: Dr. Renee Gordon

In the digital era, a big question is whether websites or mobile apps are more relevant. In this research paper, the changes in digital presence will be explored, taking into account things like market trends, usability, and user experience. While websites are essential for spreading information and providing easy access across other devices, mobile apps are better at improving interaction, engagement, and offline capabilities. It is evident, therefore, that modern strategies will be defined by an advantageous relationship between websites and mobile applications. This research concludes that in order to satisfy user demands and to exploit new changes, the strengths of both platforms should be utilized.

IS HYDROGEN THE FUEL OF THE FUTURE?

Ernand Alzenor
Faculty Sponsor: Dr. Renee Gordon

The quest for sustainable energy solutions has spurred significant interest in hydrogen, prompting debates over its viability as a future sustainable fuel source. This presenation examines the prospects and challenges associated with hydrogen as an alternative energy carrier, considering its environmental benefits, technological advancements, and economic implications. Drawing on existing literature and recent developments in hydrogen technology, this study evaluates the potential role of hydrogen in decarbonizing various sectors, including transportation, industry, and energy storage. Furthermore, it explores the key barriers hindering the widespread adoption of hydrogen, such as production costs, infrastructure requirements, and safety concerns. By synthesizing current research and industry trends, this presentation aims to provide insights into the prospects of hydrogen as a sustainable energy solution and its potential to reshape the future energy landscape.

THE ROLE OF A PSYCHOLOGIST

Terrianna Brow-Hendrickson
Faculty Sponsor: Donmetrie Clark

This research project studied the career duties of today's psychologists. The paper explores the significance of psychologists within society and what it takes to become one. Because of the increase in mental illness diagnoses, psychologists are important in all areas of life, whether that be work, school, or a large corporation. Many people rely on psychologists to assist them in managing their emotions and coping with life's struggles. All people deserve to experience a high quality of life. This paper presents information about the day-to-day duties, opportunities for growth within the profession, and why they are so essential for society. The completion of this paper entailed viewing various statistical data and anecdotes from psychologists. This research helped correct common misconceptions regarding this career. The more that people stay informed of what psychologists do, the less the stigma, leading to more people getting the help that they need.

HOW EXERCISE AFFECTS COGNITION

Reanna Byrd
Faculty Sponsor: Dr. Gina O'Neal-Moffitt

This paper explored the relationship between brain activity and physical activity. The ability to learn and remember information are two of the most important human functions, and exercise is a way to maintain, or perhaps increase, human cognition. For my project, I researched and wrote about two peer reviewed articles, whose authors conducted human-based experiments examining exercise and cognition. One experiment tested college-level students, and the other tested children. In both experiments, the researchers found correlations between physical activity and humans' memory and learning abilities.

PRIME HYDRATION'S EFFECTIVENESS

Crete Carter
Faculty Sponsor: Dr. Kimberly Davis

This study will investigate the effectiveness of the Prime Sports Drinks by Prime Hydration, LLC, created by Logan Paul and KSI; it will compare Prime Sports Drinks to Powerade and Gatorade, who have led the sports drink industry for years. With the ever-increasing popularity of influencer-endorsed products, it's crucial to determine the performance and nutritional value of these products. Through firm scientific analysis, including examination of ingredients, hydration benefits, electrolyte content, and consumer feedback, this research aims to determine if Prime is meeting the demands of athletes, fitness enthusiasts, and other consumers who might not fit the active human mold. By conducting relevant studies and considering factors such as taste, affordability, and availability, this investigation seeks to offer valuable information to consumers, athletes, and the sports beverage industry. The findings of this study will contribute to the world surrounding sports nutrition and influencer marketing, informing consumer choices and industry practices.

THE COMPLEXITY AND MECHANISMS OF VISUAL PERCEPTION

Walter Culley
Faculty Sponsor: Dr. Gina O'Neal-Moffitt

This presentation discusses two studies on the mechanisms and complexity of visual perception. Visual perception is not the act of seeing but rather the brain's way of interpreting what was just seen. The first study investigates how selective attention can affect early visual processing. Selective attention is an intrinsic component of visual perception and is required when the visual system is crowded with irrelevant stimuli. The second study explores how prior experiences and contextual information can increase the perceived sharpness of visual stimuli. This is another mechanism of visual perception. Both studies also explore the influence of external factors on visual processing. The similarities in both studies underline the complex nature of visual perception and emphasize how our brains do not just process these visuals but also interpret them.

IS ROMAN CONCRETE A SOLUTION TO EROSION OF CIVIL INFRASTRUCTURE?

David Dixon
Faculty Sponsor: Dr. Renee Gordon

If the world continues to warm, then so will the oceans that surround us. If the oceans that surround us warm up, then storms will worsen due to the increase of water vapor. If these storms worsen, what happens to the man-made structures that are compromised by them? A potential solution is to use material known for lasting a millennium, Roman concrete. This project's purpose is to research the applicability and economic viability of Roman concrete into civil infrastructure. In terms of application, this project will go over if it is possible to find the resources needed for production. Using the information gathered for the application of Roman concrete, we will then calculate the cost and compare it to the cost of concrete used now. It is anticipated that the Roman concrete will run into a fault in application, which will then fault the economic viability.

NOISE SENSITIVITY IN AUTISM: SCIENTIFIC AND FIRST-HAND PERSPECTIVES

Michelle Fulbright
Faculty Sponsor: Dr. Gina O'Neal-Moffitt

My research focuses on helping people understand and reframe how they think about autistic individuals' sensory capabilities, specifically sound. For this, I looked at mainly two papers, the first being interviews with autistic people who experience noise sensitivity. Researchers noted their first-hand experience and transcribed how they live with or adapt to their noisy environment. The second paper's focus was more scientific, assessing auditory perception in comparison with neurotypicals (those with typical neurological development/behavior). Researchers found that autistic individuals are more perceptive to sound. They chose to see this as a strength, however, rather than a deficit. By seeking to understand autistic people and their limits and capabilities, considering both their personal experiences and the science behind it, we can become more empathetic rather than exclusionary, not only towards them, but towards others with disabilities as well.

THE NEED FOR HUMANITIES IN HEALTHCARE: BRIDGING THE DIVIDE

Elizabeth Fussell
Faculty Sponsor: Dr. Daniel Beugnet

This project examines the need for, and importance of, liberal arts education in healthcare curriculum and training. Current research presented in academic journals and articles shows that the most substantial part of medical education lies primarily with STEM-based curriculum (Science, Technologies, Engineering, Mathematics). The purpose of this project is to highlight the glaring absence of proper liberal arts education in medical and healthcare-based syllabi, and therefore the lack of implementation of the qualities and skills it instills in its pupils. Studies have shown that humanities education equips professionals with important tools such as investigative thinking, social responsibility, improved bedside manner, and an increase in empathetic care for patients, all of which are imperative for proper and successful healthcare and medical ethics.

ANGER IN CHILDREN: THE EFFECTS AND RESPONSES TO HOW CHILDREN INTERACT WITH ANGER

Ryan Henry
Faculty Sponsor: Dr. Gina O'Neal-Moffitt

This paper explores anger development in children and techniques named "Anger Reversal Techniques" that are aimed at reducing anger and violence within children. Anger is a prevalent problem with young children; it can cause violence and lead to consequences delivered by authority figures such as teachers and parents. Researchers say that after age eight, children see a significant increase in anger levels that stem from multiple causes, including school, peers, parents, and other social factors. However, researchers have discovered that Anger Reversal Techniques, when introduced to elementary school children, reduce anger and violent tendencies by a margin of 40 percent. So, this paper concludes that teaching children about Anger Reversal Techniques can have a positive impact on their mood, on their personality, and in their daily lives in the future.

