

# CREATE

CELEBRATING RESEARCH EXCELLENCE & ARTISTIC TALENT AT EASTERN

April 25, 2025



**EASTERN  
CONNECTICUT  
STATE UNIVERSITY**



April 25, 2025

Schedule at a Glance

Time	Student Center Meeting Rooms	Student Center Theater	Betty Tipton Room	
8:30 - 9:00	Registration and Breakfast – Student Center Café			
9:00 - 10:30	Concurrent Sessions		Poster Set Up	Costume Installation
10:30 - 12:00	Concurrent Sessions		Poster Set Up	<b>Student Center Mezzanine</b>
12:00 - 12:45	Lunch – Student Center Café			9:00 – 12:00
12:45 - 1:00	<b>President’s Remarks and Awards Ceremony - Betty Tipton Room</b>			
1:00 - 2:00	Poster Presentations - Betty Tipton Room			Artwork Display
2:00 - 3:30	Concurrent Sessions		Jazz Performance Student Center Café	<b>Wood Support Center Gallery</b> 1:00 – 4:00



CREATE stands for Celebrating Research Excellence and Artistic Talent at Eastern, and it is the University's annual conference showcasing student research and creative activity. The one-day conference includes talks, professional posters, live music, art exhibits, documentaries, and panel discussions. CREATE displays the vitality of Eastern as Connecticut's premier public liberal arts institution.

With Eastern's undergraduate research showcase now in its 25<sup>th</sup> year, CREATE serves to:

- Showcase excellence across all academic programs
- Reinforce high-impact practices such as mentored research and creative projects
- Increase the percentage of students presenting their research and creative work
- Allow students to demonstrate our liberal arts employability skills – critical thinking, ethical reasoning, creativity, communication, and quantitative literacy
- Raise public awareness of Eastern's uniqueness and the accomplishments of our students
- Contribute to the intellectual richness of our campus community

Thank you for attending CREATE 2025 and congratulations to all of our participating students for their hard work and academic achievements!

*Eastern Connecticut State University engages students from diverse backgrounds in a transformative, liberal arts learning experience that provides knowledge and skills to lead enriching, purposeful lives.*



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## Artwork Abstracts

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### **International Mother Language Day Poster**

Maria F. Arredondo

*Faculty Mentor:* Kin S. Chan (World Languages and Cultures)

In celebration of International Mother Language Day on the 21ST of February, I was approached by the World Languages and Cultures Department to create a poster for their Eastern event honoring its values and interests. It is a UNESCO-designated day to promote language and cultural diversity. Born from the language riots in Bangladesh, it was established as a international holiday to encourage peace and multilingualism. I was given full creative liberty with the exception of the inclusion of two key details. The full title and date of the holiday. Details such as the color palette, composition, and content were left up to my artistic interpretation. The goal was to create a poster with a warm, welcoming style and color palette which not only attracted individuals to the special event, but also brought its awareness. Several concepts were drawn traditionally before transferring them through a series of digital illustration programs. The final concept I chose was that of voluminous tree with twisting roots which sat upon a cluster of interweaving speech bubbles. In each speech bubble, the word “United” is translated over and over across many languages, but all expressing the same message. Just as a trees roots represent its foundation and growth, language is the root of an individual’s identity and culture. Similarity, like how a tree survives through an interconnected system of roots, the languages that are spoken help to bind humans beings together as one.

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### **Feathers and Scales**

Roman Azzolino

*Faculty Mentor:* Soojin Kim (Art and Art History)

This comic explores the complicated relationship between the Fenghuang and the Dragon. Two prominent figures in Chinese folklore. The story looks through the lens of a personification of the mythology. Once childhood friends, Fenghuang and Hanjun now find themselves on opposing sides of a conflict torn apart by the chaos of war.

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### **Spider Veins**

Manderz Baranowski

*Faculty Mentor:* Afarin Rahmanifar (Art and Art History)

What fears do you harbor? How deep do they run? Do you feel them in your blood, your veins? The level of discomfort one experiences while regarding this acrylic painting is completely reflective of their own phobias. My intention with this project was to draw a visual connection between the widely held aversions to spiders and aging – both of which are often harmless and misunderstood, resulting in a society with a deeply skewed perception of these natural beauties. While my process

was technically and emotionally challenging, it is my hope that the result is a provocative surrealist scene that unnerves some and excites others.

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### **Better Days Ahead**

Ariana Bradley

*Faculty Mentor:* Afarin Rahmanifar (Art and Art History)

For this artwork, I did the concept of the passage of time, as well as decay and growth. The mediums range of acrylic paint, wood, floral/greenery, and CDs. From the bottom of the piece shows a giant skull as the personification of death, transitioning from decaying flowers, to the ground showing roots that later transition to a giant weeping willow, with flowers blooming. This mixed media piece represents an individual who is going through a dark time. There are two figures sitting at the base of the tree on a cliff, who resemble the same person: one as the past and the other as the future. The future individual sits by the past individual's side. They assure the past individual that what they are going through is only temporary and that there are better days ahead.

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### **Day and Night**

Nancy Davis

*Faculty Mentor:* Afarin Rahmanifar (Art and Art History)

Swirls of spring sunshine meet the cool afternoon.

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### **My Little Pony Relationship Chart**

Jessica Day

*Faculty Mentor:* Soojin Kim (Art and Art History)

This chart positions fourteen characters and a school to chronologically visualize the mentor / student relationships and close friendships of My Little Pony: Friendship is Magic's main cast. Made in Adobe Illustrator.

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### **Bird Bath**

Jessica Day

*Faculty Mentor:* Lora Lee (Art and Art History)

One of an edition of five, this piece explores the balance between life and death and what lurks beneath the surface. Made with two carved linoleum blocks and printed on printmaking paper.

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### **Character Design**

Caleb Gagnon

*Faculty Mentor:* Lora Lee (Art and Art History)

This is an illustration featuring three original characters, created using digital tools on an iPad.

### **Untitled**

Nina Grim

*Faculty Mentor:* Afarin Rahmanifar (Art and Art History)

In this project I explore the concept of Surrealism. I delve into the subconscious mind to express my fantasies through my self-portrait.

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### **Becoming the Wolf**

Nina Grim

*Faculty Mentor:* Afarin Rahmanifar (Art and Art History)

This piece explores how easy it is to lose yourself in who you're pretending to be, and the consequences that come with that.

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### **Character Design**

Amritleen Kaur

*Faculty Mentor:* Lora Lee (Art and Art History)

This illustration is a personal project completed using digital tools. The Twilight Trio is a group of friends from a Dungeons and Dragons campaign. Despite all of their conflicts and struggles, they continue to prevail and remain friends.

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### **Overstuffed and Understuffed**

Lauren Kennedy

*Faculty Mentor:* Afarin Rahmanifar (Art and Art History)

This is a representation of the feeling of being overwhelmed and underwhelmed. The bear represents overwhelmed through it being overstuffed and bursting at the seams. The bunny represents underwhelmed through it being understuffed.

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### **Delicacies**

Kara Mahoney

*Faculty Mentor:* Robert Greene (Art and Art History)

A group of oysters constructed from mixed medium including wood, clay, metal, and collage, displayed on a circular mirror. "Delicacies" was created as a way of grappling with ambition, desire, and fate.

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### **Reaching Hand**

Michael O'Gara

*Faculty Mentor:* Afarin Rahmanifar (Art and Art History)

Exploring the various lines and colors found in a hand.

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### **Dance With the Dead**

Kaycha Perez

*Faculty Mentor:* Afarin Rahmanifar (Art and Art History)

Time spent with family friends and strangers we all have a dance with life.

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### **BLOOM Packaging Design Concept**

Ivy Poulakos

*Faculty Mentor:* Soojin Kim (Art and Art History)

Package design for a conceptual natural fruit flavored soda product. The design is meant to convey a natural feel to convey that the soda is made with natural flavoring.

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### **Marvel Rivals Character Concepts**

Savion Ross and Nina Grim

*Faculty Mentor:* Soojin Kim (Art and Art History)

Inspired by the video game "Marvel Rivals", these art pieces are meant to understand the visual styles of the character designs of the game, as well as include some personal design choices to bring the character to life.

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### **Magia Cafe Perfume: Bunnie**

Jimena Santos

*Faculty Mentor:* Soojin Kim (Art and Art History)

Magia Cafe is a made-up perfume brand that aims to combine functionality and art! Heavily inspired by the Mahou Shoujo/Magical Girl Genre, it caters to collectors and enjoyers of cutesy aesthetics alike and shows like Pretty Cure and Sailor Moon. Each of the bottles is correlated to a character! The first product of this line is based on Bunnie, an angel-themed magical girl. The scent would be comprised of Vanilla, Cotton Candy, Meringue, and bubble gum!

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### **Euphoric Decay**

Julia Terranova

*Faculty Mentor:* Robert Greene (Art and Art History)

Euphoric Decay is a wearable art piece that encapsulates a multitude of feelings and concepts. While making this piece I was relating to it in many different ways, I saw my relationship with femininity, my mental health, even how I interact with people. I really encourage each viewer to interpret the piece in your own way. When has something in your life made you feel like the beautiful wing on the outside while truly feeling like the decayed wing on the inside? How has something in your life slowly decayed or faded away? Where do you see these patterns of impermanence, fragility, facades, or fading throughout your life?

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### **Altar Alchemy Package Design**

Julia Terranova

*Faculty Mentor:* Soojin Kim (Art and Art History)

Altar Alchemy was made for a sustainable product project in Packaging Design. Altar Alchemy is a skincare brand inspired by witchcraft. Skin Cleansing Potions are facial cleansers that use herbs as the main ingredient instead of long chemicals the customer has never heard of. The company uses herbs for their medicinal properties as well as their metaphysical properties; herbs are also a sustainable and renewable resource. Most people recognize certain herbs from the kitchen or recipes and might not know of the health benefits. Within the practice of witchcraft herbs are not only used for their medicinal properties but also for spells, potions, and rituals. The meta-physical properties of herbs and plants are typically positive attributes. Common meta-physical properties of plants are protection, love, healing, abundance, luck, or cleansing. There are a lot of negative stereotypes about witchcraft and this project aims to redefine these negative stereotypes. Witchcraft is a practice of healing and community, witches are attuned to the earth and respect nature.

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### **Ripples Through Time**

Meghan Turco

*Faculty Mentor:* Afarin Rahmanifar (Art and Art History)

This piece was about how easy it is for memories to ripple away and how hard you try and grasp on to them for dear life.

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### **Sticker design for winter “Art At Eastern”**

Arianna Vernola

*Faculty Mentor:* Soojin Kim (Art and Art History)

For my design, I illustrated a dog with reindeer antlers and a red nose like Rudolph the reindeer and included “Art at Eastern” in red and green lettering to make it Christmas themed.

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### **“Dear, Dad..”**

Lilian Vinsel

*Faculty Mentor:* Robert Greene (Art and Art History)

I will be presenting my stone sculpture of a human, anatomically-correct heart carved out of black soap stone. This piece is in commemoration of my father who passed from terminal disease. The heart is hollow, holding the ashes of my father along with a note, and sealed tight with epoxy. The heart will be positioned on a stand.

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### **ExpHAIRiment Hairspray - Packaging Design**

Meghan Wrobel

*Faculty Mentor:* Soojin Kim (Art and Art History)

ExpHAIRiment is a fictional hairspray company that not only allows you to achieve the best volume and hold for your hair, but also allows you to embrace your creative side and invent looks that embrace the best parts of you. This project represents a fun, experimental, and illustrative design that stands out from the bold and professional look of most other hairspray brands. The play on words and visual scribble design in the logo emphasizes the power of experimentation and catches the attention of those who are looking to switch up their hairstyle or have a product that gives their hairstyle a new boost. This design also includes fun, bright colors that are used to bring attention to certain elements of the bottle, rather than being used on the entirety of the bottle as seen on most other hairspray brand designs. The main image also includes a collage pattern of different hair products as another way to visually portray experimentation and expression, which is the main mission of this brand.

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## Oral Presentation Abstracts

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### **A Modernized eWeb Design**

Abdul Ajmal, Felix Li, Mitchell Peterson, and Robyn Vetterkind

*Faculty Mentor:* Niki Kunene (Accounting and Business Information Systems)

The current eWeb design is outdated, hard to navigate, and creates a poor first impression for incoming students. As a vital tool for students, faculty, and staff, its clunky interface leads to frustration and inefficiency. Our goal is to modernize eWeb with a clean, intuitive, and mobile-friendly design that enhances usability and satisfaction. A fresh design will reduce the time it takes to register, find classes, and complete essential tasks—while maintaining security and core functionality. Although implementation may raise concerns, a streamlined and appealing update will improve the user experience, boost student and faculty satisfaction, and enhance Eastern's overall image. By gathering feedback and conducting surveys, we'll build a strong, data-driven case for the redesign. We are also developing a prototype to demonstrate what a reimagined eWeb could look like. Ultimately, a revamped eWeb will reflect Eastern's commitment to progress, provide an improved digital experience for all users, and create a more welcoming first impression for first-year students.

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### **Landscaping Meets Large Language Models: Exploring ChatGPT's Role in a Local Family Owned Lawn care and Landscaping Business**

Blaze Armogida

*Faculty Mentor:* Sukeshini Grandhi (Business Administration)

Family-owned and operated small businesses serve as the backbone of local communities. However, they often face challenges, such as inefficient and ineffective marketing and operational strategies, that hinder their sustainability and ability to compete with larger enterprises. Outsourcing specialized services or tools to address these challenges is frequently cost-prohibitive. The use of generative AI, such as ChatGPT, to support marketing and operations offers a potential solution, providing significant benefits at a fraction of the cost of hiring additional personnel. This case study examines the value of ChatGPT for a small, local lawn care and landscaping company. Our findings provide insights into both the advantages and limitations of utilizing ChatGPT to assist family-owned small businesses in enhancing their operations.