DARK MATTER

Jailynn James
Faculty Sponsor: Dr. Renee Gordon

This research project explores the complex mechanisms involved in observing dark matter: an enigmatic substance that constitutes a significant portion of the universe. The elusive nature of dark matter necessitates innovative detection methods, and our investigation is dedicated to elucidating various indirect approaches for perceiving its presence. This study delves into gravitational lensing, a phenomenon wherein the gravitational field of massive objects distorts the path of light, enabling the identification of otherwise invisible dark matter. Through a meticulous analysis of the light bending from distant celestial objects, our goal is to create a comprehensive map detailing the distribution of dark matter within specific regions of the cosmos. Furthermore, the project delves into indirect detection techniques, including high-energy cosmic-ray observation. By combining theoretical frameworks with observational data, this study aims to contribute to the ongoing discourse on dark matter, unraveling its spatial distribution and shedding light on its fundamental properties.

OPTIMIZING SLEEP... BY EATING PROTEIN?

Shelby Jones
Faculty Sponsor: Dr. Rebekah Lane

This Three-Minute Thesis will discuss how protein intake affects sleep. The majority of people are most likely to consume protein for energy, muscle growth, or to maintain their body composition. While all of these reasons are valid and can be achieved by eating protein, there are many other benefits that the average person has probably never even thought of. Recent evidence supports the view that consuming protein before bedtime has positive impacts on the time it takes to fall asleep, as well as quality of sleep and overall health. Detailed research on what this looks like practically will be shared through this presentation.

THE EFFECT OF EXCESSIVE USE OF SOCIAL MEDIA ON THE MENTAL HEALTH OF TEENAGERS

Leila Kouanda
Faculty Sponsor: Dr. Renee Gordon

This study investigates excessive use of social media and its impact on teenagers' mental health. Studies have shown that excessive use of social media by teenagers puts them at risk of developing depression. For this research, 25 teenagers were surveyed. The survey consisted of four introductory questions to gauge familiarity with social media platforms followed by five multiple choice questions probing into teenagers' perceptions and experiences regarding social media usage and its effects on their mental health. This research will help reveal the risk factors associated with social media that may contribute to mental health issues among teenagers. The results of this experiment are expected feelings of depression and loneliness as well as experiences with cyber-bullying.

AUTOMATED VS. MANUAL SYSTEMS

Trevor Lopez
Faculty Sponsor: Dr. Renee Gordon

Automated and manual systems' research aims to show the dichotomy between the two while evaluating their advantages and limitations. Automated systems incorporate technology to streamline processes, enhance efficiency, reduce errors, and promote a safer workplace. They offer real-time data metrics, increased throughput, and scalability. However, their implementation requires substantial upfront investment and may face challenges in adapting to the dynamics of the environment. Alternatively, manual systems require human interaction. They excel in non-routine tasks but are subject to human error, lower throughput rates, and higher operational costs. Striking a balance between automation and manual systems is essential for optimizing organizational performance, ensuring agility, and meeting specific operational needs. This study aims to address the use of both automated and manual systems, with a tailored approach that considers the nature of tasks, resource availability, and organizational objectives.

ELECTRICAL TECHNOLOGY IS ESSENTIAL TO EARTH

Timothy McCall
Faculty Sponsor: Dr. Renee Gordon

This study aims to examine the importance of electrical technology in our environment. With electrical technology, we can discover facts about the earth that we are unaware of. Electrical technology also provides easier and more efficient ways to interact with the environment. An example of electrical technology contributing to the maintenance of our environment is the use of zinc-air batteries, and the use of strengthening technologies (e.g. electrical discharge machining) to change the surface properties of certain elements. Zinc-air batteries and the use of strengthening technology contribute to maintaining the earth's ecosystem. This study will help the viewer understand how important electrical technology is and how to preserve the impact of electrical technology.

THE EFFECTS OF SUNLIGHT ON HUMAN BEHAVIOR

Jonathan Norton
Faculty Sponsor: Will Owens

Sunlight has many different benefits, such as sleep quality, enhanced immunity, increased energy, reduced inflammation, and so much more. Sunlight specifically has the ability to increase the mood in humans due to the production of Vitamin D. This research project examined the effects of sunlight on both the human psyche and human body. People who have reached the necessary amounts of vitamin D were compared with people who are deficient in vitamin D. To get my findings, I looked at many different case studies across the United States. Specifically, I looked at regions where sunlight is less prominent. Then, the data was compared to regions where sunlight is in abundance. The findings backed up the data showing that Vitamin D has a positive effect on people.

HUMAN TECHNOLOGICAL-NEUROLOGICAL INTEGRATION

Ryan Prince and Shaune Jessemay
Faculty Sponsor: Dr. Renee Gordon

The rapid advancement of technology presents many complex challenges such as how to seamlessly integrate our brains with technology. This research explores innovative approaches to bridge the gap between human cognition and technological interfaces while navigating societal, technical, and ethical challenges. This study employs a multidisciplinary approach, combining neuroscience, computer science, engineering, ethics, sociology, psychology and many other disciplines to investigate various advancements, such as brain-computer interfaces, neural implants and prosthetics, and cognitive augmenting technologies. Through extensive literature review and empirical analysis, we uncover the potential benefits and risks associated with such integration, such as the threat to human identity, freedom of thought, human dignity concerns, autonomy, and privacy. Our findings reveal promising opportunities for neural signal decoding, medical breakthrough, and enhancing human capabilities, yet underscore ethical and privacy concerns like infringements on human rights through forced treatment to alter behavior.

INCORPORATING RENEWABLE ENERGY IN OUR EVERYDAY LIVES

Makiah Rogers
Faculty Sponsor: Dr. Renee Gordon

In order to prevent climate change and promote sustainable development, renewable energy must be integrated into daily life. The integration of renewable energy in the residential, commercial, and transportation sectors is examined in this project, taking into account societal acceptability, policy frameworks, and technological breakthroughs. Reduced emissions, energy independence, and the generation of jobs are among the benefits; yet issues like investment costs and interruption still exist. Case studies are used to analyze effective integration tactics and growth possibilities. Adopting renewable energy sources opens the door to a sustainable future by improving energy systems' endurance and creativity as well as creating a cleaner environment. This study aims to analyze feasibility of replacing normal daily practices that can be harmful to the environment with greener options.

THE INTERACTION BETWEEN THE CILANTRO GENE (OR6A2) AND ARTIFICIAL GRAPE FLAVORING: A TASTE PERCEPTION STUDY

Edward Romero
Faculty Sponsor: Dr. Renee Gordon

A study was conducted where 100 individuals in Tallahassee were surveyed to understand the Cilantro Gene. This gene is known to make cilantro taste like soap to certain people. This study focuses on the interaction between the gene and artificial grape flavoring, investigating whether this flavoring impacts the perception of taste in individuals with and without the gene, particularly noting that artificial grape flavoring may be less appealing to those without the gene due to an association with the taste of sweat. The methodology involves randomly selecting participants from the Tallahassee area and having them 1) taste a grape, 2) eat cilantro, and 3) taste a grape-flavored Jolly Rancher. Following these tastings, a questionnaire designed to eliminate bias and prior knowledge of the study's purpose is administered. This research aims to enrich the understanding of the OR6A2 gene's influence on taste perception and its broader implications on daily life.

COMMERCIAL SPACE FLIGHT

Abel Samson
Faculty Sponsor: Dr. Renee Gordon

This research will be about commercial space flight, its benefits, and how it can further space research and improve civilian transportation. The rapid progress in rocket technology and microelectronics is identified as a driver of space expansion. This rise in commercial space exploration indicates a change that has deep implications for humanity. These advancements have led to space missions and made access to space more accessible to a broader audience. Commercial space exploration adds value to humanity through data, generation expanding markets, potential resource extraction, satellite communication services, and Earth observation capabilities. This project emphasizes the importance of collaboration to ensure space exploration practices and address issues like orbital debris. In summary, the advantages of commmerical space exploration offer new opportunities for development and creativity.

POSTERS

INVESTIGATING THE RELATION BETWEEN ACTION POTENTIAL QUANTITY AND EXTENT OF MUSCLE CONTRACTION

Orire Adeniyi
Faculty Sponsor: Dr. Wade Henning

This study looks to accurately tie the amount of action potentials fired (or the strength of a neural signal) to the extent a muscle contracts. Nerves may not function properly due to injury or other causes related to medical conditions such as Amyotrophic Lateral Sclerosis, which is the degeneration and atrophy of motor neurons. Therapy is the only treatment for this condition so taking tests of the patient's nerves as they progressively break down may lead to revelations about the disease. To achieve the goal of quantifying action potentials, an oscilloscope with probes was used. Electrical signals to the 30 muscles in the hand were recorded when they innervated during various gestures like a fist or pointed finger. The data was used to quantify the amount of action potentials fired for each muscle for the various hand gestures. The study is ongoing.

AUTISM IN WOMEN: DIAGNOSIS, SYMPTOMS, AND EARLY DETECTION

Zikora Aliche
Faculty Sponsor: Dr. Renee Gordon

Autism spectrum disorder is known for the neurodevelopment disability and changes discovered in the brain. This study aims to examine the possibility of improving an autism diagnosis, particularly in women. Doctors examine behaviors and child developmental history to asses diagnosis. Men with Autism are more likely to receive a proper diagnosis than women with autism. Implementing advanced tools to assist in an accurate autism diagnosis in women will be explored in this work.

GALILEO VS. ARISTOTLE

Luna Ampuero
Faculty Sponsor: Dr. Renee Gordon

This study contrasts the theories of Galileo and Aristotle regarding the weight of free-falling objects. Aristotle posited that objects fall at speeds proportional to their weights, while Galileo argued that all objects fall at the same rate regardless of weight. By examining the historical context, primary texts, and experimental evidence supporting each theory, we are able to highlight the pivotal differences in their perspectives. Aristotle's qualitative approach influenced medieval thought, while Galileo's quantitative and empirical methods revolutionized physics. Galileo's experimental evidence challenged prevailing beliefs, leading to a fundamental shift in understanding the motion of free-falling objects. This analysis sheds light on the scientific revolution's beginnings and the enduring impact of Galileo's empirical approach to physics. Throughout this project, we learn how Galileo's theory was officially tested and how it is recognized today.

DO YOU LIKE THE BEACH?

Karla Backey
Faculty Sponsor: Dr. Renee Gordon

This project examines why Florida's beach tourism is declining due to red tide. Chemical runoff from industrial facilities has caused the Gulf to have over 50 Harmful algae blooms happening, but K. Brevis (Karenia Brevis) is the most known algae that causes red tide. K. Brevis causes red tide because not only is the Gulf losing nutrients, but the Gulf is also getting warmer, which promotes algae growth. This algae is growing fast, and it is killing marine life. It can harm humans if they inhale it, or even eat fish that have been infected by the algae, a condition which is NSP(Neurotoxic Shellfish Poisoning). The only way we can stop red tide from happening is finding a way for these industrial facilities to ethically discard of their waste. The goal of this study is to bring awareness to this environmental issue.

DID THE ANNUNAKI'S BUILD THE EGYPTIAN PYRAMIDS

Karina Beasley
Faculty Sponsor: Dr. Renee Gordon

The correlation between the Egyptian pyramids, the ancient Mesopotamian civilization, and the Annunaki was examined. The Annunaki are God-like, celestial beings from the Ancient Mesopotamia civilization. A survey was conducted at a world religion class at Tallahassee Community College with around 15 participants. The group was asked if they believed the pyramids could be invented with technology available during the B.C. time period by the Annunaki. Secondly, since the ancient Mesopotamian civilization worshipped the Annunaki as their deity, could it be similar to today's religious belief and back up the belief that some have, assuming they are responsible for the pyramids? This study addresses perspectives regarding the theory behind the mystery of who built the Egyptian Pyramids.

NMN SUPPLEMENTATION AND ITS ABILITY TO REVERSE THE AGING PROCESS

Justin Bolt
Faculty Sponsor: Dr. Renee Gordon

Nicotinamide Mononucleotide (NMN) is a naturally occurring form of Vitamin B, Niacin, found in many creatures and is used in the body to regulate several processes such as Oxidative Phosphorylation, DNA Synthesis, and signaling for the circadian rhythm. As people grow older, the levels of this chemical and its derivatives shrink by over 80%. NMN is taken orally through the form of a pill or as a liquid solution. Inside of the body, NMN is synthesized into Nicotinamide Adenine Dinucleotide (NAD+) using an enzyme reaction. It is this chemical, NAD+, that has been undergoing a long series of testing to determine whether there are any health benefits from ingestion. According to current studies, consistent ingestion has increased the lifespan of mice, rats, and frogs by 60% while the lifespan of earthworms has doubled. Human trials are currently underway.

THE EFFECT OF DIVORCE ON CHILDREN'S MENTAL HEALTH IN AMERICA

Destinee Britto
Faculty Sponsor: Dr. Renee Gordon

Divorce is a complex and prevalent phenomenon that significantly impacts families worldwide. My research investigates the multifaceted effects of divorce on the mental health of children in the United States. Through a comprehensive review of existing literature and empirical studies, this research incorporates all of these findings to elucidate the psychological repercussions experienced by children in the aftermath of parental separation. Various factors, such as age, gender, socioeconomic status, and the quality of parental relationships are examined to present the nuanced ways in which divorce influences children's mental well-being in the United States. Furthermore, this research explores the mechanisms through which divorce exerts its effects, including disruptions in family dynamics, changes in living arrangements, and exposure to parental conflict. Different interventions aimed at mitigating the consequences are discussed. Understanding the interplay between divorce and children's mental health informs policies tailored to children navigating parental separation.

DOES THE STRUCTURE OF OUR CITIES AFFECT US PSYCHOLOGICALLY?

Xyonna Carreia
Faculty Sponsor: Dr. Renee Gordon

This research is to explore the psychological impact of urban design, focusing on the role of color and structure in shaping individuals' experiences within urban environments. Inspired by graffiti being decorated on an abandoned building in downtown Los Angeles, seeing graffiti on a deserted building makes me think about the emotional impact of the city environment. The colorful bursts between the dull surrounding structures inspire questions about the psychological impacts of urban environments. I explore the psychological impacts of uniform city architecture and how color can either relieve or intensify emotions of unhappiness, drawing from Colin Ellard's article "How Urban Design is Making Us Unhappy." I also analyze how cities affect our senses visually and socially to understand intricate links between urban structure and psychological states. Considering how urban aesthetics affects mental health, legislators and city planners can create more inclusive, lively, and psychologically helpful communities for all citizens.

THE IMPACT OF PLANT-BASED DIETS ON MICROBIOTA AND CARDIOVASCULAR HEALTH: A REVIEW OF RECENT RESEARCH

David Carrillo and Vladimir Jaurigue
Faculty Sponsor: Dr. David McNutt

The diverse community of microbes on and in our bodies—mostly bacteria, but also viruses and fungi—is known as the human microbiome. The microbiome produces vitamins, boosts immunity, facilitates digestion, guards against harmful pathogens, and ultimately improves human health. Factors that affect the microbiome include diet, medication, environment, age, and genetics. With an increasing number of individuals (between 5 and 8% of people worldwide) adopting a plant-based diet, understanding the impact of these diets on the microbiome is of growing importance. This review analyzes recent randomized controlled trials to explore the link between plant-based diets and human health. Analysis suggests components of plant-based diets, such as high fiber content, may contribute to healthier gut microbiota composition and potentially improve certain cardiovascular risk factors (as indicated by reduced metabolite production). However, further research is necessary to understand the precise effects of dietary variations and their interactions with cardiovascular risk factors.

HARNESSING AI: ADVANCING CLEAN ENERGY TECHNOLOGY USING ARTIFICIAL INTELLIGENCE

Julian Daniel
Faculty Sponsor: Dr. Renee Gordon

The urgent need to mitigate climate change, reduce large-scale pollution, and end reliance on fossil fuels has reignited interest in modern clean energy solutions. This study explores the role of artificial intelligence (AI) in developing sustainable energy technology, with a focus on renewable energy, energy storage, and grid management. AI techniques like machine learning and optimization algorithms are being utilized to tackle challenges like grid instability, limited storage, and intermittent natural resources. By gathering research from case studies and scientific journals, this study will analyze the efficacy of AI regarding increasing efficiency and sustainability of clean energy technologies. This research concludes that artificial intelligence can play a pivotal role in accelerating the global transition to cleaner, safer energy.