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### **Identification of Tetrahydrocannabinol (THC), Cannabinol (CBN), Cannabidiol (CBD), and HU-210 in Cannabis using Surface Enhanced Raman Spectroscopy (SERS)**

Grace Barlage and Neema Rock

*Faculty Mentor:* Syed Islam (Physical Sciences)

A report published by the Center of Diseases Control (CDC) announced that nearly 108,000 people dying from drug overdoses in 2022, and approximately 82,000 of those deaths involving opioids and cannabinoids in the U.S. As a response to this crisis, developing a sensitive, fast and reliable

detection technique of these forensic substances has been an essential challenge in the forensic community. In response to this challenge, Surface Enhanced Raman Scattering (SERS) has recently gained considerable attention as a sensitive, rapid and non-destructive technique for forensic analysis. SERS is characterized by strong enhancements of the vibrational signals of molecules adsorbed on plasmonic substrates. The major advantages of SERS technique include sample size requirements, minimal sample preparation and the lack of chemical and mechanical pretreatments of the sample. This makes SERS an excellent analytical method for the detection of opioids and cannabinoids. In our present study, we have undertaken the SERS study of tetrahydrocannabinol (THC) and three of its analogs: cannabinol, cannabidiol and HU-210. Our study shows significant enhancements of the Raman signals in the SERS spectra of these drugs. These enhanced Raman peaks can be used as characteristic spectral “fingerprints” for the identification of these drugs for future reference.

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### **Video Guides of the J. Eugene Smith Library**

Robert Barrow and Camila Nobre

*Faculty Mentor:* Brian Day (Communication, Film and Theatre)

Led by Joel Jenkins, the tour video serves as an introduction to the functions of the J. Eugene Smith Library. The goal of this video is to not only to demonstrate everything the library has to offer, but to also encourage students to use its resources. Joel continues his tomato research into the second video installment where he explains how to navigate the library's online catalog and physically locate books in the building.

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### **Fitting Dreams into Functionalism**

Sierra Bedard

*Faculty Mentor:* Karl Stocker (Political Science, Philosophy, Geography)

When we think about dreaming, we often think about vivid, alternate realities that feel very real while we are asleep, but as we wake up, they fade away. Dreams may seem meaningless, or meaningful, but do they serve a function in the same way that other mental states do, or are they just strange side effects of brain activity? So where do dreams fit into our understanding of consciousness? If we are to develop a complete theory of mind, one that fully explains how we experience the world, then we must consider whether dreams are meaningful mental states on their own, rather than treating them as insignificant side effects of brain function. However, the leading theory of mind, functionalism, has difficulty explaining the role of dreaming and other qualitative experience. This paper argues that any theory seeking to fully explain consciousness must find a functional role for dreaming and qualitative experience, rather than dismissing them as mere byproducts of the mind.

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## **Transcending the Veil: Spiritualism, Séances, & Abraham Lincoln's Ghost in Cultural Memory**

Matt Belden

*Faculty Mentor:* Thomas Balcerski (History)

This paper examines Abraham Lincoln's ghost stories as reflections of national trauma and cultural anxieties from the Civil War, highlighting the emergence of spiritualism to cope with an unprecedented death toll. It discusses the life of Mary Todd Lincoln and her reliance on séances as she mourned her loved ones. It also explores the way that President Lincoln's sudden assassination further devastated the nation at a time when its future appeared promising. These sections aim to provide historical context vital to understanding American families' relationship with spiritualism, especially the Lincolns, and how the nation came to embrace stories of continual spiritual presence. The latter half of the paper analyzes the transformation of President Lincoln's memory from a simple man to a legendary figure in death. It traces his postmortem presence as an enduring symbol of morality and national unity. Additionally, it contemplates the influence Victorian mourning customs had in creating the image of President Lincoln's ghost and how this portrayal has been repurposed in modern media, particularly during political tension. In this, ghost stories invoking President Lincoln's image reveal the cultural anxieties of his era and the lasting imprint events of the Civil War period had on the American consciousness.

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## **Emergent Bilingual Preschoolers' Math Proficiencies and Development**

Corrie Bonomi

*Faculty Mentor:* Sudha Swaminathan (Education)

Emergent bilingual children carry unique assets but typically perform significantly lower than their monolingual peers. In this mixed-methods study, we tracked the Math development of emergent bilinguals across one year and supplemented this data with classroom observations to arrive at characteristics of supportive environments for emergent bilingual students. The Math abilities of seven emergent bilingual preschoolers of mixed age and gender from a campus lab school were measured at four time points. The emergent bilingual preschoolers scored lower than their monolingual peers at all four times but demonstrated significant growth from time 1 to time 4, thereby attesting to the supportive classroom environment. Between times 3 and 4, a case study was conducted of one emergent bilingual child. It was noted that teachers emphasized key discourse and content words in their interactions with the children. This appeared to provide the children with a vocabulary for connecting their acquired knowledge. Teachers engaged in culturally sensitive pedagogy welcoming the children's bilingual funds of knowledge and practices. They encouraged translanguaging and gender-neutral discourse, further widening the scope of interactions for all children. Further research is necessary to unravel the nuances of classroom practices that support emergent bilingual students from specific language backgrounds.

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### **Improving Parking at Eastern**

Josh Bouchard, Ava Byers, and Justin Falasco

*Faculty Mentor:* Niki Kunene (Business Information Systems)

We as a group were discussing our experiences parking in various locations across Eastern's campus, we noticed the parking garage was too far out of the way from where we live and our classes. Because the parking garage is a several minute walk away from learning halls such as Webb and Goddard, we all experience walking-in late to class because we struggle to find an available spot. At first, the idea to solve this was simple, just create more spots at certain lots on campus or make faculty parking available for students after a certain time. But the reality is that this would only solve the problem for a handful of students, and the problem would stay the same for the majority of students who live on the south campus. Additionally, as a state-funded university, we are aware that there is a low probability that state allocated funds would go towards creating additional parking spots for undergraduate students. To combat the existing parking issues, we suggest creating a centralized parking application that shows students and faculty alike where the available parking is on campus in relation to their status.

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### **Hell for Children: Dante's Divine Comedy in Over the Garden Wall**

Shannon Carbonell

*Faculty Mentor:* Allison Speicher (English)

Within pop culture, there often exist cases of intertextuality with literary canon. Dante's Divine Comedy, for example, has inspired other works set in hell. Despite the 'mature' content, there are cases in which children's media demonstrates this sort of relationship. I contend that Dante's Divine Comedy is an inspiration for the Cartoon Network miniseries Over the Garden Wall (2014), a truly unlikely place to find classical literature references. The plot lines, character structures, and imagery pulled from the Inferno are used to delineate the fictional place of the Unknown. By using Over the Garden Wall (2014) as a case study to reflect on the influence of canonical adult literature on children's horror, I demonstrate that the relationship between the literary canon and all other kinds of media is a porous one where ideas and inspiration flow, creating new works in all forms of media for all audiences.

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### **Depicting Multitudes: Juan de Pareja and Biracial Representation in Portraiture**

Elizabeth Craig

*Faculty Mentor:* Maeve Doyle (Art & Art History)

For millennia, portraiture has been a vessel for expressing oneself without words. It's also a means for an artist to express their perception of their subject. Representations of ethnic minorities in art history are not unheard of, but in many Western narratives they're typically less flattering than their Caucasian counterparts and don't acknowledge people of multiple backgrounds. As a biracial woman, much of my research is dedicated to the legacies of biracial historical figures; I believe that Baroque painter Juan de Pareja exemplifies biracial representation succinctly. Pareja was born in 1606 in Seville, Spain, was a revolutionary painter of mixed African and Spanish descent. He spent the first 20 years of his life in captivity to baroque painter Diego Velasquez. After being freed, Pareja would lead his own life as a painter and depicted himself in his most famous painting, "The Calling

of Saint Matthew.” Pareja’s portrait differs greatly from Velasquez’s, which toned down Pareja’s appearance. This is frequent in depictions of biracial people, where their heritage would be visually erased by whitewashing or blackwashing their features. Using Velasquez’s and Pareja’s paintings as examples, I will explore portraiture of biracial figures and the general erasure of biracial people throughout history.

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### **The Ethics of Artificial Intelligence in Creative Writing**

Sean Crisci

*Faculty Mentor:* Stephen A. Ferruci (English)

As artificial intelligence (AI) continues to integrate into daily life, understanding its capabilities, limitations, and ethical implications is essential. My research and argument explore why education on generative AI matters for creative writers, though applicable to any career, regardless of whether individuals choose to use it professionally or for hobby. During my research, I have examined the ethical concerns of intellectual property surrounding generative AI from the perspective of a creative writer. I argue that informed engagement—whether through direct use or critical awareness—empowers individuals to navigate AI responsibly. By fostering a discussion that highlights both the potential and the pitfalls of generative AI in creative fiction, poetry, and publishing, I encourage audiences to think critically about their role in an AI-driven world. Because artificial intelligence continues to shape industries, creativity, and communication, the goal of this research is not only to inform but also to inspire deeper reflection on the ethical uses of generative AI in creative fields.

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### **Administering the Attention Network Task using PsychoPy**

Raya Cruse

*Faculty Mentor:* Stanislaw Kolek (Psychological Science)

Attention Network theory posits that attention consists of three networks: alerting, orienting, and executive attention. Alerting is being prepared to react to stimuli quickly, orienting is being more attentive to a certain location, whether overtly, by looking at the location which one is attending to, or covertly, and executive attention is being able to respond to stimuli despite conflicts (Posner & Petersen, 1990; Posner & Rothbart, 2007). The Attention Network Task (ANT) was developed based on these networks (Fan et. al., 2002). In the ANT, participants see a fixation cross, and they keep their eyes on the cross as a cue might appear. This cue may or may not tell them where a stimulus will appear. They then see a set of arrows, which may be flanked by congruent or incongruent arrows or neutral dashes, and they respond whether the center arrow is pointing to the left or the right. I will demonstrate a version of the ANT I have coded using PsychoPy software (Pierce et al., 2019) and discuss the applications of the ANT to understanding human cognition.

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### **Renovating the Sports Center**

Sean Cafferty, Tanner Davis, and Daniel Lombard

*Faculty Mentor:* Niki Kunene (Accounting and Business Information Systems)

In its current state, the ECSU sports center is run down, outdated, disheveled, and inadequate. There is a well-established need for crucial renovations to be made to the ECSU sports center. The

layout of the facilities is not conducive with athletes that perform at their best. Swim athletes are forced to change in a locker room with inadequate lighting or privacy, and away teams for sports such as swimming, basketball, soccer, and many others, are forced to change in the hallway. How does this look from the away team's perspective? How is this discussed and portrayed at other schools and towns by athletes that have been forced into these conditions? Not only does it damage the reputation of ECSU, but it affects the athlete's ability to compete and perform. Athletes should be spending their time thinking and focusing on what's to come in their competition or practice, not the lack of quality in their facilities. These conditions warrant massive renovations, but there's still a demand for even minor renovations that give the schools athletes the bare minimum of conditions to change and train in. With the new Fine Arts Center having finished construction not even ten years ago for roughly \$62 million, it's hard for students to believe that ECSU doesn't have the money for even the bare minimum of renovations. We feel that whether it be in the form of renovating the existing sports center or the construction of a new sports center building, the facilities are in need of a massive upgrade that should be completely attainable.

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### **Course Scheduling Conflicts for Athletes**

Anthony DeSabella, Michael Furgalack, Tim Lee, and Joshua Pyle

*Faculty Mentor:* Niki Kunene (Accounting and Business Information Systems)

Our goal is to make it easier for student-athletes to register for the classes they need without conflicting with practice or game schedules. We will survey athletes about their experiences with course registration, to better understand the scope of the issue and prove the need for change in athletic course scheduling. Big Idea: Tailored course scheduling and early registration for athletes can significantly reduce scheduling conflicts and improve both their academic and athletic success.

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### **Second Dining Hall Initiative**

Mollylynn Doherty, Abraham Flores, Daniel Gallagher, and James Lukow

*Faculty Mentor:* Niki Kunene (Accounting and Business Information Systems)

The idea we would like to propose is implementing a second dining hall on the south side of campus that has extended hours compared to Hurley Hall. We will need to collect student data such as where they dorm and how often they frequent the dining hall, and if the hours or location of Hurley Hall has ever inconvenienced them. Another dining hall could help boost Eastern's reputation, and an alternate location could help motivate students to buy meal plans and eat on campus more often. Our idea has various risks such as the price and time of construction and budget limitations for food and staff, but we believe the extra revenue from another dining hall would cover any initial financial loss. A successful outcome for our idea would be a new dining hall facility on the south side of campus that is located closer to educational buildings and various dormitories compared to Hurley and is open later at night. The dining hall would ideally generate enough revenue to fund supplies and staff and would help make dining more accessible to students.

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## **Leave it at School: How Teachers Manage Emotional Labor and Work-Related Stress**

Francette Donato

*Faculty Mentor:* Cara Bergstrom-Lynch (Sociology, Anthropology, Criminology and Social Work)

Teaching is a profession that extends beyond instructional duties, encompassing significant emotional labor as educators navigate lesson planning, administrative responsibilities, and student support. This study explores how teachers manage these emotional challenges and whether they can maintain a balance between their professional and personal lives. Additionally, it examines whether the emotional demands of teaching contribute to the increasing teacher shortage by driving educators out of the profession. Guided by the research question: How do teachers manage the emotional challenges of their work, and what strategies help them balance their professional and personal lives? This study employs a qualitative approach, analyzing interviews with teachers across different educational levels. The findings reveal recurring themes such as burnout, workload pressures, lack of administrative support, and the lasting impacts of the COVID-19 pandemic on the profession. The results highlight the systemic challenges within education, emphasizing the need for structural reforms, improved work conditions, and greater emotional and professional support for teachers. By addressing these issues, this research underscores the importance of sustainable solutions to mitigate teacher burnout and improve retention. Ultimately, the study advocates for policy changes that acknowledge and support the emotional labor required in teaching, ensuring a more sustainable and fulfilling profession.

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## **I Can Read All by Myself, I Can Read Without Your Help: Analysis of Contemporary Early Reader Books**

Savannah Duursema

*Faculty Mentor:* Allison Speicher (English)

Learning to read is a crucial time in childhood because literacy is the basis for all future learning. Early reader books are the first stories a child reads independently, which piqued my interest because they provide children's first opportunity to take in the story, without an adult co-reader skewing meaning. Literature scholars have yet to focus on the content of early readers, though, instead labeling them as simply teaching tools and steppingstones to more sophisticated literature. My research aims to change this perception by answering the question of what exactly young readers are exposed to in these stories, including societal biases towards young people. I have chosen a sample of 12 early readers recommended by prestigious children's literature periodicals and the Geisel Award committee published within the past 5 years and close-read them to understand the concepts implicit in conventions and content. Some findings include that 1) friendship and social skills are highly prioritized topics, and 2) anthropomorphism and the graphic novel form are common tools to create gender neutrality. Early reader books may seem simple, but they hold immense power over the young minds that internalize their messages, so they cannot be ignored by scholars anymore.

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## **Manufacturing Perception: The Post-truth Era and Democracy**

Katherine Escalante

*Faculty Mentor:* Karl Stocker (Political Science, Philosophy, Geography)

In an age where a viral post can carry more weight than a verified news report and political debates are shaped less by facts than performance, what happens to democracy when truth becomes negotiable? This question lies at the heart of what many describe as the "post-truth" era, a cultural and political moment in which objective facts wield diminishing influence over public opinion. This project argues that rather than being shaped by empirical evidence or shared knowledge, public opinion today is increasingly shaped by ideology, emotion, and subjective belief. Building on the works of Baudrillard, McIntyre, and Mill, this research situates the post-truth phenomenon within a broader historical and philosophical framework. It interrogates how media spectacle, hyperreality, and the erosion of epistemic authority have contributed to a public sphere in which appearances and subjective narratives overshadow empirical truth. The structural and psychological factors and cognitive biases that sustain this condition are explored. Additionally, it addresses how political actors exploit these conditions to manufacture consent, manage dissent, and reshape democratic discourse. Ultimately, this research contends that the post-truth era reflects not merely a communication crisis but a profound transformation in the relationship between truth, power, and public life.

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## **Branch Prediction Optimizations in Random and Sorted Data**

Daniel Estrin

*Faculty Mentor:* Garrett Dancik (Computer Science)

In programming, a branch is a set of instructions executed if certain criteria are met. Branch prediction is the method by which computers attempt to predict the outcome of a comparison that results in a branch, usually based on immediately preceding outcomes. This functionality leads to immense increases in computational efficiency, reducing the time it takes to configure the processor. However, this efficiency is only achieved if the prediction is made correctly; otherwise, predictions can result in slowdowns that could lead to less desirable outcomes than if the prediction was not attempted at all. As such, sorting data efficiently may be important when attempting to leverage the branch prediction hardware capabilities of the processor. This too comes with its own drawbacks, as taking the time to fully organize the data can be time-consuming in its own right. The objective of this study is to evaluate the performance of code that leverages branch prediction involving multiple data structures containing data that is unsorted (as provided to it in random order), sorted by sized groups, and sorted contiguously, and testing their efficiency. The results will provide insight into scenarios where data sorting results in better overall performance, because branch prediction is used.

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## **The Impact of Digital Campaigns and Tools on Voting Behavior and Political Engagement Among Younger Voters**

Zia-Grace Generette

*Faculty Mentor:* Nicole Krassas (Political Science, Philosophy, Geography)

Digital campaigns and tools have transformed younger voters' voting behavior and political engagement. It has also changed how social movements are mobilized, particularly by enabling

widespread, rapid communication and fostering networked activism. Increased accessibility, changing information consumption patterns, and facilitating new forms of political expression are a few ways digital campaigns and tools have impacted young voters' political behavior. This paper explores the impact and implications of digital campaigns and tools on younger voters. Data was collected through interviews of college students who were active and inactive in political participation, with thematic analysis from the qualitative data. The results indicate that digital campaigns and social media tools produce positive voter turnout, political engagement, and candidate support. At the same time, these methods resulted in amplified political partisanship, ideological division, and a spread of disinformation. This research highlights the importance of analyzing and implementing digital campaigns and tools to involve younger generations in politics as new methods and strategies emerge to engage and dissuade those in a new era of political knowledge and processes. This paper explores the impact and implications of digital campaigns and tools. have on younger voters.

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### **Baseball Strategies: Small Ball vs. Three True Outcomes--A Preliminary Discussion**

Morgan Glasberg

*Faculty Mentor:* Gregory Kane (Business Administration)

This presentation focuses on the shift in primary strategy in baseball from "small ball" (playing for singles, doubles, and triples to prolong the inning) to the more high-risk/high-reward "three true outcomes" (home run, strikeout, and walk). The preliminary framework for this project, which will include analyzing the rise and fall of the statistics that define these two prominent strategies to find a clear point in time when this shift occurred, is being put forward with the intent of garnering feedback regarding its potential effectiveness and areas for improvement.

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### **Does Family Structure Matter?: How Living in a Stepfamily Affects the Career and Financial Status of Emerging Adults**

Mackenzie Granata

*Faculty Mentor:* Cara Bergstrom-Lynch (Sociology, Anthropology, Criminology and Social Work)

This research explores how emerging adults raised in stepfamilies perceive the impact of their family structure on their career and financial outcomes. Through three qualitative interviews with individuals aged 21–22, key themes emerged, including a preference for biological mothers, positive and negative depictions of independence, role reversals, and financial self-sufficiency as a sign of success. Findings suggest that family structure alone does not determine career or economic stability. Factors like emotional support, attachment security, and parental guidance were found to play crucial roles instead. While some respondents benefited from early independence, others struggled with limited financial literacy and emotional burdens. This research highlights the need for resources that support emerging adults from all types of families, helping them navigate adulthood with resilience and confidence.

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## **College Students' Perceptions of Underage Drinking and the Enforcement of Underage Drinking Laws**

Mackenzie Granata

*Faculty Mentor:* Racheal Pesta (Sociology, Anthropology, Criminology and Social Work)

This study explores college students' perceptions of underage drinking and the enforcement of related laws, using a survey of Eastern students aged 18–20. Applying labeling theory, the research examines whether students view underage drinking as deviant and how enforcement influences these perceptions. Findings indicate that while underage drinking is illegal, it is widely normalized, leading most students to reject the deviant label for themselves and their peers. However, those who faced consequences, such as being caught with a fake ID, were more likely to accept the deviant label. Perceptions of enforcement varied, with campus police seen as the strictest enforcers, while bars and liquor stores were viewed as more lenient. The study highlights the challenges in deterring underage drinking when it lacks social stigma. It suggests that harm-reduction strategies and more consistent law enforcement may be more effective than punitive approaches.

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## **Navigating the Intricacies of Family and Identity Through Memoir**

Joy Grillo

*Faculty Mentor:* Susan DeRosa (English)

Familial relationships are complicated and difficult to navigate, especially when unconventional and complex family dynamics come into play. This spring semester, I have written a segmented memoir about family; through episodic scenes, the narrator details her relationships—and their ever-changing natures—with her parents and two brothers. This segmented form captures different moments in time, and focuses on each of the five family members, while illustrating the messiness of family and how tangled the web may be when our stories and memories overlap or conflict. At CREATE, I plan to read selections from my memoir. The working title of my project is "Five."

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## **Commuter Parking at Eastern**

Ryan Hayes, Aidan Merrill, and Martin Tlahuel

*Faculty Mentor:* Niki Kunene (Accounting and Business Information Systems)

Us students were hearing regular complaints about parking problems for commuters. There are few parking spaces designated for commuters which can cause students to be late to class and a buildup of traffic. This is evident at the parking lot near the library, where the parking typically fills up by 8:00 am and has a line of cars throughout the day waiting for an available spot. From our research, some of these students will wait in their car for over half an hour before moving on to find parking across campus in one of the parking garages. Although parking garages also have designated parking on the second floor, most days you are considered lucky if there is a spot available past 9:00 am. Commuters are able to park on the upper floors of the parking garages too, but the extra time it takes to find that spot can be the difference of missing the introduction to a class lecture or even getting marked absent in a class for being 5 minutes late. Creating a commuter parking lot where Winthrop Hall lot is located would alleviate these problems and assuage the dominant source of dissatisfaction for commuter students.

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## **Sheep for Stone: The Ascent of the Adult Board Game Market and Gaming Community**

Nathaniel Hayes

*Faculty Mentor:* Thomas Balcerski (History)

Since the early 19th century, American board games have been a staple pastime of leisure and entertainment in American households in spite of shifts in culture and technology. After World War Two, American prosperity expanded leisure time for adults, which created a swiftly growing adult market. War games like Gettysburg (1958) and D&D (1974) turned gaming into a niche, organized hobby for adults by fostering active communities of players. Later games like Trivial Pursuit (1981) created the social party game, marketing nostalgia to adults even with the surge of the video game industry. Catan (1995) popularized the eurogame in America and reflected the desire for social connectivity in a world that was becoming increasingly isolated. The history and progression of adult board gaming in America shows the progression of adult leisure time and the need for social interaction.

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## **Cultural Appropriation: Black Beauty and Culture in Social Media Influencing**

Tiffany Henry

*Faculty Mentor:* Karl Stocker (Political Science, Philosophy, Geography)

Cultural appropriation exists within this paradigm, blending the allure of cultural aesthetics with the exploitation of historical and racial narratives. While some explicitly mock black culture, a more insidious form of appropriation repackages its aesthetics into a commodified, palatable trend. This phenomenon operates under the guise of appreciation and inclusivity, allowing participants to engage in black cultural expression without enduring its historical struggles. Two archetypes emerge within this subculture: those who capitalize off black aesthetics for virality only to condemn later and those who immerse themselves entirely, erasing the culture's origins. Both exploit the fusion of beauty and controversy, weaponizing privilege to maintain influence. This cycle underscores a broader issue—true inclusivity cannot exist when racial histories are selectively acknowledged for aesthetic appeal while their deeper implications remain ignored.

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## **Building a Digital Portfolio: Website Development and Social Media Integration**

Teonjai Jackson-Beaufort

*Faculty Mentor:* Gregory Kane (Business Administration)

This independent study marks the beginning of a comprehensive portfolio that integrates website development with social media strategy to gain hands-on experience and demonstrate professional expertise. By redesigning an outdated website, I leveraged AI-driven tools alongside my content creation and marketing skills to enhance navigation, modernize design, and optimize user engagement. This project not only refined my technical abilities but also deepened my understanding of AI's evolving role in digital marketing. Serving as both a learning experience and a showcase of my skills, this study highlights the intersection of creativity, technology, and strategic online presence. In this presentation, I will share my process, key challenges, and insights on how these skills can be applied in professional digital marketing and website development.

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### **The Revitalization of Mansfield Orthodontic's Digital Presence**

Teonjai Jackson-Beaufort, Hannah Dean, Alondra Abad, Mercedes Barrows, Sofia Cavalier  
*Faculty Mentor:* Mihyun Kang (Business Administration)

Mansfield Orthodontics, a premier practice in Mansfield Center, CT, offers Invisalign, braces, and advanced 3D scanning technology. Despite its strong reputation, it faces challenges in attracting new patients and maintaining engagement. The key opportunity lies in strengthening its social media presence on Instagram, Facebook, and Google to connect with target audiences—parents, teens, and adults seeking discreet orthodontic care. Eastern Edge Media aims to boost brand awareness, patient engagement, and appointment conversions through a strategic social media campaign. Running from April 1st to April 21st, the campaign will feature five posts on Instagram and Facebook, delivering engaging and educational content, patient transformations, and user-generated testimonials. This approach fosters trust, credibility, and a personal connection with potential patients. By leveraging social media and Google, we seek to modernize the orthodontic experience and enhance online accessibility. This strategy aligns with our client's goal of expanding her social media presence and attracting more patients.

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### **Understanding the Surrealist Works of Serge Geffard: Hidden Works Coming to Light**

Lena Jones

*Faculty Mentors:* Maeve Doyle and Julia Wintner (Art & Art History)

My oral presentation explores my research and documentation of the intriguing surrealist oil paintings of Haitian artist Serge Geffard in the Eastern Permanent Art Collection. I will provide a detailed account of the development of my curated exhibition, which uncovers the artist's identity and narrative in the absence of any online presence. The Arc en Ciel was where Geffard first discovered Spanish surrealist artist Salvador Dali, and I will argue how Geffard's works are greatly inspired by the renowned painter. Geffard's works are enthralling to the eye and consist of rich themes that represent Haitian culture and the republic's environmental distress. It is important to showcase my discovery, as it is important for Eastern's community to know what art and culture is held in the permanent art collection. I would like to invite my audience to this upcoming exhibition, which showcases Geffard's eerie, otherworldly works that are worth viewing, as the art deserves to be showcased and viewed. It is important for students and faculty to hear my words, as they are meaningful to the underrepresented artist and serve as a source of education and history amongst our community and collection.

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### **Shaping my Early Childhood Philosophy through a Reggio Emilia Approach**

Sydney Lakowsky

*Faculty Mentor:* Sudha Swaminathan (Education)

The purpose of this oral presentation is to convey the values and application of the Reggio Emilia teaching philosophy, and how this philosophy has impacted my own experiences as an educator. The Reggio Emilia philosophy emphasizes child-led learning through investigation, and open-ended prompting, with encouragement and facilitation from the teachers & environment. Their atelier is a dedicated art space specifically designed for creating art using open-ended materials. The projects are enhanced and supported by a dedicated teacher (the "atelierista"). I will present my experience

visiting a Reggio Emilia atelier and immersing myself in their culture. My presentation will describe how educators can use some of those ideas in their own classrooms to support meaningful growth in their students in several areas of development, including literacy, motor skills, social/emotional learning, and more. My experience and education have given me a deep respect for children and their inherent desire to learn and explore their environment. I will share how this knowledge supports my future goals in making early education a profession that receives the reverence it deserves, and a more equitable and accessible system for children and families to access their full potential as learners and citizens of their communities.

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### **Eastern Laundry System Issues & Perceptions**

Kyle Laliberte, Cameron Milot, and Alexander Saranich

*Faculty Mentor:* Niki Kunene (Accounting and Business Information Systems)

Eastern's laundry service constantly has issues with the laundry machines POS systems and machine maintenance. These issues lead to an increase in time to do laundry, not enough open machines, and extra payment issues. We propose Eastern take steps to resolve these issues by working with CSC Service Works or moving to a different alternative.

### **Social Spark**

Raymond LaPointe

*Faculty Mentor:* Ashon Avent (Business Administration)

Social Spark is a social networking app designed to enhance the nightlife experience for college students and Gen Z. Addressing the common issue of finding the best social venues, Social Spark uses real-time data to display popular spots and offers venue-specific chat rooms for users to connect and plan their outings. The app features a user-friendly interface, privacy options, and subscription models that provide exclusive deals and early access to new features.