EMERGENCE FROM SYSTEMS OF PARTICLES

Kyle Devlin
Faculty Sponsor: Dr. Joseph McNeil

The purpose of my project is to observe the emergent characteristics of simple physical systems and further my understanding of computer science, physics, and mathematics through application. This process involves the programming of a particle simulation where each particle will inherent a basic set of characteristics and interparticle forces will be calculated every timestep to evolve the system. By manipulating the particles' characteristics and the forces within the system, novel and observable behaviors will emerge between the particles. This allows for the exploration of increasing complexity in simple systems through interconnectedness. This project is programmed in the Godot game engine, which uses a python style interpreted scripting language, GDscript. Simulating a physical system with classical physics involves leveraging computational principles such as algorithms and data structures for techniques like spatial partitioning, along with mathematical concepts such as differential equations and numerical methods to accurately emulate the physics.

GLOBAL GUIDELINES TO PREVENTING MALARIA

Morgan Edwards
Faculty Sponsor: Dr. Margelet Hamilton

Of those who have all perished from malaria caused by plasmodium, 95% were child citizens who lived in one of the 47 member states of the World Health Organization (WHO)- African region. The WHO self-reports as the leading health authority and works globally to improve health outcomes. The World Health Organization states that "no single intervention or package of interventions will achieve malaria elimination in all countries...". This research examines published guidelines regarding malaria caused by plasmodium and concludes that measures against malaria are most effective when implemented uniformly across any regional population, and those measures suffer when that implementation is unreliable, sporadic, or non-existent; disparities will be directly attributed to the economic climate of a geographical region.

GENDER RATION DYNAMICS IN HISTORICALLY BLACK COLLEGES AND UNIVERSITIES (HBCUs)

Widens Filsaime
Faculty Sponsor: Dr. Renee Gordon

This abstract examines gender ratios in Historically Black Colleges and Universities (HBCUs), focusing on trends, influences, and implications. Through literature review and data analysis, it explores how ratios of men to women have evolved over time, considering socio-cultural and institutional factors. It discusses the impact of these ratios on campus life, academic performance, and student experiences, highlighting implications for policy and practice. Understanding these dynamics is crucial for promoting inclusivity and addressing disparities in higher education.

LAWS OF MOTION

Eric Fresquet
Faculty Sponsor: Dr. Renee Gordon

This project will showcase research that both extends and challenges the classical principles set forth by Sir Isaac Newton. From the exploration of dynamic systems in engineering to the study of celestial mechanics, we will delve into the practical applications and theoretical extensions of Newton's foundational laws. Additionally, we will highlight the historical significance and enduring relevance of these laws in shaping our understanding of the physical world. Whether one is a researcher or a curious student, this project offers a unique opportunity to engage and explore the timeless principles that govern motion and force in our universe.

CAN YOU HEAR THE MUSIC?

Kamden Hatten
Faculty Sponsor: Dr. Renee Gordon

Through music, humanity has been able to express themselves in a multitude of ways. One of the most intriguing forms of musical expression is through film. A movie's musical score is often crafted to compliment and set the tone of the scene visuals, helping to highlight whatever emotion the filmmaker wants the audience to feel. The purpose of this study is to determine whether a film's musical score can evoke the filmmaker's intended emotion without the attached visual media. A group of 50 people will be gathered and split into 5 groups of 10 and tasked with listening to an assigned film score. Participants will be asked to detail how the scores made them feel through surveys. The anticipated results are that certain scores will be able to transfer their film's tone and emotion clearly, but the scores will be more impactful for those who have seen the films.

THE EFFECTS OF AIR POLLUTION VS. CARDIOVASCULAR HEALTH

Jordan Henry
Faculty Sponsor: Dr. Renee Gordon

Air pollution has caused a lot of health concerns over the years. It has been shown to have many different effects on respiratory health. This project will show the insignificant correlation between air pollution and a person's cardiovascular health. Studies have shown the effects that air pollution can have on a person's health and also the particles that cause air pollution. These air particles include sulfur dioxide and nitrogen dioxide, which can contribute to respiratory problems. The health problems that can emerge from air pollution are hypertension, heart failure, and heart attack. People of older age and those prone to cardiovascular issues have a higher chance of being affected by this. Addressing this problem at the source helps everyone and can start to strive for a change, even if most people may not see it as a huge problem of today.

DECIPHERING THE DANCE: EXPLORING DIFFUSION DYNAMICS THROUGH VINEGAR-AGAR CUBE

O'Tisha Jones
Faculty Sponsor: Dr. Renee Gordon

Diffusion is the movement of molecules from an area of high concentration of the molecules to an area with a lower concentration. This process underpins various physiological and biochemical processes within living organisms, as well as chemical reactions in non-biological systems. To understand how this process works, an experiment was conducted with vinegar on agar cubes. Agar is a gel-like substance that is commonly used in microbiology to study the antimicrobial properties of substances against bacterial growth. Through the process of diffusion, scientists can decipher the complex mechanisms via which molecules enter and exit cells. Understanding bacterial pathogenesis, creating innovative antimicrobial medicines, and refining medication delivery techniques all depend on these discoveries. In conclusion, exploring diffusion through experiments like the vinegar-agar cube experiment can lead to innovative medicine discovery and healthcare delivery, as well as improve our understanding of basic biological processes.

THE EFFECTS OF NURSING BURNOUT ON HOSPITALS

Aheim King
Faculty Sponsor: Dr. Bryan Hooper

Nursing burnout has been highlighted in the past four years. From Covid to standstills in the community of nursing, there has been a shortage of nurses in hospitals. Nursing schools have recently tried bridging the gap between the ratio of nurses and the need for them in hospitals. If nursing schools are cutting the amount of time needed for degrees and lowering GPA requirements, why is this happening? This paper will identify the major reasons for burnout in the hospitals and explore how the transition from bed side to travel nursing also affects the hospitals. Data was collected from research papers, nurses in Tampa, and an administrator of a major hospital. Through the research gathered so far, this study concludes that nursing burnout in hospitals is caused by a combination of factors: nurses leaving, money opportunities, and workload/responsibilities.

THE ORIGINS AND GENETIC CHANGES OF COVID-19

Anna Manning
Faculty Sponsor: Dr. Renee Gordon

Coronavirus was discovered in Wuhan China in 2019 and began to spread rapidly throughout the world. This virus was declared a pandemic by the World Health Organization (WHO) in March 2020 based on the disproportionate rate of transmission versus recovery. The purpose of this study was to track the origins of COVID-19 while also monitoring the genetic mutations that occurred. Using the GenBank NIH genetic sequencing database, the sequencing and changes of the SARS-CoV virus were examined to determine if there were any zoonotic jumps. The main focus of this work is to explore if the Coronavirus requires a zoonotic jump to mutate into a different strain.

MARINE LIFE AFFECTED BY CONTAMINANTS AND THE OIL SPILL IN THE GULF OF MEXICO

Charlene Marshall
Faculty Sponsor: Dr. Renee Gordon

The Gulf of Mexico has faced severe ecological repercussions due to contaminants and the 2010 British Petroleum (BP) oil spill, resulting in widespread damage to marine life. The spill led to the release of toxic substances, adversely impacting the delicate ecosystems of the Gulf. The affected marine life includes prominent species such as the bottlenose dolphin, which disrupted their reproductive and immune systems. Nearly 100 percent of the red snapper fish showed evidence of liver damage. Bluefin tuna experienced health issues such as respiratory and skin problems. Some shellfish in the Gulf affected by the oil spill included oysters, scallops, and several species of shrimp and crabs. These species experienced habitat degradation, reduced reproductive success, and long-term health issues due to exposure to oil and contaminants. This study will examine the effects of the 2010 BP oil spill on various marine life.