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### **Contemporary Korean Literature: A Mirror into Korean Society**

Anne Le

*Faculty Mentor:* Okon Hwang (Music)

Contemporary Korean literature refers to works written in the present era, distinct from Modern Korean literature, which encompasses the early 20th century. As Korean society undergoes cultural, social, and political transformations, its literature evolves accordingly, addressing themes such as identity, globalization, shifting societal norms, feminism, mental health, and generational divides. These works provide a critical lens through which readers can examine the complexities of contemporary Korean life. This study explores how contemporary Korean literature reflects and critiques present-day Korean society through an analysis of *The Vegetarian* by Han Kang, *Kim Ji-Young, Born 1982* by Cho Namjoo, and *Concerning My Daughter* by Hyejin Kim. These novels engage with issues of gender, identity, and systemic discrimination, offering valuable insights into Korea's shifting cultural landscape and the lived experiences of ordinary Koreans. By situating contemporary Korean literature within a broader global context, this research highlights its role in amplifying marginalized voices, challenging societal norms, and documenting Korea's ongoing social transformations. In doing so, it underscores the broader function of literature as both a reflection of and a force for change in society.

### **The 3-5-7 Rule for Approximating the Value of a Lootbox**

Tim Lee

*Faculty Mentor:* Pete Johnson (Mathematical Sciences Department)

Lootboxes are a form of gambling common in video games. The value of items in lootboxes can be approximated using the probability of obtaining the item in 1 attempt. There is at least a 95% chance it would take 3 times the expected value to obtain the item, at least a 99% chance it would take 5 times the expected value, and at least a 99.9% it would take 7 times the expected value. This can be proved using L'Hospital's Rule and the Mean Value Theorem.

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### **Insights into HIV Care: The MIPHA Legacy Project**

Orion Levy and Sarah Duffy

*Faculty Mentor:* Megan Stanton (Sociology, Anthropology, Criminology and Social Work)

Despite advances in HIV care, lack of access to health care continues to drive the epidemic. The accessibility and quality of service significantly improves when part of the treatment team includes people with HIV/AIDS, known as “the Meaningful Involvement of People Living with HIV/AIDS” (MIPHA). Our presentation will define MIPHA and present research on the challenges that clients at HIV clinics encounter. Audience members will walk with us through the journey of advancing positive change in HIV service systems. Research on MIPHA emphasizes resilience of people living with HIV in the face of stigma, shame and fear-mongering. In the midst of existential threat to HIV federal funding, MIPHA is more important than ever. Come join us to examine this empowering approach to navigating HIV.

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### **Exposing Invisible Labor in Theatre**

Jillian Martin

*Faculty Mentor:* Kristen Morgan (Communication, Film, and Theatre)

Technical theatre is an abstract concept to many people. While audience members enjoy the performance on stage, there are weeks' worth of labor that went on behind the scenes to make the show come to life. Technical theatre is all this labor—lighting, sound, set, projections, costumes—all these essential fields that make theatre special. My honors thesis research is based on exposing this invisible labor and creating conversations that put technical theatre in the forefront, therefore teaching and educating a wider audience as to what it is. I will be presenting the research and knowledge I have gained thus far regarding the work that goes into backstage labor, the values and importance of technical theatre, and the dangers of remaining ignorant to this labor field. I will also summarize and explain my further plans for this project as I continue my thesis into my senior year, which will involve continued research and networking about

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## **The Palette of Time: The Use of Color in Picture Books and How it Conveys the Past, Present, and Future**

Jillian Martin

*Faculty Mentor:* Allison Speicher (English)

My essay explores the complexities in picture books and how the illustrations found in them can be used to convey more abstract topics to children, specifically the passage of time. Oftentimes, when children's literature is analyzed and researched, favoritism is given to chapter books and novels, leaving a massive section of children's lit understudied: picture books. While designed to help toddlers and young children begin to learn about the world around them, they are a more complex area of literature because they combine and establish a relationship between both pictures and words to help tell the story. By examining the illustrations and use of color in two picture books, "Alma and How She Got Her Name" by Juana Martinez-Neal and "Because" by Mo Willems, I explain how the use of color throughout the spreads signify the past, present, and future, therefore teaching children about the passage of time and the concept of impact. With the help of scholarly sources, I analyze how the use of color can serve as a powerful tool for teaching children about those who came before them and how they can influence others' lives going forward.

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## **The Transformation of East Brook Fitness's Social Media Presence**

Kathleen McCarthy, Chloe Lacouture, Elizabeth Cameron, Madison Gartsu

*Faculty Mentor:* Mihyun Kang (Business Administration)

East Bridge Marketing is partnering with East Brook Fitness, a local gym located in the East Brook Mall at 95 Storrs Road, Willimantic, Connecticut. East Brook Fitness offers a variety of fitness services, including personalized workout programs and group classes, with a mission to foster a supportive and motivating community. However, the gym faces challenges in growing its membership base, particularly through digital marketing channels. To address these challenges, East Bridge Marketing will implement a comprehensive digital marketing strategy to increase brand visibility, engagement, and membership sales. Our approach includes a revamping of their social media presence, website experience enhancement, and creating a mockup for a mobile app. Our goal is to provide motivational and positive messaging through the use of social media to expand East Brook Fitness' primary target audience, college-aged students. In order to reach this audience, we will post appealing and engaging content to increase East Brook Fitness's exposure to the college community. Through our social media campaign running from March 1st, 2025 - May 1st, 2025, we hope to increase membership sales, enhance digital presence and brand awareness, foster a stronger community connection, improve customer retention, and differentiate East Brook Fitness from competitors.

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## **Study of Complexity of Play, Social Participation, and Play Roles in Preschoolers' Pretend Play**

Meghan McAuliffe

*Faculty Mentor:* Sudha Swaminathan (Education)

The purpose of this study was to examine the impact of preschoolers' gender, cultural background, and bilingualism on their Play Roles, Complexity of Play, and levels of Social Participation during

pretend play. This study included sixteen preschoolers from two classrooms in a lab school. Each child's pretend play in the dramatic play and blocks centers of their classrooms was recorded for twenty minutes. Each minute of play was coded for complexity levels, Play Roles, as well as the levels of Social Participation. Impact was determined by running an independent sample t-test for the outcome variables. Results found that girls demonstrated higher Interactions and Theme, within their Complexity of Play. Children's play in the block center yielded higher peer Interactions, and Object Use. All four categories in Complexity of Play were positively correlated with higher Social Participation levels. This study yields valuable implications for early childhood educators and also provides supportive linkages for continued research in the early childhood play community. Educators can use the findings that girls play at more complex levels in regard to interactions and themes to plan strategic grouping to encourage complex play by boys as well. Future studies can investigate larger populations of children, as well multiple preschools in differing communities.

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### **Reading Trauma: The Child Narrator Speaks the Unspeakable**

Olivia Melillo

*Faculty Mentor:* Allison Speicher (English)

Contemporary literature continuously breaks the silence surrounding trauma, reflecting and contributing the #MeToo movement. What literary strategies do authors use to depict the psychological effects of trauma to help readers understand survivors' experiences? In order to address this broad question, I offer a case study focusing on one contemporary piece of literature, *Room* by Emma Donoghue (2010). This novel presents two different types of trauma via multiple literary strategies, especially the use of an "unreliable" child-narrator and a focus on the long-term effects of traumatic experiences. By putting this novel in conversation with contemporary theories of trauma including the emotional processing theory, dual representation theory, and cognitive behavior theory I evaluate the extent to which the author realistically portrays the experiences of survivors. According to cognitive psychology professor Keith Oatley, "Reading novels engages us to become better at actually understanding other people. Words on a page can introduce you to what it is like to lose a child, be swept up in a war, be born into poverty" or in this case be a sexual assault survivor. I argue that responsibly written fiction, like *Room*, can therefore play a crucial role in building empathy for trauma survivors by helping people understand the choices survivors make.

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### **The Beginning of Costume Design in Film**

Camila Nobre

*Faculty Mentor:* Anya Sokolovskaya (Communication, Film and Theatre)

This research project explores the conception of costume design in film and how it begins being used as a storytelling device. Despite its large presence and importance since the beginning of the industry, it remains one of the most overlooked parts of filmmaking.

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### **Video Guides of the J. Eugene Smith Library**

Camila Nobre and Robert Barrow

*Faculty Mentor:* Brian Day (Communication, Film and Theatre)

Led by Joel Jenkins, the tour video serves as an introduction to the functions of the J. Eugene Smith Library. The goal of this video is to not only to demonstrate everything the library has to offer, but to also encourage students to use its resources. Joel continues his tomato research into the second video installment where he explains how to navigate the library's online catalog and physically locate books in the building.

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### **Ego on the Wall, Who's the "Goodest" of Them All: An Analysis of Imagery in the Brothers Grimm's and Anne Sexton's "Snow White" Through a Mulveian and Lacanian Lens**

Madeleine Orwick

*Faculty Mentor:* Allison Speicher (English)

While children's literature can serve as a direct reflection of the culture surrounding a given text, it is often written without the expectation of a critical or reflective perception. Oftentimes, only its ability to shape the identities of children is considered or examined. Historical children's texts can be reinterpreted more critically through contemporary theoretical frameworks to uncover layers of additional meaning. This paper addresses this gap in scholarship by analyzing the representation of the mirror in two versions of "Snow White," one published by the Brothers Grimm in 1812 and one by Anne Sexton in 1971. Through a comparative analysis of these texts, which incorporates Laura Mulvey's contemporary film theory of the male gaze, this paper will go on to interrogate the characters and imagery in both texts. It will evaluate the ways in which both versions reflect cultural attitudes surrounding gender that were present long before Mulvey articulated them, whether critically or passively presented. By holding up a modern mirror to the characters of both versions and to the symbolic visual elements of the text, Mulvey's psychoanalytic and feminist theories will act as a framework for this analysis, highlighting both authors' obedience to the systems Mulvey critiques, whether ironically or uncritically.

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### **Examining the Effects of Microgravity on Cellular Senescence Using a Zebrafish Model**

Marissa Paquette

*Faculty Mentor:* Derek Laux (Biology Department)

During space travel, astronauts are exposed to a variety of environmental hazards including space radiation and microgravity. These hazards can stimulate molecular and cellular changes that may lead to long-term health problems. Scientists have observed a pattern of age-related diseases, such as cancer and heart disease, emerging in astronauts upon their return to Earth. The mechanisms leading to these health problems remain unclear. One explanation is that microgravity may lead to cellular senescence, the irreversible arrest from the cell cycle. This study investigates the effects of microgravity on development and cellular senescence using zebrafish as a model organism. Here, we exposed zebrafish to conditions of microgravity using the NASA rotary cell culture system. Zebrafish embryos exposed to microgravity appear normal but display increased expression of senescence-associated markers and altered gene expression. Furthermore, microgravity impacts

embryo behavior, suggesting senescent-related muscle decline. In the future, we aim to uncover the mechanisms behind microgravity-induced cellular senescence and identify potential interventions or therapies to counteract these effects. As mission durations extend, uncovering ways of improving astronaut health will be beneficial.

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### **Early Science Development in Toddlers**

Ella Pitman

*Faculty Mentor:* Sudha Swaminathan (Education)

Science in early childhood education is driven by young children's natural curiosity and their ability to explore the world through hands-on experiences. While research has examined science in preschool classrooms, fewer studies have focused on how toddlers engage in scientific behaviors. This study observed six children, aged 18 to 36 months, as they engaged in various activities throughout the classroom. Recorded observations were analyzed using the cognition and science domains of the Connecticut Early Learning and Development Standards (CT ELDS) to identify behaviors linked to early scientific inquiry. Toddlers exhibited several learning progressions including curiosity and initiative, cause and effect, problem-solving, and cognitive flexibility. Additionally, two children were tracked for the duration of the study to examine the progression of their scientific thinking over time. Findings highlighted the importance of hands-on experiences, physical demonstrations, modeling scientific thinking, an open and accessible environment, and a balance of both structured and unstructured activities. The study provides valuable insights for educators looking to support the development of early scientific inquiry in toddlers through intentional exploration and play.

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### **Study of Programming Behaviors by Preschoolers and its Impact on their Math Abilities**

Ella Pitman

*Faculty Mentor:* Sudha Swaminathan (Education)

Tangible robots such as the Beebot have opened up programming for preschoolers. Recent studies have explored the value of programming for children's overall development and found positive results. However, few studies have identified preschoolers' programming behaviors or studied their impact on specific content development, such as Math. In this study, eleven preschoolers of mixed-age and gender worked in small groups, on four sets of intentionally planned programming sessions with a Beebot. All sessions were video-recorded and analyzed for evidence of programming behaviors. Children's Math's abilities were measured, before and after the programming sessions using the Tools for Early Assessment in Math. Findings revealed that preschoolers demonstrated several programming behaviors including planning and explaining the programming. Of these behaviors, modularity (breaking a task into smaller components) and representation (expressing planned programming commands with gestures) both significantly impacted the preschoolers' post-Math scores. Additionally, planning (deciding on a path) was positively correlated with behaviors associated with recognition of problem (as in identifying an error in their programming), subsequent solving of problem (or debugging), and explaining coding. None of these findings were impacted by age or gender. These results offer insights into young children's development and care.

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## **The Effect of Formatting on Webpage Information Retrieval Using Generative AI**

Sencere Rabel

*Faculty Mentor:* Dancik (Computer Science)

Generative AI has become an indispensable tool for automated information retrieval, as seen by its use in popular search engines like Google and the growing popularity of AI tools like ChatGPT. Generative AI's are a type of AI capable of creating new content, particularly text, by learning patterns from existing datasets. To evaluate the effectiveness of AI in information retrieval, the "needle in the haystack" test is used. This method assesses an AI's ability to extract important data ("the needle") from a large volume of unimportant data ("the haystack"). The methodology used involves selecting a webpage, which will be a financial earnings report, containing a target piece of information ("the needle") and creating three variations of that webpage, each with the "needle" formatted differently (e.g., plain text, bold, italics, underlined). A plain text version of the web page will also be evaluated. By analyzing the AI's performance in extracting the "needle" from each variation the impact of formatting on scanning accuracy will be discussed.

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## **Evolving Nuance and Connotation: Leitmotivic Development in Satie's Rosicrucian Era**

Aidan Reiss

*Faculty Mentor:* Tim Cochran (Music)

In March 1891, French avant-garde composer Erik Satie completed the experimentally simplistic incidental music for *Les fils des étoiles*, or "The Son of the Stars," an occultist drama commissioned for the Rosicrucian order of Christian ideologue Joseph Péladan. While not exceptionally successful among artistic circles of the time, this enigmatic work has fascinated scholars for its implications of Wagnerism, quartal harmony, and foundations of 'impressionism' in its construction: but rarely for its significance concerning the remainder of Satie's oeuvre. This paper posits the influence of Satie's compositional techniques in *Les fils des étoiles* on his religious compositions, characterizing their role in shaping his anarchic personal identity. Expanding on the research of scholars Allan Gillmor, Patrick Gowers, and Ornella Volta, I focus on an overlooked leitmotif appearing not only in *Les fils des étoiles*, but in subsequent theocentric compositions, including *Uspud* (1892), *Danses gothiques* (1893), and *Messe des pauvres* (1895). Auditing *Uspud* and *Messe des pauvres* specifically, I interpret how the motif's inclusion within their unique framing of Christianity reflects Satie's evolving religious convictions. Ultimately, this research aims to establish the motif's role in Satie's negotiation of Rosicrucianism, Catholicism, and esotericism, highlighting his complex worldview amidst the Parisian fin-de-siècle pessimistic compulsion.

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## **Unchained: Ticketmaster's Influence on Young Consumer Choice**

Zachary Robinson

*Faculty Mentor:* Warren Osterndorf (Communication, Film and Theatre)

College students are often characterized by limited financial resources, yet they are also known for actively seeking fun, social experiences. Live entertainment scratches this itch for many, particularly younger generations. In 2024 alone, Ticketmaster sold approximately 637 million tickets globally—spanning thirty-five countries. Eager students enter this popular site and, upon searching, find that live event attendance comes at a surprising cost. Ticketmaster's harsh policies have alienated

countless consumers by burdening their wallets. This is due to the intersection of limited resources with issues like fee transparency and seating availability. Ticketmaster's online structure reveals how easily consumer purchasing decisions can be influenced. The college student group, ranging from ages 18 to 24, is especially vulnerable to online miscommunication and unclear pricing models. With limited disposable income, these students face challenges that can lead to overspending or opting out entirely. This study explores how navigating a ticketing platform like Ticketmaster requires digital awareness, particularly for young users. It aims to highlight how interface design and pricing strategies can negatively impact consumers with economic limitations.

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### **Winning the Women: Mamie Eisenhower as America's Friend**

Rebeckah Rubin

*Faculty Mentor:* Thomas Balcerski (History)

Following decades of struggle during the Great Depression and World War II, Americans overwhelmingly longed for one thing: stability. For many women, stability came in the form of traditional values and gender roles. While Dwight D. Eisenhower's status as a war hero garnered the respect of voters, it was his wife, Mamie Eisenhower, who embodied the qualities that resonated with many postwar women. More than simply a military wife and First Lady, Mamie was a symbol of the stability women craved. Whether it was her love for hosting, her genuine friendliness, her relatability as a devoted wife, or her fashion sense, Mamie captivated and charmed the public. As women began voting at rates equal to men, it became essential for the Eisenhower campaign to win their support. Recognizing the power the female vote would carry in the 1952 and 1956 elections, the Eisenhower team utilized rhetoric specifically geared toward women. Ultimately, one of the most powerful campaign tools was Mamie herself. Her charm, fashionability, and embodiment of traditional values allowed for a deeper connection with female voters. Mamie was not only a key figure behind the political success of her husband Dwight, but also a larger representation of the postwar period, reinforcing the values important to many American women.

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### **Hannibal and Elephants: Was he a Genius or Just Thought to be**

Daniel Silvester

*Faculty Mentor:* Scott Moore (History)

The famous Cathaginian leader Hannibal is remembered in popular consciousness as a brilliant general who used elephants in the Second Punic War against the Roman Republic. This narrative has persisted due to way famous historians have written about the war, especially Roman authors like Polybius (208-125BC). Considering this legacy, it is important to scrutinize the claims and whether the narrative surrounding them is an accurate depiction. The complication of this historiography is based on narratives that may not be true regarding our historical knowledge of the topic. What is found in these sources is a non-consensus opinion on how important elephants were for Hannibal in the Second Punic War, putting the belief of his brilliant use of them in the war under scrutiny. As demonstrated with this topic, it is essential that any general beliefs about a topic should be scrutinized and changed if the claim is no longer valid.

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### **A Comparative Study on how Board Games Affect Monolingual and Bilingual Preschoolers' Math Abilities**

Ryan Toomey

*Faculty Mentor:* Sudha Swaminathan (Education)

The purpose of the current study was to examine the impact of board games on preschoolers' math abilities and to determine if and how this impact is affected by monolingualism. The participants of the current study were sixteen preschoolers of ages three, four and five. Eight of the preschoolers were monolingual, and eight were bilingual. The study followed a pre-assessment, intervention, post-assessment methodology. The assessments were conducted using TEAM, an early math assessment tool, and the intervention stage included three 15-minute sessions of board game play with Chutes and Ladders. Results indicate that playing the board games did significantly increase the math abilities of the preschool aged children. It was also found that while there was no significant difference between the monolingual and bilingual groups, more math growth was seen within the bilingual population. Additionally, the board games presented opportunities for preschoolers to practice math behaviors, such as Counting and Cardinality, and these behaviors were positively correlated to their post-math proficiency. Implications from this study suggest that playing board games may be an effective tool to assist all preschooler's math abilities, both in the classroom and at home. Further research with a larger sample size is warranted

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### **From Roe to Dobbs: The Evolution of Supreme Court Decisions on Abortion Rights**

Jennifer Tripp

*Faculty Mentor:* Courtney Broschious (Political Science, Philosophy, Geography)

The United States Supreme Court plays a critical role in shaping American society through its landmark decisions, particularly in controversial areas like abortion rights. This research explores the factors that led to major shifts in Supreme Court decision-making regarding abortion. This study aims to bridge the gap between political science and legal scholarship to examine how these two fields can impact our understanding of the Court's decisions. Through a qualitative case study of three pivotal cases—Roe v. Wade (1973), Planned Parenthood v. Casey (1992), and Dobbs v. Jackson (2022)—the research analyzes the effect of variables such as media coverage, political polarization, public opinion, court composition, and interest group influence. The goal is to develop hypotheses about the factors that shape Supreme Court decisions on abortion, which can later be applied to other contentious political issues in American governance.

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### **Unhidden: Digital Plat**

Gabriela Varela Santana and Xiomara Martinez

*Faculty Mentor:* Sara Carroll (Health Sciences and Nursing)

The Unhidden Project is a student-led initiative that seeks to uplift and empower undocumented and underdocumented students by sharing their stories, challenges, and resilience through creative expression and community dialogue. Too often, these voices are silenced or overlooked. Our project aims to change that by creating a safe platform where personal narratives are celebrated and visibility becomes a form of resistance. Through storytelling, visual art, digital media, and live presentations,

Unhidden reveals the complexity of the undocumented experience, breaking away from stereotypes and shining light on the lived realities of students navigating systems that often exclude them. Our goal is to educate the broader campus community, foster allyship, and inspire policy changes that support equity and inclusion. This presentation will highlight the process of building Unhidden—from conception to community impact—while showcasing student contributions and reflections. We invite attendees to engage, reflect, and unlearn, understanding that visibility is power and that being "unhidden" is both a personal and collective act of courage.

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### **Not Your Token Love Story: Race and Romance in Contemporary Adolescent Literature**

Laila Wilson

*Faculty Mentor:* Allison Speicher (English)

“What might it take for minority children and teens to dream themselves into existence? What kinds of books might suffice?”(Gruner 85). There is a significant lack of diverse YA romance novels, and the few we do have are full of unrealistic or offensive representations. Every year the Cooperative Children's Book Center receives all of the children's and young adult books published that year. Of the 3,491 books in 2023, less than half of the books they received that year had subjects that were BIPOC, and only 7% of the books had LGBTQ subjects. In order to learn more about this topic, I selected eleven YA books, dating from 2015 to present, that include both diverse characters and romance plots, including Everything Everything, The Hate U Give, and Last Night at the Telegraph Club. Throughout the texts I read, I found there to be many inaccurate and unrealistic representations of diverse characters, including issues like stereotyping, fetishization, exoticism, and over-sexualizing of characters, especially young women. However, there appears to be an increase in hope with many of the newer diverse YA novels coming out, like American Betiya or many of the books published by Joy Revolution. My research has led me to further support the idea that more books need to be created to accurately depict culturally and sexually diverse characters in romantic settings.

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### **Socio-emotional Behaviors of Preschoolers During Programming with Beebots.**

Didismay Yedra Mena

*Faculty Mentor:* Sudha Swaminathan (Education)

Studies on programming by young children using tangible robotics have focused on their computational skills mainly, with a few recent studies suggesting that children may develop socio-emotional competencies also. Following up on an earlier study that studied the impact of programming with Beebots on preschoolers' math abilities, we examined the socio-emotional behaviors of 11 preschoolers during their programming experiences. The children worked in groups of two or three on four rounds of planned programming sessions with a Beebot. Findings revealed that these preschoolers demonstrated seven specific socio-emotional behaviors of varying frequency. Predominantly seen were behaviors related to expression of emotions, responding to emotions, self-concept, and trust. Collaboration was positively correlated to regulation and responding to others' emotions. While no difference was seen between age groups, gender, economic need, group differences was evident and may be studied in future research.

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**Use of Counterspaces on BIPOC Students' Mental Health: Examining Belongingness, Affect, and Microaggression Frequency at a PWI**

Didismay Yedra Mena

*Faculty Mentor:* Peter Bachiochi (Psychological Science)

Black, Indigenous, and People of Color (BIPOC) college students often navigate unique challenges to their well-being at Primarily White Institutions (PWIs). While research has examined broader mental health outcomes, the impact of counterspaces- spaces that affirm cultural identity and provide refuge from marginalization- continues to be under researched. The current study examined the relationship between use of counterspaces and psychological well-being among BIPOC students (N = 40) of various races and ethnicities at a PWI. Participants self-reported their feelings of campus belongingness, positive and negative affect, frequency of racial and ethnic discrimination, as well as the correlations between those variables and awareness and use of counterspaces. The data for the study were gathered using Sense of Social Fit Scale (SSF: Walton & Cohen, 2007), Positive and Negative Affect Schedule Scale (PANAS: Watson, D. et al, 1988), and Daily Life Experiences Frequency Scale (DLE-F: Harrell, 1997). Using Pearson correlations and multiple regression analyses, it was hypothesized that: 1) macro and microaggressions, measured by daily discriminatory life experiences, will predict lower rates of belongingness and higher rates of negative affect in students, 2) use of counterspaces will predict higher rates of belongingness and higher rates of positive affect, and 3) use of counterspaces will moderate the influence of microaggressions on negative affect and levels of belongingness. The findings, which supported the first hypothesis but not the second or third, emphasize the need for evidence-based support strategies when accommodating BIPOC students in predominantly White academic environments.

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## Panels, Performances, & Screenings

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### Eastern Creative Writers Read Their Work

Dana Arroyo Infante, Taryn Beisel, Havi Brouillard, Randy Heredia, Jenna Lawrence, Emily Lung, Hugh Mackenzie, Skylar Mink, Maddy Mueller, Payton Pelkey, Amarylisse Rodriguez, Hayden Smith, Muriel Stankeviciute, Addison Twohill, Rexford Welch

*Faculty Mentor:* Daniel Donaghy (English)

Students in Dr. Donaghy's Advanced Poetry Writing Workshop share selections of the poems that they have written during their time at Eastern.

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### A Celebration of Eastern Novelists

Shermine Bousquet, Ian Harrington, Olivia Melillo, Colin Morrison, Reese Siemiakaska, Hayden Smith

*Faculty Mentor:* Christopher Torockio (English)

This group presentation will feature six talented Eastern fiction writers sharing the original full-length novels they've been working on over the past year. The panel consists of published authors; students headed to graduate school to study creative writing; students who have studied, or will be studying, fiction writing abroad in Florence, Italy; and will feature a broad range of styles, themes, subjects, and voices that reveal all the various complexities of the human condition.

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### CREATE English panel: The Lord of the Rings

*Moderator:* Kenneth McNeil (English)

#### **Shannon Carbonell: Tolkien's *The Lord of the Rings* as a European Mythos**

Literature is often based on or inspired by stories from the past. Specifically, contemporary stories have been drawn from myths, as they are retold and translated across languages and cultures. The world of Middle-Earth as seen in Tolkien's the *Lord of the Rings* trilogy, tells the tale of a group of adventurers, of all different species and backgrounds, who travel together to destroy an artifact that could lead to the end of the world as they know it. Tolkien created a world full of history and cultures when writing the LOTR that it could be called its own myth. Thus, Tolkien's LOTR is his version of a European mythos, as he takes inspiration from the Anglo-Saxon, Catholic, and Greco-Roman mythoi to formulate a fantastical quest journey set in a Euro-influenced world of his creation.

#### **Leah Davis: Norse Mythology in *The Hobbit***

While creating *The Hobbit* Tolkien drew great inspiration from Norse mythology and its figures. The names of the dwarves who aid Bilbo in his quest, for example, can all be found in the *Völuspá*, a poem from 1300 that details the beginning, end, and rebirth of the world from the lens of Norse Mythology. In addition to this, great parallels can be drawn between the heroes of the respective

stories and the monsters. Smaug, for example, the dragon in *The Hobbit*, parallels the dragon present in the tale of Sigurd, and Fafnir in the Anglo-Saxon poem *Beowulf*. All three consist of tales dealing with stolen treasures, greed, glory, and mortality. My paper will discuss the many elements of *The Hobbit* present in a wide range of tales from Norse Mythology, to demonstrate how Tolkien drew great inspiration from them for his own work.

### **Ian Harrington: “I am, unfortunately, the Hero of Ages”: A comparison of *The Lord of the Rings* and Mistborn Era 1**

This paper examines both J.R.R. Tolkien’s *The Lord of the Rings* and Brandon Sanderson’s initial *Mistborn* trilogy, officially referred to as Era One, and compares them to explore how the genre of fantasy literature evolved from the 1950s to the 2000s and further to the present day. *The Lord of the Rings* popularized the fantasy genre and established many of the tropes, themes, and methods of worldbuilding still used by writers of fantasy literature today. Tolkien’s idea of the Secondary World, where a story is told within a fictional world wholly separate from our own, is used by many fantasy writers, including Sanderson, though Sanderson expands on this concept through his extensive magic systems. Both stories feature typical character archetypes and tropes. but comparing the two works reveals how these character tropes first began with *Lord of the Rings* and how they have grown more complex in modern fantasy works such as *Mistborn*. The paper also looks at how the role of women in fantasy has evolved since *Lord of the Rings* and how Vin is a step in the right direction for female leads in fantasy literature.