THE INTERACTION BETWEEN THE CILANTRO GENE (OR6A2) AND ARTIFICIAL GRAPE FLAVORING: A TASTE PERCEPTION STUDY

Janessa Martin and Aakanksha Pathak
Faculty Sponsor: Dr. Renee Gordon

A study was conducted where 100 individuals in Tallahassee were surveyed to understand the Cilantro Gene. This gene is known to make cilantro taste like soap to certain people. This study focuses on the interaction between the gene and artificial grape flavoring, investigating whether this flavoring impacts the perception of taste in individuals with and without the gene, particularly noting that artificial grape flavoring may be less appealing to those without the gene due to an association with the taste of sweat. The methodology involves randomly selecting participants from the Tallahassee area and having them 1) taste a grape, 2) eat cilantro, and 3) taste a grape-flavored Jolly Rancher. Following these tastings, a questionnaire designed to eliminate bias and prior knowledge of the study's purpose is administered. This research aims to enrich the understanding of the OR6A2 gene's influence on taste perception and its broader implications on daily life.

URBAN CITY DEVELOPMENT WITH THE INTEGRATION OF SOLAR ENERGY

Joel Mathew
Faculty Sponsor: Dr. Renee Gordon

Urban city development and solar energy are two industries that can be interconnected to help each other grow and evolve. However, there is a clear lack of development and integration of solar energy in many of the major and populated cities. Urban planning is progressing, but it still fails to fully utilize solar energy. A brief history of urban planning and development was analyzed to evaluate where there have been areas of progress. The history of solar energy was explored to understand how it can be utilized in urban development. This project provides examples of how solar energy can help fill the major and minor needs that many cities have and concludes that it can be successfully integrated with urban planning and development.

THE APPLICATIONS OF AI FOR PROTEIN SYNTHESIS AND DESIGN

Zachary Meeks
Faculty Sponsor: Dr. Donya Samara

This study began with the question of what the practical applications of the use of artificial intelligence in protein synthesis and design are. It was discovered that an enhanced comprehension of protein formation, particularly when applied to medical contexts, has the potential to enhance medication quality, accelerate pharmaceutical production, and potentially lead to the development of cutting-edge treatments for specific conditions such as certain cancers and amyotrophic lateral sclerosis (ALS). This poster presentation follows how scientists originally collected data around protein formation, how that process evolved, and the practical applications of the technology and data.

EXPLORING THE IMPACT OF AGE ON ROAD SAFETY AND DRIVING BEHAVIOR

Jephte Moise
Faculty Sponsor: Daniella Petit

In the United States, life expectancy has increased significantly. In 2023, life expectancy estimated by the United Nations was 79 years. This was a 19% increase from 1950 and is anticipated to grow by 5% by 2050. According to the National Safety Council, "1 out of 5 drivers in USA are 65 years old and older and contribute to 145 fatal crashes." With an aging population, it is critical to understand and describe the driving behavior and road safety among people aged 65 and above. Using data from the Florida Department of Highway Safety and Motor Vehicles, this study will first investigate the frequency of traffic violations among elderly people as well as their level of involvement in road incidents. Then, a survey will be conducted to elicit insights from current drivers about their perceptions of elderly driving behavior.

MY BODY MY CHOICE

Joi Monsanto
Faculty Sponsor: Dr. Renee Gordon

In this project, I am investigating the desire of women who get pregnant to keep and have that baby. Allowing someone else to determine if you are able to terminate your pregnancy should not be allowed. As a woman, it should be "my body my choice," and with the over turn of the Roe vs. Wade case, this is not permitted. Abortions have become more of a political aspect because of the concern of women's voices being taken away. This is going to make the population jump by hundreds of thousands because everyone is going to be forced to have a baby, wanted or not. For my project, I researched the history of abortions, how it affects the body, and also the cost of the procedure.

A WORLD WITHOUT HUMAN TEACHERS?

Yann Nassa
Faculty Sponsor: Dr. Renee Gordon

As technology continues to evolve, it comes with great benefits and downfalls. This research is intended to participate in answering one of the most important questions of this century, which is "Will humans be replaced by technology? If so, would it be beneficial?" The research was specifically focused on the education system and evaluated the need and efficiency of humans compared to AI. Data was collected by surveying at least 20 people on Tallahassee Community College campus about their opinions and feelings about the replacement of humans by AI technologies in all different education categories, from elementary school to the university education level. All questions were multiple choice, and participants were encouraged to elaborate on their answers. The anticipated results are that humans should not be replaced by technology because of our need for emotional connection.

FULL MOON'S AFFECT ON HUMANS

Taniyha Newsome
Faculty Sponsor: Dr. Renee Gordon

One study says that nearly 81% of mental health professionals believe that the full moon can make people ill. This ancient belief is powerful. I have also realized a big change from working in health care in a full moon. We were very busy, and we even had a lot of "full moon symptoms," such as showing signs of mental illness and mood affects, also known as the "lunar affect". Another website states that the full moon even affects people's sleep schedules, which causes a lot of people to be more active at night during a full moon. Some people also believe that during a full moon it can affect a woman's menstrual cycle. Also, another study shows that crime rates rise during a full moon, but that could be because the full moon provides additional light. Another study even says that the full moon is so strong it can affect the ocean tides. So if the full moon could do all of that, then it could affect humans' moods swings, as well as anxiety and depression. I truly believe that the full moon has an effect on humans based on my research with all the studies that have been conducted and real-world experiences I have witnessed.

HYDROGEN VS ELECTRIC

John Polisknowski
Faculty Sponsor: Dr. Renee Gordon

Hydrogen is a renewable fuel source, and its byproduct is water. Electric motors require a large amount of lithium to make its car batteries. In turn, this results in a crisis, which is depleting lithium as a resource. Will there be enough lithium to keep up with electric car production? Batteries have acid, so where will the surplus of battery acid go? This research project will explore that issue as well as the long-term reliability of replacing conventional electric motor vehicles with hydrogen powered vehicles and why hydrogen will be a better alternative fuel source. As we compare both types of vehicles, one can see if we spend the time and effort on hydrogen motors, this can be very beneficial, not only for the automotive industry, but in people's lives and the environment.

PHYSICIAN ASSISTANTS: THE HIDDEN HERO

Makayla Prewitt
Faculty Sponsor: Dr. Renee Gordon

A Physician Assistant (PA) is second in command to a Medical Doctor. The role of a PA involves prescribing medication, checking family medical history, and giving patients guidance throughout their diagnosis. Physician Assistants examine the patient, conduct blood tests, and provide treatment such as stitching wounds. This project is inspired by my grandmother, as I was her caretaker for over 4 years. My personal interactions with PAs has highlighted that this role requires a hard-working, compassionate individual. The training is rigorous, with an overall acceptance rate is 31-32%. This work will place a spotlight on the impactful role of the Physician Assistant within the health care industry.

THE IMPACT OF THE GUT'S MICROBIOME UPON MENTAL HEALTH

Chloe Rach, Allison Ochoa and Laney Attus
Faculty Sponsor: Dr. David McNutt

The human microbiome refers to the presence of the thousands of microorganisms that live within the human body. Each system of microbes within the body can impact on human health. The gut's microbiome affects human health by aiding digestion in addition to acting as another defense against certain pathogens and toxins. Through the gut-brain axis, one's mental health may be affected due to the connection between the central nervous system and the gastrointestinal tract. We researched a series of clinical trials to determine whether the human microbiome directly affects the mental health of an individual. Through research of these trials, we discovered that the gut-brain axis is directly proportional to mental health, as a positive change in the gut microbiome results in a positive change in the mental health of the individual such as memory improvement, decreasing anxiety, decreasing depression, and mood regulation which affects thousands of individuals.