### **Reese Siemiakaska: The Languages of Middle-Earth: Translating Elvish**

J. R. R. Tolkien is most well-known for the surge of fantasy in both literature and film. *The Lord of the Rings* is the catalyst in both forms of media for the genre to ascend beyond being only for children, showing the brutalities of war and creating a complete history for his characters and races. Tolkien also had a fascination with language, making his own as early as 13 years old. Eventually, he created a world for his languages. I decided to tackle one of the languages Tolkien created for Middle-Earth to further understand the work he put into his worlds. Language was clearly an aspect that was important to Tolkien, but the average reader would skim it over. I began by simply doing a morphological analysis, but that had been done by many before. I could translate one of the many songs or poems from Sindarin into English, but that too, has been done. Instead, I chose to take a poem that was, in universe, already translated from Sindarin to Common and translate it back. Thus, I had to learn Sindarin. I needed to understand sentence structure, conjugations, parts of speech, and I did this all with the limited knowledge the community had amassed from their own studies over the years. Utilizing what they gathered, I was able to translate the entire “Song of Beren and Lúthien” back into Sindarin. The paper and presentation are the process and result.

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### **Metropolis Re-Imagined**

Josh Aziz, Jaiden Baldwin, Katelin Briere, James Crotty, Jacob Davis, MaryKate Frassinelli, Josh Ganotti, Daniel Gargano, Sierra Ings, Aidan Reiss, Quinn Sawyer, Rae Shenker, Evan Sinisterra, Jordyn Szretter, Luis Vazquez, Jacob Wurst  
*Faculty Mentor:* Anthony Cornicello (Music)

The classic silent movie "Metropolis" is presented here with an original soundtrack composed by students in Multimedia Composition (MUS 372). Each student has written an electronic score for a segment of the film, bringing their own artistic perspective to the scene.

### **Motion Capture Animation in Real Time**

Zachery Beaumont

*Faculty Mentor:* Kristen Morgan (Communication, Film, and Theatre)

Capturing actors' movement is a key component of visual storytelling in live performance, film/television, and gaming. This presentation will be a demonstration of the Optitrack motion capture system in FAIC 219. The demo will show how the system, in conjunction with Autodesk MotionBuilder, can livestream actors' movement with animated avatars in real time. The presentation is a result of Independent Study research completed over the Spring 2025 semester.

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### **"3 O'Clock Jazz Band" Improvisation and Communication**

Dylan Schore and Jacob Wurst

*Faculty Mentor:* Frederick (Rick) O'Neal (Music)

Two Student-Directors lead an 8-10 member jazz combo in a live performance. These two students chose the material, led band rehearsals, educated players on jazz standards, song structure, improvisation and on-stage communication.

Attending Players:

Jacob Wurst - Piano (student co-leader)

Dylan Schore -Baritone Sax (student co-leader)

Ian Harrington -Alto Sax/Singer

Carter Bouchard -Alto Sax

Alex Thornton -Alto Sax/Singer (UCONN graduate student)

Josh Aziz - Tenor Sax

Jason Skoog - Guitar

Caio DeSousa - Guitar

Sal Thongchampasy - Guitar

Rick O'Neal - Bass (Faculty Director)

Noel Teter - Drums (Class '25)

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### **Dramatic Storytelling in Film**

*Faculty Mentor:* Brian Day (Communication, Film, and Theatre)

Students in an advanced film production class were tasked with creating dramatic film projects. A student did research into the history of costumes in film.

1. *Zoomer's Trailer* – Student Production Team is Kevin Gabriel, Taylor Ribeiro, Dominic Robucci, and Cameron Witten
2. Short Dialog Film – Student Production Team is David Pierce and Zolei Burgos
3. Short Dialog Film – Kevin Gabriel and Karynn Hardy
4. Short Dialog Film – Taylor Ribeiro and Matthew Corbin
5. Short Dialog Film – Maximillian Smith and Vincent May
6. Short Dialog Film – Arianna Wanzo and Tanayah Longs
7. Student will present research about the history of costumes in film.

### **Producing for Clients and Costumes in Film**

Students create professional content for campus departments:

1. Office of Equity and Diversity Projects – Elliott Kalisher, Matthew Corbin, Taylor Ribeiro
  2. Library Projects – Camila Nobre and Robert Barrow
  3. Sustainability Projects – Alexandra Biondo and Dominic Robucci
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### **Interactive Installation: Live Sewing as an Act of Making Invisible Visible**

Meredith Bogue, Ryan Daly, Neo Gomez, Amritleen Kaur, Leana Benoit, Jalisa Clark, Cristal Hernandez, D'Andre Person, Melody DesPlaines, Owen Marcelus

*Faculty Mentor:* Anya Sokolovskaya (Communication, Film, & Theatre)

Today and for the foreseeable future, the making of every piece of clothing worldwide will involve sewing by human hands” (Humantouchclothing.com). Tailors, workers, sewing machine operators in various places of the world make our clothes but their labor is invisible and becomes easily ignored by consumers. Live Sewing Performance is an installation that involves an act of making clothes using paint-sewing technique. The clothes maker leaves marks on the garment while constructing it. Those marks become a visual embodiment of human labor.

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### **The Prison That Made America: Women's House of Detention, 1932-1974**

Zolei Burgos, Zoe Calhoun, Zolah Daley, Karynn Hardy, Cole Hills, Xsyanni Jackson, Almi Morales, Kylie Nigretti, Celeste Petrowsky, Lucas Poole, Nayelli Rodriguez, Paola Torres, Emma Yacono, Brandon Young

*Faculty Mentor:* Alycia Bright-Holland (Communication, Film, & Theatre)

The Communications, Film, and Theater Department & Drama Society at Eastern Connecticut State University are proud to present *The Prison That Made America: Women's House of Detention* (1932-1974), a new play by Reginald Flood, directed and developed by Alycia Bright Holland, in collaboration with CFT students from THE 474: Experimental Theatre, and designers Kristen Morgan (scenic and projection), Anya Sokolovskaya (costumes), Travis Houldcroft (sound), and graduating senior Zachery Beaumont (lighting). Step behind the walls of the historic Women's House of Detention in Greenwich Village, New York— a neighborhood where Bohemian rebellion and Queer culture flourished. This gripping play traces the roots of America's carceral institutions, exploring the journey from Women's Court to confinement. It challenges us to confront the forgotten histories that shaped our present while asking the questions: Whose bodies do we stand on today? Where did Queer vision begin? And what does it mean to have power over your own life, identity, and relationships? This drama examines the politics of difference in America through the historical lens of the Women's House of Detention, in a nation whose tendency to incarcerate difference, rather than celebrate it, has shaped our contemporary society. Through compelling storytelling, *The Prison That Made America: Women's House of Detention* (1932-1974) highlights how social movements, especially within the LGBTQ+ community, have reshaped our world, providing guidance and inspiration for the ongoing fight for justice and liberation, here and abroad. *The Prison That Made America: Women's House of Detention* (1932-1974), will be presented in the Fine Arts Instructional Center's Proscenium Theater April 24-27; April 24 at 5:30 pm, April 25 at 11:00 am, April 25 & 26 at 7:30 pm and April 27 at 4:00 pm.

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## Poster Abstracts

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### **Connecticut Wine Tourism Amidst a Changing Climate: Opportunity or Threat?**

Hailey Abate

*Faculty Mentor:* Emiliano Villanueva (Business Administration)

Connecticut's wine tourism industry is increasingly shaped by forces of climate change that bring emerging opportunities and escalating threats. As the state experiences rising temperatures, shifting precipitation patterns, and extended growing seasons, new possibilities have arisen for viticulture, including cultivating diverse grape varieties and expanding the tourism season. These developments can enhance wine quality, attract a broader visitor base, and position Connecticut as a resilient player in a changing global wine market. Simultaneously, the industry faces increasing risks, such as extreme weather events, soil degradation, pest proliferation, and tourism volatility, that challenge vineyard sustainability. This research examines the complex relationship between these opportunities and threats, analyzing how climate change influences grape cultivation, visitor behavior, and the long-term viability of the wine tourism sector. By evaluating current sustainability practices, the research assesses the industry's capacity to innovate and respond proactively. Ultimately, it considers whether Connecticut's wine sector can capitalize on climate-driven shifts while mitigating environmental and operational vulnerabilities to ensure continued growth and resilience.

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### **The Reciprocally Influencing Factors of Childhood Temperament and Parental Depression**

Brayden Alexis

*Faculty Mentor:* Caitlin Vasquez-O'Brien (Psychological Science)

Temperament refers to the individual differences that underpin one's reactivity and self regulation (Rothbart & Bates, 2006; Rothbart et al., 2000). Divided into the dimensions of positive affectivity (e.g. sociability and activity level), negative affectivity (e.g. fear and frustration), and effortful control (e.g. self-regulation and persistence); temperament is the biological basis of our personalities (Rothbart & Bates, 2006). We hypothesized that parental depression and childhood temperament would reciprocally predict each other in a three-wave, cross-lagged, model. Depressive symptoms and child's temperament were reported at three time points (N=145 family triads). Significant reciprocal interactions were found. Parent depression predicted increases in all three dimensions of temperament. Early childhood and middle childhood temperament predicted later scores of parent depression.

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## **Chronic Conditions and Socioemotional Health in College Students**

Emma Alford and Katherine Campbell

*Faculty Mentor:* Sara Carroll (Health Sciences and Nursing)

Chronic conditions affect 31% of college students. Individuals with chronic illnesses deserve equal opportunities to earn a higher education and succeed in their careers. Chronic conditions increase the risk of developing anxiety and depression. College students with recent chronic illness diagnoses had negative perceptions of their academic, physical, mental, and school participation. Objective: Explore the experience of chronic condition management and the perceived quality of life of college students. Methods: 3 Eastern Connecticut State University students volunteered for Semi-structured interviews. Participants were recruited through Snowball Sampling, Data from interviews were evaluated using a Dual approach to coding and Data triangulation. Results: 3 major themes were identified, students with chronic conditions face a spectrum of negative emotions, working closely with university professionals is essential to alleviate the burden of chronic conditions, and Students with chronic conditions often need to be more vulnerable in new relationships. Conclusion: This research confirms that managing a chronic condition affects the quality of life for college students in numerous ways, extending beyond academics to impact their relationships, socioeconomic status, and overall mental health. Therefore, nationwide there should be a standard to ensure that students with chronic conditions have the resources necessary to succeed during college.

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## **The Effect of Heat & Physical Scarification on *Gymnocladus dioicus* (Kentucky coffeetree) seeds**

Chidera Aligwara

*Faculty Mentor:* Bryan Connolly (Biology)

*Gymnocladus dioicus*, or Kentucky coffee tree is a native species to North America that is currently known to be dispersed only by water. In the past the seeds of this species were likely dispersed by megafauna e.g. woolly mammoths. It is now described as an “ecological anachronism”, meaning that it is outside of or ill-fitting for its time period. The tree is not common in the wild and locally endangered in some states. The seeds of this species are very hard and appear to have co-evolved with these now extinct large mammals, in the past they were likely eaten, and the animal’s teeth and digestive acids scarified or removed the seed coats allowing for germination. Currently to grow the seed they are filed or placed in strong acid for scarification. We hypothesized that directed heat could be a third method that could allow seed germination. Here we compared mechanical and heat-based scarification treatments to germinate the Kentucky coffee tree seeds. There were three treatment groups for the *Gymnocladus dioicus* seeds and a control group. Our treatment groups consisted of seeds burned at the chalazal end with a Bunsen burner, another treated with a culinary butane torch, and a third with a metal file. Each experimental group consisted of 20 replicates with 3 seeds each for a total of 60 seeds per treatment and 240 seeds overall. There were 3 seeds that germinated in the control group, while 26 germinated in the butane treatment group, 36 germinated in the Bunsen burner group, and 27 germinated in the file group. Trials are still underway, but it appears the directed heat method of using the culinary butane torch is effective at seed scarification allowing germination, as well as the mechanical file treatment. When the trials are concluded the data will be analyzed using an ANOVA. Filing the seed is a tedious and time-consuming process, while the directed heat methods are quicker and much less difficult. We hope these new methods allow more Kentucky coffee trees to be planted and that this will aid in their conservation.

### **Skipping Meals or Skipping Deadlines**

Shelby Anderson, Cheyenne Crumpler, and Cristina Lynch

*Faculty Mentor:* Sarah Nightingale (Sociology, Anthropology, Criminology, and Social Work)

This study seeks to explain the connection between college students' eating habits and time management, while focusing on the influence of the different academic majors and how they influence these variables. Specifically, the research focuses on students in both academic departments: Arts and Sciences and Education and Professional Studies. Data was also collected from double majors, to see if the intensity of the major course work correlates with their eating routines and time management. The hypothesis is the major of a student would have a relationship with their time management and eating habits. A survey was used to gather data from ECSU students, that asked questions about food choices, eating frequency, time management skills, and the challenges students face while balancing social, academic, and personal issues and responsibilities. Ultimately, the study seeks to bring the potential issues that students face every day to light and hopefully highlight the greater need for awareness of the struggles that usually go unspoken due to social pressures. In the end, after conducting Chi-squared analysis, the results were insignificant.

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### **A Taxonomical Analysis, Historical and Scientific Significance of Prehistoric Elasmobranch Teeth from the Miocene Era: Sharktooth Hill Bone Bed and Pyramid Hill, Kern County, California**

Jasmine Antonucci

*Faculty Mentor:* Joshua Idjadi (Biology)

For over 170 years, Miocene-age fossils have been collected from Sharktooth Hill and other localities throughout Kern County, California. These rock exposures contain the most extensive marine bone bed in the world, consisting of an over 160-square-kilometer layer of intermingled shark, ray, seal, whale, turtle and bony fish fossils, presenting a snapshot of the nearshore ocean ecosystems that existed in the North Pacific around 25 to 15 million years ago. Over half of the species found at these localities are cartilaginous fishes consisting primarily of teeth and tooth plates and representing some thirty species total of sharks, skates, and rays. The Yale Peabody Museum (YPM) houses a previously unstudied collection of such fossils from Sharktooth Hill and nearby Pyramid Hill that were in need of further curation. This project is an exercise in collection management based on the morphological comparisons of the specimens in the YPM collection with fossil taxa described in the literature. The following taxa of cartilaginous fishes have been identified in the YPM's collection from Sharktooth Hill and Pyramid Hill: *Carcharhinus leucas*, *Carcharhinus* sp., *Dasyatis rugosus*, *Galeocerdo aduncus*, *Galeorhinus* sp., *Hemipristis serra*, *Heterodontus* sp., *Isurus hastalis*, *Squalus serriculus*, *Squatina lerichei*, *Raja* sp., *Carcharhinidae*, *Myliobatoidea*, and *Chondrichthyes*.

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### **DNA Barcodes Reveal the Latitudinal Landscape of Oyster Phylogeography**

Jasmine Antonucci, Paige Hopkins, Silindile Majola, and Emily Senna

*Faculty Mentor:* Matthew Graham (Biology)

Oysters are an ancient lineage of bivalves distributed globally, which have diversified across verifying latitudes and longitudes throughout that time. The aim of this study is to determine if oyster taxa are

more genetically diverse at low latitudes, with decreasing diversity as latitudinal distributions increase, supporting the latitudinal diversity hypothesis. To do this, we assessed phylogeographic patterns among 8 oyster species spanning various latitudes using publicly available COI sequence data from GenBank. Specifically, we characterized diversity using nucleotide and haplotype diversity, and visualized phylogeographic structure using haplotype networks. Oyster species distributed throughout the tropics and subtropics were significantly more diverse than temperate species, and yielded more structured haplotype networks. Oysters, like previously studied terrestrial invertebrates, appear to also adhere to the latitudinal diversity phenomenon, extending its breadth to include marine intertidal and benthic habitats.

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### **Advancing Mars Image Classification: A Comparative Study of CNN Models with Interactive Applications**

Gabriel Arevalo

*Faculty Mentor:* Kehan Gao, Sarah Tasneem (Computer Science)

This study explores the use of Convolutional Neural Networks (CNNs) for classifying Martian geological images, comparing EfficientNet and VGGNet architectures. The models were trained and evaluated on two NASA datasets: the HiRISE orbital dataset (3,820 grayscale images across six landmark types) and the MSL surface dataset (over 6,000 images across 24 landscape categories). The study identifies the most effective CNN for Martian image classification by analyzing model accuracy, efficiency, and computational demands. To make these insights accessible, a Django-based web application was developed. Users can interact with the datasets, test the models, view classification results, and explore performance metrics. The app includes an educational game, Classifier Clash, where users attempt to classify Martian images and compare their accuracy to the AI models. This interactive feature fosters engagement and deepens understanding of AI's strengths and limitations. The project bridges AI research with public outreach, transforming complex machine learning concepts into a hands-on educational experience. It demonstrates the potential of deep learning in planetary science and offers a foundation for broader applications of CNNs in scientific image analysis. The project encourages wider exploration and adoption of AI technologies by combining research and interactivity.

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### **Genetic Characterization of *Massospora cicadina* from Illinois**

Nancy Avalos

*Faculty Mentor:* Jonathan Hulvey (Biology)

This project aims to compare *Massospora cicadina* samples collected from five locations in Illinois during the 2024 double brood emergence to those from Indiana and West Virginia, as reported in Macias et al. (2020), to elucidate their evolutionary relationships. *M. cicadina* is an obligate fungal pathogen that infects periodical cicadas, replacing their abdomen with spores and spreading through asexual conidia, while also possessing a dormant, sexually reproducing stage. Macias et al. (2020) sequenced four genetic loci to compare *Massospora* species, including isolates of *M. cicadina* from West Virginia and Indiana. We are sequencing the same four loci to compare our Illinois specimens to those from Macias et al. and assess genetic diversity within our samples. Additionally, we designed primers using sequence data from Macias et al. and the NCBI BLAST database to specifically target *M. cicadina*, improving specificity over general *Massospora* primers. Despite the limited research on

M. cicadina, this study advances understanding of its genetic diversity and reproductive strategies. Our work could provide future researchers with valuable primers for studying M. cicadina, offering a tool to further advance research on its ecology, transmission, and impact on cicada populations.

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### **Hidden in Hartford: Cold Cases and Bias**

Fallon Bailey, Emma Kopycinski, and Olivia Mullings

*Faculty Mentor:* Racheal Pesta (Sociology, Anthropology, Criminology, and Social Work)

This poster examines a selection of cold cases focused in and around Keney Park in Hartford, Connecticut. Our research centers on unsolved homicides with a specific focus on victimology, location, circumstances, and cause of death. We also explore the context surrounding each case—looking into known or potential suspects, as well as other violent offenders operating in the area during similar time periods. The investigative process drew from a range of sources including the Connecticut State Library, Ancestry databases, court dockets, and internet sleuthing, which provided deeper insight into both the cases and the historical environment in which they occurred. Beyond the cases and suspects, we will be examining the subject of cold cases from a more criminological/sociological perspective—specifically the lack of media coverage regarding these cases based on the demographics of the victims. Many of the women were people of color who had a history of substance abuse and/or sex work. These individual cases bring light to the broader systemic issue of the racism, sexism, and shaming that victims face in the media and justice system.

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### **The Ethics of Displaying Ivory in Art Museums**

Iris Bazinet

*Faculty Mentor:* Maeve Doyle (Art & Art History)

If I told you around 20,000 elephants are poached annually, who would you think to blame? Would you blame poachers, wildlife conservationists, consumer countries, or would you think to blame an art museum? Art museums with large ivory collections have been placed into a precarious position as public awareness to the illegal ivory trade continues to gain media coverage. Following the United States's strict 2016 near-total ban on the commercial trade of African Elephant ivory, and the Kenyan ivory burning of over 100 tons of tusks and carved objects, art museums have begun to feel the heat regarding their own ivory collections and started asking themselves "What should we do with our ivory objects?" My poster presentation will discuss the current ethical dilemmas and solutions to showing ivory objects in art museums and explore its direct effects on African and Asian elephants. By offering the often-overlooked agency of the elephant, asking viewers to become acquainted with elephants in terms of their own histories and futures facing poachers and habitat loss, a political and moral debate will entice audiences to join me in exploring the ethics of displaying ivory in art museums.

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## **From Affirmation to Activism: The Shifting Portrayals of African American Enslavement and its Aftermath in Picture Books from the 1990s to Today**

Hannah Bernashe

*Faculty Mentor:* Allison Speicher (English)

Picture books are overlooked as literary texts, seen as easy to read, having no deep meaning (or context), and lacking in diversity. The African American community has had negative experiences within picture books, being underrepresented or portrayed stereotypically. Acclaimed picture books centered around African Americans have, however, proliferated in recent years, and remain understudied. I argue that in picture books from the 1990s to today, there is a notable shift from affirming identities to fostering activism for a better future. Authors from the 1990s focused on affirming African American identities, celebrating their physical and personality traits and historical resilience. Authors then shifted to affirming their identities and giving them the tools they need to make a change. I examined picture books from the 1990s by authors Faith Ringgold, Tom Feelings, and Joyce Carol Thomas that evince patterns such as the motif of flying and the use of verse. I also examined picture books from 2020-present by authors Jacqueline Woodson, Carole Boston Weatherford, Tyler Merritt, and Alicia D. Williams that exemplify the same patterns as well as introducing the idea of claiming space. I argue that picture books focusing on African Americans have undergone a positive transformation from the 1990s to today, evolving from an emphasis on affirming identities to actively promoting activism for a better future. Thanks to these picture books, African American child readers are taking what they learned from the texts to become activists in the real world.

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## **Wear Your Story: Digital and Experiential Marketing Strategy for T-Shirt World**

Uzair Bhura, Nathaniel Cotton, Donovan Greenlaw, Jack Lomax, and Alexander Meade

*Faculty Mentor:* Mihyun Kang (Business Administration)

This integrated marketing campaign focuses on enhancing T-Shirt World's brand presence and consumer engagement through strategic marketing communication activities. T-Shirt World is a custom merchandise business based in Waterford, Connecticut, known for its personalized apparel, including faith-based, pop culture, and motivational designs. Although the company provides high-quality, expressive clothing at affordable prices, it currently struggles with limited social media presence, brand visibility, and audience engagement. The opportunity lies in leveraging digital platforms such as Instagram and TikTok to reach its core demographic of college students and young adults in the greater New London area and beyond. Campus Connect Marketing (CCM), a student-run agency at Eastern Connecticut State University, has partnered with T-Shirt World to execute a multi-channel Integrated Marketing Communications (IMC) campaign. Our strategy includes content creation, influencer partnerships, social media ads, and in-person events, all designed to increase brand awareness, promote sustainable practices, and drive both online and in-store traffic. With a focus on authenticity, self-expression, and community connection, this campaign will utilize slogans like "Wear Your Story" and "Threads of Expression" to communicate T-Shirt World's values. The campaign will run from March to late November, using consistent and engaging content to build customer loyalty and online interaction. The promotional mix includes digital marketing, public relations, and personal selling strategies, while the media mix centers on TikTok and Instagram for dynamic storytelling. Our goal is to position T-Shirt World as a leading

provider of personalized, quality apparel among college-aged consumers and regional shoppers, while establishing long-term brand equity through consistent digital engagement.

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### **Phylogenetic Evidence for New Aphonopelma Tarantula Species in Baja California Sur, Mexico**

Hazel Bostick and Samantha Molzon

*Faculty Mentor:* Matthew Graham (Biology)

Tarantula genus Aphonopelma contains a variety of species distributed across North and South America. While Aphonopelma is known for being incredibly diverse, there may still be some species that have yet to be described, especially in less studied biogeographically dynamic regions like the Baja California Peninsula. In this study, we built a phylogeny using new COI sequence data from Aphonopelma tarantulas in Baja California Sur, along with all available COI data previously published on GenBank (~2,000 samples). The new samples were collected from remote regions of the Baja peninsula, including Mulegé and San Ignacio, which are known for having unique endemic species of scorpions and other arachnids. We hypothesized that the samples could represent new species. The phylogenetic analysis supports this idea, showing that the samples form distinct lineages within the Aphonopelma tree of life. Future research should focus on studying the physical characteristics of these tarantulas (morphology), additional sampling, and analyzing nuclear DNA markers to confirm patterns from our COI analysis. In conclusion, our findings highlight the incredible diversity of arachnids in the Baja California Peninsula, a region that owes much of its richness to its complex and fascinating geological history.

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### **Children's Behavioral Inhibition, Overall Health, and Sleep Patterns' Impact on Academic Success**

Olivia Bourque

*Faculty Mentor:* Caitlin Vasquez-O'Brien (Psychological Science)

Separate studies link children's behavioral inhibition (developmental capacity to show caution in novel situations) to healthier sleep patterns, higher physical health, and academic success. From this, I hypothesized that children exhibiting early inhibition would have concurrent better sleep and physical health, which would collectively contribute to future academic success. We studied 145 sibling pairs longitudinally, beginning with laboratory-based tests of behavioral inhibition: one for higher planning skills and another for impulse control, both taking place at Time 1 (early childhood). Parent reports of sleep and health were also collected at Time 1, and online surveys for academic success were collected at Time 2 (middle childhood) and Time 3 (adolescence). Results indicate that early childhood health strongly influences academic success in middle childhood, but primarily family socioeconomic status predicts academic success by adolescence. High levels of behavioral inhibition were not strongly correlated to any of the three variables examined, nor were the two tests for planning and impulsivity correlated with one another. This demonstrates how predictors of academic success change considerably across child development as well as the complexity of behavioral inhibition.

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## **The Development and Application of Emotional Intelligence during Adolescence and Young Adulthood**

Anna Buchta

*Faculty Mentor:* Melanie E. Keyes (Psychological Science)

When emotional intelligence (EI) is successfully developed and applied it can lead to greater life satisfaction and mental resilience to stressors. This is especially important in adolescence as many teenagers struggle with self-esteem and understanding. This literature review assesses the social, environmental, and biological factors that are correlated with EI in adolescence and young adulthood through a family lens. Depending on how developed EI is, it can greatly impact adolescents' relation with the internet, their peers, and their mental health. Additionally, this review aims to highlight the ways families and educational facilities can better support adolescents as they apply EI to their experiences. Future research of EI should focus on its relation to stress, eating disorders in males, and its impact on victims of bullying.

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## **Developing a Plan to Implement an Effective Prehospital Blood Transfusion Program in Eastern Connecticut**

Caitlyn Cacador

*Faculty Mentor:* Paul K. Canavan (Health Sciences and Nursing)

Prehospital emergency care in Windham County Connecticut has longer emergency response and transport times compared to other regions of the state. In severe trauma cases, time is critical for patients that require blood transfusions. Statement of the Problem: The paramedics in Windham County region do not carry blood products. Objective: To identify an optimal prehospital blood transfusion standardized plan that could be implemented in Windham County. Methods: A review of literature and inquiries were performed to identify a location within Connecticut that utilizes best practices for prehospital blood transfusions. Results: St. Francis whole blood program for AMR paramedics was identified as an optimal example for prehospital blood transfusions. The benefits of prehospital blood transfusions by paramedics have been shown to be effective in reducing mortality in a variety of studies. A limitation of prehospital blood transfusions is the fiscal cost of blood warming devices, and the personnel training needed. Blood product shelf life can be improved by utilizing spray dried plasma (Velico®) reducing blood waste. Conclusion: Considering many factors, it is recommended that local paramedics use newly developed blood product technology and a best practice prehospital blood transfusion program to provide timely and high-quality care to the area.

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## **Musculoskeletal Screening Tests to Identify Women's Lacrosse Players at Risk for Hip Injury**

Katherine Campbell

*Faculty Mentor:* Paul K. Canavan (Health Sciences and Nursing)

Screening for prevention of injuries is typically not performed with female lacrosse athletes and female sports in general. Deficits in hip range of motion and hip abductor, hip adductor, hip internal and external rotation strength have been shown to be related to injury risk. Methods: Twenty-one ECSU Women's Lacrosse team members participated in the IRB approved study. Hip abduction/adduction, internal/external (IR/ER) rotation, flexion strength tests and hip

internal/external rotation, and hip flexion range of motion measurements were assessed on both lower extremities. Results: The study found that 91% of the participants demonstrated greater than 20% deficits between their abduction and adduction strength which indicates a risk factor risk for hip related injury. Three participants were identified of having decreased hip IR/ER range of motion compared to normative data. Each participant was given verbal feedback on their results and provided intervention strategies. Conclusion: Preventing hip injuries is crucial to minimize time lost from competition and maintaining team sport performance. Musculoskeletal testing and implementation of specific strengthening and flexibility exercises can help professionals implement prevention programs based upon the identified needs of the team and specific player. Further screening for female sports especially at the NCAA level should be performed.