CALIBRATING CHARON SILICON DETECTOR ARRAY USING GAUSSIAN AND CRYSTAL BALL FUNCTIONS

Tristin Sabbage
Faculty Sponsor: Dr. Joseph McNeil

Neutron and silicon detectors are crucial for understanding astrophysical phenomena and the atomic nuclei produced during nuclear reactions, such as stellar and big bang nucleosynthesis, and supernovae events. In this study, we calibrate the CHARON silicon detector array in conjunction with the CATRiNA neutron detector array at Florida State University's John D. Fox Laboratory. The calibration is done using a sample of Th-228 decaying into Th-228 to Ra-224, Ra-224 to Rn-220, Rn-220 to Po-216, Po-216 to Pb-212, Pb-212(-beta) to Bi-212 to Ti-208, and Pb-212(-beta) to Bi-212(-beta) to Po-212 to Pb-208. Each decay channel is fit using either a traditional Gaussian probability density function to identify the mean value for each decay, or a crystal ball function to include threshold substructure. This study aims to determine if there's a marginal difference in mean decay energy and calibration results via these two methods.

ARE YOU A MATH PERSON? UNRAVELING THE ROOTS OF MATH AVERSION.

Cimona Seagraves
Faculty Sponsor: Dr. Renee Gordon

This project is focused on understanding why people harbor negative feelings towards mathematics, commonly referred to as math aversion. Math aversion is still a common occurrence that has a big influence on career decisions, academic achievement, and public perceptions of STEM fields. This study uses an interdisciplinary approach that includes psychology, education, and neuroscience to investigate the complex variables that lead to math aversion. The study attempts to analyze the psychological hurdles, pedagogical flaws, and cognitive biases driving math aversion by a thorough analysis of the literature, empirical studies, and cognitive evaluations. Furthermore, neuroimaging methods will be used to clarify brain correlates linked to adverse mathematics experiences. This study aims to shed light on the intricate interactions between cognitive, affective, and sociocultural aspects in order to design useful interventions and instructional tactics that will lessen math aversion and promote a more positive connection with mathematics.

GENETICS OF HUMAN BEHAVIOR

Kailar Shaw
Faculty Sponsor: Dr. Renee Gordon

Genetics plays a significant role in shaping human behavior. Twin and family studies have shown that a substantial portion of the variation in behavioral traits such as personality, cognitive abilities, and mental health can be attributed to genetic factors. With the introduction of molecular genetics, researchers have identified specific genes associated with various behavioral traits. The relationship between genes and behavior is complex and involves multiple genes and environmental factors. Recent advances in genomic technologies, such as genome-wide association studies, have allowed the identification of novel genetic variants associated with behavioral traits. Integrating genetics with other fields, such as neuroscience and psychology, has provided a more comprehensive understanding of the genetic architecture of behavior. Despite these advances, there are still many challenges in understanding the genetic basis of human behavior. These include the complexity of gene-environment interactions, difficulty replicating findings across studies, and ethical considerations surrounding genetic research on behavior.

EXAMINING THE BEHAVIORAL EFFECTS OF VIDEO GAME VIOLENCE

Mason Simmons
Faculty Sponsor: Dr. Renee Gordon

The existence of a significant correlation between violence in video games and violent behavior, especially in society's youths, has been a hotly contested topic for decades. The purpose of this study is to investigate whether a statistically significant correlation exists, and if so, the condition of that correlation. This is important because video games are an incredibly popular pastime with kids, and therefore the influences of these games are constantly put under scrutiny. Ascertaining the behavioral effects violent video games have may provide clarity on the matter of policy in the accessibility of this media. This project will collect data from previously published studies of the violent videogame – violent behavior relationship to examine whether the correlation exists and its condition if it does. Our anticipated results are the studies showing a small change in behavioral aggression in the short term and a statistically insignificant change in behavioral aggression in the long-term.

BRUSHLESS DIRECT CURRENT MOTOR

Shereece Smith, Hannah Barron, Noved Ahmed, Revan Khan and William Van Royen
Faculty Sponsor: Dr. Joseph McNeil

Brushless Direct-Current (DC) motors are typically used in common household appliances such as air conditioners and vacuums. For this study, we construct a Brushless DC Motor using coiled copper wires, ferrous metal poles, a magnetic rotor, and a toggle switch. As the toggle switch is moved, the direction in which the current flows will change, inducing an electromagnetic field. This electromagnetic induction will be apparent when the magnetic rotor begins to spin. To calculate the magnetic flux through the Brushless MC Motor coil, we measure the current flowing through the copper wires using a BK precision multimeter. This experimental value is then compared to the theoretical value of the magnetic flux calculated using the known voltage supply and resistance of the coils.

DISSECTING "ONE PIECE": HOW ART IMITATES LIFE

Quentin Stevens
Faculty Sponsor: Dr. Renee Gordon

"One piece" is a manga (Japanese graphc novel) series by Elichiro Oda mainly about a pirate crew searching for a mythical treasure called the "One Piece," and even though on the outside it looks very whimsical, under the surface it has a vast depth of sub plots and ideas that parallel the world we live in and enables the reader to take a deeper look at the world. This study examines those ideas and will compare them to real life events such as government corruption as well as the major vail that a lot things that are fed to the masses as justice isn't always the real truth.

EXPLORING THE USE OF ULTRASOUND FOR PAIN TREATMENT IN THE HUMAN BODY

Ben Stone
Faculty Sponsor: Dr. Renee Gordon

A case study will be conducted in the Tallahassee community to explore the effects of applying Biofreeze to an area of the human body with and without the use of ultrasound. The research will be conducted on 10 people who deal with pain and use Biofreeze for a day; then I will use ultrasound to penetrate the biofreeze deeper into the muscles. Being a massage therapist and dealing with neck pain chronically, I have used these procedures on clients for years, witnessing the results firsthand. Clients have extended their pain relief for a long time period due to the incorporation of these procedures. It is expected that a noticeably longer relief time period will be experienced when incorporating the use of ultrasound.

THE HEALTH OF TALLAHASSEE'S WATERWAYS 2024

Maggie Tterlikkis
Faculty Sponsor: Dr. David McNutt

This poster focuses on the water quality of Tallahassee's natural waterways, locating problem areas. Every civilization stands on the foundation of water, and uncontaminated water is highly coveted worldwide. Poor water quality is typically severely detrimental to the environment and human well-being, often wiping out sensitive aquatic life forms and leading to deadly infections like cholera, dysentery, and E. coli. To diagnose water quality across Tallahassee, various locations were assessed. Tests were performed on-site using a TDS meter and later at home using test strips with the previous samples. It's more probable that the southeast side of Tallahassee will have a poorer overall water quality because of the number of factories in the area. Determining what areas experience water quality issues can help us discover potential solutions and avoid serious consequences.

THE END OF CAPITALISM: THE GREAT AMERICAN EVOLUTION

Jaylen Wilson
Faculty Sponsor: Guy Dormeus

The fundamental flaw of capitalism is that it depends on perpetual expansion and profit accumulation, often at the expense of community well-being and environment. Recent studies provide research supporting my claim. The purpose of this research poster is to highlight the negative impact capitalism has on the constituents of the economy, as well as introduce a proposed solution to this issue: an economic system that prioritizes the well-being of the general population. Phase one of my research began with the examination of capitalism's origin, purpose and economic and geographical impact. Next, I collected data on key economic factors that contribute to the quality of life in America and in other countries. In phase two, I will conduct social experiments to generate empirical evidence that documents the economic preferences of young adults. Economic research and development is crucial if our objective is to cultivate economic growth and community morality.

INVESTIGATING THE BEHAVIORAL RESPONSE OF THE FLORIDA BARK SCORPION (CENTRUROIDES GRACILIS) TO STIMULI AND FOOD

Emanuel Wright
Faculty Sponsor: Dr. Renee Gordon

Understanding the behavioral responses of organisms to various stimuli is fundamental to clarifying their ecological interactions and adaptations. In this study, we focused on the Centruroides Gracilis, a species inhabiting large areas of Florida. Despite its ecological significance, little is known about its specific behavioral responses to stimuli and food. We enacted a combination of observation and experimental manipulation techniques to assess the scorpion's response to different types of stimuli, including tactile, visual, and olfactory cues. Additionally, we investigated its feeding behavior and preferences by offering various prey items commonly found in its natural habitat. Our preliminary results indicate that distinct behavioral responses are exhibited to different stimuli, with variations in sensitivity and responsiveness. Furthermore, our observations suggest preferences in prey selection, shedding light on the dietary habits and foraging strategies of this species.

VISUAL ARTS

THE FLOW OF MOTIVATION

Eliana Alger
Faculty Sponsor: Ljiljana Obradovic-Edmiston

My intention for this piece was to enhance my skills in stippling while trying to convey the emotions flowing out of a creative person while motivated. I also included an illustration of the luna moth, a symbol of new beginnings and transformation. While this piece is not intended to be a self-portrait, I relate to the woman pictured with her never-ending flow of creativity bursting from her mind. A bold stare looks back at the viewers of this small, yet detailed, piece; the theme of artistic transformation is subtle so as not to overpower the viewpoint. Using varied thicknesses of micron pens and nearly a week of my time, this piece was challenging but worth the wrist pain and aching back. This effort further floods me with bountiful motivation and proves I can complete any project I put my mind to.

INTROSPECTION

Ethan Bonham-Reed
Faculty Sponsor: Ljiljana Obradovic-Edmiston

This painting is an analysis and a visualization of my mind. Simultaneously, I wanted to explore the colors within my skin, expressive lines, symbolism, and tons of texture. The importance of this piece was to self-reflect and check my ego. What are the best and worst qualities of my personality? How would the audience read my mind? Who do I love? What are my insecurities? These are just a few of the questions I asked myself. I started this painting by underpainting with a light violet hue, building the tones, contrast, and overall composition. After underpainting, I went in with green to block out the grass and my body. I used a combination of palette knives and brushes using the pallet knives to build texture and the brushes for my lines and tons of blending. This piece took me about five months to complete.

SELF-PORTRAIT

Chloe Brown
Faculty Sponsor: Ljiljana Obradovic-Edmiston

This is a self-portrait done with oil paints on canvas. The study was to examine myself in a way that I don't normally represent myself to others, while also using the skills I have learned. The project was first done by dressing up and photographing myself, then transferring that image to canvas using a projector. I then worked in sections to create the form of my body in order to lay the colors on top and bring the painting to life. Additionally, I changed the background to a different complementary color to enhance the colors in my dress and face. The result was an oil painting of a more sophisticated version of myself than I present to the world, giving the painting a renaissance feeling while living in a modern world.

OVERLOOKED

John Bump

Faculty Sponsor: Julie Baroody

We often go throughout our day rushed. We are in a hurry. Most of our lives are spent getting from point A to point B, without ever stopping and smelling the flowers. This piece is supposed to get you to "smell the flowers." This piece is a set of photographs of things that many of us see every day, things which we rarely stop to see the intricacy and beauty of. The piece uses focus (deep and shallow) and contrasting light and colors to draw the viewer's attention to things that one probably does not pay attention to regularly.

ECOLOGICAL EROSION

Dina Cisneros

Faculty Sponsor: Dr. Renee Gordon

This piece is a reflection of the profound impact of man-made pollutants and unregulated waste on Earth's delicate ecosystems. From the consequences of excessive greenhouse gas emissions to microplastics resulting from fragmentation or intentional manufacture, the contamination derived from overconsumption is apparent. Not only do these factors have detrimental effects upon the organisms inhabiting commonly affected areas, such as oceans and forests affected by chemical contaminants or physical debris, but they pose the greater threat of universal imbalance by way of global warming. The utilization of mixed media aims to portray the multidimensionality and complexity of this ongoing issue. By giving a visual representation that it is rough around the edges and not simply something that can be "smoothed over," this piece is made with hopes of raising awareness for creating a sustainable future.

BROKEN COUCH CLUB BAND POSTER

Sinclair Franz

Faculty Sponsor: Ljiljana Obradovic-Edmiston

For this screen printing piece, I was inspired by 90s magazine and band art. I wanted to make a 90s-themed band poster for the local band Broken Couch Club. In the print, I decided to have a retro TV with a swirl displayed on the screen. Underneath the TV I wrote "Broken Couch Club" in old magazine font. I chose the colors blue, magenta, green, and orange because I think they contrast well together and give the piece a retro feel. I printed the image on green paper and used mixed ink to achieve the other colors. I used screen filler to block out and print all of the colors individually and drawing fluid to line the image in black for the final print.

I WILL REMAIN

Audrey Harlacher
Faculty Sponsor: Ljiljana Obradovic-Edmiston

With this project I plan to screen print images of a scene from norse mythology known as Loki's punishment. The main focus of my piece is Sigyn and her faithfulness to Loki. To make this piece I first sketched out several ideas, until I drew a picture I liked. Then I traced the image onto the screen and blocked out the positive and negative spaces. I will start with the largest block of color, and work my way to the smallest amount of color. The final aspect of this print will be the text. It will say "Til the end of the world, I will remain."

HANDMADE JEWELRY

Audrey Harlacher
Faculty Sponsor: Julie Baroody

My works are pieces of jewelry. I love making functional pieces of art that you can wear and use to express yourself. I like to use silver because it is easily malleable and I like the color. I am inspired by things around me in my daily life--the people and things that move me and make life worth living.

FOOD SUSTAINABILITY FIGHTS HUNGER IN TALLAHASSEE

Kyh Hayes
Faculty Sponsor: Dr. Renee Gordon

Through a Canon Rebel T7, using an 18-55mm lens, this miniature documentary's purpose is to reveal the underpinnings of Tallahassee, Florida's agricultural and food networks by embodying its food sustainability culture, while raising awareness about the city's ongoing hunger crisis. Tallahassee has kept alive a long-standing tradition rooted in local agriculture and community unification and has over 100 food resource centers and organizations. However, in 2022, Feeding America reported, more than 30,000 people face food insecurity in Leon County. Divided into three sections: 1) Culture and Kinship, 2) Subsistence and Economics, and 3) Race and Ethnicity, this visual presentation will display a series of interviews montaged into a short film highlighting local food distribution centers, gardens, and farmers describing their continuous will to provide sustainable produce to their community facing hunger.

FLY IN THE FRYER

Kaitlin Hoebich

Faculty Sponsor: Ljiljana Obradovic-Edmiston

"Fly In The Fryer" is a screen printed piece depicting a band poster for a made up band. I used both screen filler and drawing fluid to achieve my design. The drawing fluid was drawn onto all the lettering, paired with a pass of screen filler to create sharp, isolated stencils of the words. For the picture of fly's head, I used a layering technique with the screen filler, printing each color on top of the previous and blocking out the regions that should stay their printed color. I used both of these techniques to print on different colored sheets of paper to create unique pieces with the same design.

STAR DREAMER

Makayla Holmes

Faculty Sponsor: Ljiljana Obradovic-Edmiston

This painting depicts how I daze off into my own mind, whether that be from day dreaming or having vivid and colorful dreams. This painting is supposed to evoke a feeling of calmness and the free eternal space of possibilities that comes from daydreaming. For this piece, I used acrylic paint in the color scheme of cool blues, purples, and black as a way to inspire an ethereal feeling. I also added silver paint to give the painting more texture and dimension. The flowy Afro is a depiction of dreams being wild and free. The bright yellow light is representative of how dreams can also control and affect our moods. First, before painting, I made a rough sketch on the canvas. Then soon after that, I started to lay all my colors down. I hope this painting gives people a moment of peace.

FRIENDSHIP

Arabella Hudson

Faculty Sponsor: Kelsie Parker

This piece represents my experience at TCC: creativity, passion, individuality, and vigor. My artwork depicts a young woman, a fellow student in my math class, representing friendship and individuality. As I started my artwork I decided to project her image onto my canvas and sketch her face using that as a reference. I completed my sketch, and even though using a projector for art is becoming more popular, it felt like cheating. I decided to start over without projecting her image onto my canvas. While color adds a unique pop to art, I decided to leave this piece as a sketch because it is beautiful in its simplicity.

JUNGLE TIME FOR YOU

Flood Hulbert
Faculty Sponsor: Ljiljana Obradovic-Edmiston

My intention for this piece was primarily to explore the medium of screen printing for the first time, as well as to make a cramped-feeling piece with harsh juts across the image of a close-up, stylized face. This piece can be seen as a self-portrait of sorts, with dark red wrappings around the head acting in a complementary color scheme with the foliage enwrapping, entrapping. It's a dark, brooding sort of piece, with only the skin tone and the white of the paper providing relief and contrast against the dark surge, especially from the cutting lines of the background layers. As it was my first screen print piece, utilizing contact paper over the course of seven layers, there were a few difficulties that added personality, but the intended effect still carries through; someone trapped in the frenzy mess of the jungle.

THE WONDERS OF JEWELRY MAKING

Matthew Kratofil
Faculty Sponsor: Julie Baroody

Jewelry making is my center of all the crafts I enjoy. I can work with my hands to create amazing pieces that reflect my personality. Once completed, I am able to wear it and display it for all to see and admire. Their praise and compliments for my art makes my spirit rise and fills my soul with joy at seeing my hard work appreciated for the time I took to make something beautiful. Jewelry is not just something for me to wear, it is a way for me to express my inner-self on the outside. I am shy and struggle to open myself up to others, but my crafts allow me to show people what I am capable of and what brings me joy. Jewelry making is my way to create pieces that symbolize who I am not only as an artist, but also as a person.

BEGINNING TO CREATE JEWELRY: FINDING BEAUTY IN THE MISHAPS

Citlali Patino
Faculty Sponsor: Julie Baroody

The purpose of my study was simply to explore the basic techniques of jewelry-making and to develop my own personal style within a new medium. As an artist, I believe it is important to expand one's horizons when being creative. Working with silver was always something I had been interested in, and I was presented with a wonderful opportunity to take a class that would allow be to gain that experience. My project consists of several pieces of silver jewelry. In order to make each piece, I had to measure, cut, file, solder and polish the silver to bring my ideas to life.

A DAY IN A CASTLE

Jakarbi Pemberton
Faculty Sponsor: Ljiljana Obradovic-Edmiston

My art project is a tribute to the majestic settings of Game of Thrones, focusing on medieval architecture. Using graphite pencil, I aimed to capture the grandeur of castles and buildings from the show, emphasizing intricate details and dramatic lighting. Beginning with two-point perspective, I laid the foundation for each composition, ensuring depth and realism. I then meticulously rendered textures, from stone walls to wooden panels to authentically portray medieval architecture. Lighting was key in creating a dramatic effect. By manipulating shadows and highlights, I added depth and intensity to the drawings. Through this project, I sought to showcase not only my artistic skills but also to pay homage to the visual splendor of Game of Thrones. I hope these drawings transport viewers to a world where fantasy meets reality, evoking a sense of awe and wonder.

WHERE IS THE MOON?

Arianna Perruzzi
Faculty Sponsor: Ljiljana Obradovic-Edmiston

In this piece, I explored the method of stippling while exaggerating a current event, the moon's shrinkage. Stippling is a process that relies on various steps to create a piece that tells a story. The overall idea is simple: Place many dots close together to create a darker value and fewer dots spread farther apart to create a lighter value. However, understanding value, making use of negative space, and precise detailing are crucial. After studying the method and completing an exercise focusing on values and details, I began researching and forming my idea conceptually. I collected various images I would utilize to help create my piece and began editing their lighting to better understand their values. The stipple technique helped in creating the sense of space and the idea the astronaut was floating. Stippling can be used to explore and convey information and can influence engagement on topics that need awareness.

OUT WITH THE OLD?

Lainey Smith
Faculty Sponsor: Ljiljana Obradovic-Edmiston

This piece is a study of perspective while practicing basic shapes from various points of view. I fell in love with the distorted nature of three-point perspective and began seeing what buildings and shapes I could elongate and deconstruct. Pyramids mark an incredible technological achievement in human history. But as time moves on and architecture trades artistic expression for mechanic efficiency, we see these incredible monuments fade into disrepair, a relic from when humans were just humans rather than robots that must maximize efficiency in every aspect of life. Taking a step back and deconstructing how far we've come as humans could teach the modern world a lot about what it means to have humanity. There's a juxtaposition between this piece and its meaning; its clean lines allow for a quiet view to let audiences imagine what this great monument once was and what modern architecture relegates it to.

BREATHING LIFE INTO THE INANIMATE: TURNING SILVER INTO ART

Keira Tuten
Faculty Sponsor: Julie Baroody

One of the biggest draws of jewelry making for me is being able to bring an idea in my head to life. It is incredibly fascinating how you can take a simple sheet of metal or wires and manipulate it into a piece that resonates. Being able to create and give life to inanimate objects, like silver, is awe-inspiring. I take a lot of my inspiration from literature: books, movies, tv-shows, video games; I enjoy getting the chance to take something that is so meaningful to me and turning it into something beautiful. Being able to share the joy that I receive in making these pieces with others is indescribable. These pieces are a representation of the things I find joy in and a product of labor and love.

BROKEN LIVES IN THE WORLD AROUND US AND HOW THEY CAN CHANGE AN IMAGE

Catherine Winter
Faculty Sponsor: Joshua Flores

This study investigated how a broken person can become something more in the world. I have personally been broken in my life through losing people who were my mentors and role models. During this study, I used my brokenness to create how a person who is broken can then turn their life into something stronger and more beautiful than before. I started off by cutting up a 4" square of black construction paper and arranged it into the shape of a tree on white Bristol board. Trees are a symbol for new life. When others look at this work, I want them to be able to use their own brokenness to create a beautiful new life for themselves and start a fresh chapter.

PERFORMING ARTS

BIRD

Elizabeth Blair
Faculty Sponsor: John Schultz

This performance examines how a child with disabilities affects the dynamics of a family, especially between parent-child and brother-sister relationships. The presentation of this piece was inspired by a 10 year study by the Kennedy Institute that found that parents who face the challenge of having a disabled child are nearly twice as likely to divorce. Researchers said that this rupture of the relationship was caused by obvious factors, such as economic strain and individual stress. The study further asserted that while disability may tear the parents apart, it often creates stronger bonds between brother and sister. In this piece, we see a girl observe her brother's journey with deafness throughout their lives, and are shown how tolerance, acceptance, and love of a disabled child can make all of the difference.

LOST AND FOUND

Janelle Dixon
Faculty Sponsor: John Schultz

CBS News, on December 29, 2023, reports that only a few months after the devastating Maui fire, the Hawaiian governor has invited tourists to return. Native Hawaiian residents told CBS they fear being pushed out of their homeland because of the rising costs and forced relocation to accommodate tourists. Native Hawaiians have the highest rates of homelessness in the state, with 121 out of every 10,000 people not being able to live in their own land. Hawaiian people are continually forced to sacrifice their culture, their land, and their autonomy in order to support an economy that does not support us. This series of native Hawaiian poems and works will help to convey the feelings of the Hawaiian people in this time of crisis. As a native Hawaiian, I am performing this piece to let our voices finally being heard.

Acknowledgements

The 2024 Undergraduate Research Symposium is the capstone event for Tallahassee Community College's Undergraduate Research Program, which is now in its fifth year. Hosting an academic symposium is a significant undertaking, and it would not be possible without the dedicated work of the program's coordinators.

This symposium and all other activities of the Undergraduate Research Program are coordinated by TCC's Undergraduate Research Council, an interdisciplinary group of faculty and staff who volunteer their time and efforts toward making each year's symposium a success. A tremendous debt of gratitude is owed to them.

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Special thanks are also due to first-time sponsor Publix for their in-kind contribution of refreshments for our closing reception.