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### **Hydnum repandum: Cultivation Optimization and Antimicrobial Efficacy**

Ethan Campbell

*Faculty Mentor:* Jonathan Hulvey (Biology)

Antibiotic resistance is a growing problem worldwide as antibiotics are overprescribed, and pharmaceutical research has slowed due to the lack of profitability. Fungi are known to produce valuable anti-microbial metabolites. Previous research has shown that the mushroom species *Hydnum repandum* (Hedgehog mushroom) may produce antimicrobial metabolites. A limiting factor for studying antimicrobial metabolites in *H. repandum* is the growth rate, which can be increased by the amending media with glucose and/or an alternative nitrogen source. *Hydnum repandum* cultures were cultivated on potato dextrose agar (PDA) amended with various sources of nitrogen from organic plant products and growth measured after 19 days. A top agar assay with various bacteria, including *Staphylococcus aureus*, was used to test for zones of inhibition resulting from antimicrobial metabolites from *H. repandum* mycelium. Current results found that spinach and soy powders added as a nitrogen source produced the greatest increase in growth compared to the PDA control, while beet powder resulted in the slowest growth. When zones of inhibition were measured (against *S. aureus* in a top agar assay), beet powder amended PDA produced the largest zones while spinach and soy produced negligible zones. These findings offer new avenues for antibiotic research in *H. repandum*.

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### **Investigating the Antibiotic Potential of Hedgehog Mushroom Mycelium**

Ethan Campbell

*Faculty Mentor:* Jonathan Hulvey (Biology)

Antibiotic resistance is a growing problem worldwide as antibiotics are overprescribed, and pharmaceutical research has slowed due to the lack of profitability. Fungi are known to produce valuable anti-microbial metabolites. Previous research has shown that the mushroom species *Hydnum repandum* (Hedgehog mushroom) may produce antimicrobial metabolites. A limiting factor for studying antimicrobial metabolites in *H. repandum* is the growth rate, which can be increased by the amending media with glucose and/or an alternative nitrogen source. *Hydnum repandum* cultures were cultivated on potato dextrose agar (PDA) amended with various sources of nitrogen from organic plant products and growth measured after 19 days. A top agar assay with various bacteria, including *Staphylococcus aureus*, was used to test for zones of inhibition resulting from antimicrobial metabolites from *H. repandum* mycelium. Current results found that spinach and

soy powders added as a nitrogen source produced the greatest increase in growth compared to the PDA control, while beet powder resulted in the slowest growth. When zones of inhibition were measured (against *S. aureus* in a top agar assay), beet powder amended PDA produced the largest zones while spinach and soy produced negligible zones. These findings offer new avenues for antibiotic research in *H. repandum*.

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### **Ground, Drone, and Helicopter 3D Photogrammetric Modelling of Costal Erosion, Dinosaur Tracks, and Lake Beds**

Kelvin Carranza-Martinez and Matthew Tardella

*Faculty Mentor:* James Hyatt (Environmental Earth Science)

This poster describes research experiences that introduced us to digital photogrammetry as applied to ongoing projects examining coastal change at Block Island, construction of a detailed topographic model of dinosaur tracks at Yale Peabody Museum (YPM), and drone mapping at a shallow cove at Andover Lake, CT. For Block Island, we captured ground level, drone, and doors-off helicopter images to create 3D models of shorelines and analyze erosive and depositional change through time. At YPM we imaged and modeled the slab to create height maps that support footprint analysis and aid in a publication on the slab for YPM. We learned to fly a drone on campus by modelling the Fine Arts Center (with permits from campus police) and develop flight mission plans using conventional, oblique, or smart oblique camera angles to analyze sediment and vegetation distribution in the Andover Lake cove. Additionally, we used several models to 3D print sites of interest with Metashape, Meshlab, Blender, and Cloud Compare software. Ongoing efforts seek to establish coordinates for models and measure volumetric change for some sites. These experiences illustrate the versatility of photogrammetric modelling for spatial analysis of a variety of geologic/environmental sites.

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### **How Does Tap vs Reverse Osmosis Water Change the Effectiveness of Mammoth p Microbes.**

Devon Cavanaugh

*Faculty Mentor:* Bryan Connolly (Biology)

Mammoth p is a product that contains beneficial microbes for plants with a claim to increase blooming by unlocking a plant's micronutrients. However, tap water in populated areas typically contains trace amounts of chlorine to kill off any harmful germs. Because mammoth p utilizes microbes to support plant growth, it is theorized that reverse osmosis water is required to achieve the positive benefits from using this supplement. To test this, a study between ten CBD marijuana plants treated with tap water, and ten with reverse osmosis water will be conducted. Weekly growth will be documented to help follow how well the plants are growing, with a final plant weight and total bud weight(grams) being used to determine if one set of plants experienced better results than the other. Data will be presented using modern tools to graph out the findings in a clear and concise manner, and then presented at the CREATE 2025 fair.

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### **Perceived Safety at Eastern**

Emma Cegielski, Adele Hong, Julia Magao, and Madison Wood

*Faculty Mentor:* Megan Stanton (Sociology, Anthropology, Criminology and Social Work)

Perceived sense of safety among students is a critical component of a supportive and successful learning environment, especially for gender minority students and women. However, existing studies often lack nuance regarding when, where and to what extent students perceive that their sense of safety is compromised. Our study, therefore, examines how Eastern Connecticut State University (ECSU) students perceive their own safety on campus and in the surrounding community. We used an electronic survey to collect a non-random convenience sample of students at ECSU (n=116). Our study found a significant relationship between gender and perceived safety, with ciswomen feeling less safe than cismen and transgender and gender non-conforming students reporting the lowest levels of safety across multiple locations and situations. Further, though cismen reported the highest rates of perceived safety overall, cismen reported feeling less safe in the surrounding community than on campus. These findings indicate a need to further study students' perception of safety and identify actions that campus leaders can take to make students feel safer.

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### **Multi-Class MRI Brain Tumor Classification: CNNs vs. Vision Transformers**

Dylan Chamberlin

*Faculty Mentor:* Sarah Tasneem (Computer Science)

This study explores the performance of two types of AI models designed for classification tasks. The first of the two models compared was DenseNet, a Convolutional Neural Network, a type of AI model inspired by how neurons in the brain are arranged to detect edges and textures in images. The second AI model tested was ViT-B/32, a Vision Transformer uses self-attention, so it is trained by processing inputs in parallel and assigning attention scores to the importance of different elements. The dataset used was images of three types of brain tumors and non-tumor cases from 5,249 MRI scans. The models were evaluated based on their accuracy, speed, and computational requirements to compare their suitability for time sensitive medical applications such as providing an accurate and fast diagnosis. By examining the performance these architectures, this research provides insight into the capabilities of traditional CNNs versus ViT models for medical image analysis. As the relationship between -AI and medicine continues to evolve in fields such as AI assisted diagnostics, understanding the tradeoffs between different AI model architectures can provide valuable insights into future developments and practical implementations in healthcare.

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### **Food Insecurity and Resource Access Among College Students**

India Charles, Aida Flores, and Madison Turcotte

*Faculty Mentor:* Megan Stanton (Sociology, Anthropology, Criminology, Social Work)

Food insecurity is a significant issue affecting college students, influencing their academic performance, health, and overall well-being. This study analyzes the extent of food insecurity among students at Eastern Connecticut State University through an online survey of a non-probability sample of Eastern students (N=103). Results show that 13.6% of students worried about running out of food, 12.6% reduced meal sizes or skipped meals due to financial constraints, and 72.8% were unable to afford balanced meals. Additionally, 60% do not receive financial support from family for

food. While 67% of respondents knew of the Supplemental Nutrition Assistance Program (SNAP), only 7.8% had received benefits. Awareness of campus and local food resources was relatively high, with 66% knowing about Shawn's Cupboard and 61.2% aware of the Covenant Soup Kitchen. However, usage remained low, with only 17.5% utilizing Shawn's Cupboard and 4.9% using the soup kitchen. The findings of our study identify ongoing gaps in access to nutritional food for students on campus and indicate barriers to receiving resources. These findings highlight a need for further research and action at the university level to address this issue.

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### **Packaging Design - Branding & Advertising**

Michelle Chenail

*Faculty Mentor:* Soojin Kim (Art and Art History)

While taking the Packaging Design course I was introduced to using Adobe Dimension, which can be used to combine three dimensional objects with designs made with vector software. The final assignment for the course culminated in creating a product with packaging that was printed using a Cricut cutting machine, along with a poster advertising the item and a short animation advertisement. For my product I chose to create a packaged ink with a new year's celebration theme, as the beginning of a new year is recognized globally and many people use this time to start using a planner or track their long-term goals.

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### **Exploring the Impact of Unpaid Caregiving on Student Mental Health and Academic Success**

Bethany Clark, Maombi Mbombo, Janice Moreira, and Anneliese Person

*Faculty Mentor:* Megan Stanton (Sociology, Anthropology, Criminology and Social Work)

Unpaid caregiving of adults or children is often a second role many students have throughout their academic career. Caregiving can be an incredibly time-consuming and stressful role to play, as is the role of a student. However, there is little to no research on the impact of the combined challenges of caregiving and education on student mental health. Our study surveyed a non-random sample of over 100 Eastern Connecticut State University students to understand the impact of caregiving on mental health and academic success as compared to non-caregiving students. 22% of our sample were caregivers, the majority of whom were caregivers for adults, including parents, grandparents, siblings and others. Our research found a statistically significant difference between caregivers and non-caregivers in mental health status. On average, caregivers demonstrated a mental health status of "Extremely severe" according to the DASS21 score, as compared to non-caregivers who demonstrated moderately severe scores ( $p < .01$ ). Our study identifies a potential hidden population of students at Eastern who are caregivers and indicates a need for mental health resources for this group. Future research is needed to further understand their experiences and their academic and mental health needs.

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### **Opioid Overdose Death Rates by Race 1999-2024**

Osiel Cobos

*Faculty Mentor:* Sara Carroll (Health Sciences and Nursing)

The increasing deaths by opioid overdose has been recognized as a national Public Health Emergency under federal law. Federal agencies have prompted mitigation efforts through methods of treatment, prevention, and restriction. Restrictive efforts, however, have increased the risk of overdose as users turn toward illegal or illicit opioids as more accessible alternatives. The objective of this study was to analyze this shift in opioids and whether it led to changes in the death rates within different racial groups. This study analyzed crude death rates among different racial groups on a national scale, to determine whether there are statistically significant differences between them after 2018 when compared to previous years. The tested variables were crude mortality rates between four different racial groups from 1999-2024. Black overdose deaths were found to be the highest in 2018-2024 on average, while American Indian deaths were statistically similar, marking a shift from 1999-2017. These findings both coincide with previous research and indicate new shifts in the opioid crisis. This prompts the question of whether treatment efforts should be catered towards certain racial groups.

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### **Recognizing the Role of Salt Tectonics on the Growth of the Late Cretaceous Boixols / Sant Corneli Anticlinal Structure: Evidence from Rudist Reef Racies Distribution and Syndepositional Slumping**

Hailey Cocca

*Faculty Mentor:* Peter Drzewiecki (Environmental Earth Science)

The timing of the origin of the southern Pyrenees and associated structural features has been a topic of debate within the geological community for decades. The Sant Corneli / Boixols anticlinal structure in the south-central Pyrenees, one of the earliest Pyrenees structures, is Late Cretaceous in age. Originally the growth of this anticlinal structure was attributed to compressional Alpine tectonics, which began immediately following the Santonian. Stratigraphic evidence, however, suggests that this structure was active during deposition of the middle and late Santonian Sant Corneli Fm, predating regional Alpine compression. Detailed mapping of complex facies relationships preserved within the Sant Corneli Fm was used to evaluate the timing of the Sant Corneli / Boixols anticlinal structure relative to the start of Alpine compression. The growth of the Sant Corneli / Boixols anticlinal structure resulted from salt tectonic activity during deposition the middle to late Santonian Sant Corneli Fm, prior to regional Alpine compression. Later compression overprinted the salt tectonics, masking the earlier salt tectonic event. A combination of structural geology and sedimentology was needed to resolve this long-standing debate regarding the timing of the origin of the Pyrenees.

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### **Phylogeographic Patterns of Cuttlefish: Evidence Supporting the Latitude Diversity Gradient**

Anita Colby and Elizabeth Hasara

*Faculty Mentor:* Matthew Graham (Biology)

Past research has linked water temperature to genetic diversity in many species through the Latitude Diversity Gradient (LDG), but this has not been studied in cuttlefish. To test if marine mollusks like cuttlefish follow the LDG, we analyzed COI sequence data from four species for which data were available on GenBank. Specifically, we assessed genetic diversity using nucleotide and haplotype diversity; and visualized genetic patterns with haplotype networks. Three of the four species showed patterns consistent with LDG. The fourth species, *Sepia esculenta*, had very low diversity, likely due to a smaller sample size and more limited sampling. Our results suggest that cuttlefish follow phylogeographic patterns that support the LDG hypothesis, and that LDG may also influence biogeographic patterns in Old World marine invertebrates.

Keywords: *Sepia officinalis*, *Sepia pharaonis*, *Sepia aculeata*, *Sepia esculenta*, COI, genetic diversity, phylogeography, haplotypes, molecular evolution, latitudinal diversity gradient

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### **Mental Health Stigma and Help-Seeking Behavior**

Katherine Collin, Sarah Duffy, and Olivia Wettemann,

*Faculty Mentor:* Sarah D. Nightingale (Sociology, Anthropology, Criminology, and Social Work)

The objective of this study was to examine if help-seeking behaviors of Eastern Connecticut State University students are impacted by personal and perceived public stigma of mental illness. The study used non-probability convenience sampling to test the hypothesis; personal stigma and perceived public stigma are positively correlated to willingness to seek help from mental health resources. The independent variable for the study is stigma (personal and perceived public). The dependent variable is help-seeking. A survey of eighteen closed-ended questions was used to link or dispute a correlation between personal stigma and perceived public stigma of mental illness and help-seeking behavior. Data was collected via a virtual questionnaire with a survey window of two weeks. Analysis was conducted using a correlation test. Results indicate that a small positive relationship exists between perceptions of public stigma and help-seeking that is statistically significant ( $r = 0.249$ ,  $n = 125$ ,  $p = .005$ ). These results show that the higher an individual perceives public stigma to be, the more unwilling they are to seek help. Limitations of the study include a small sample size and reduced variability of participants that identify as white women, which limits generalizability and representation.

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### **The Relationship between Exercise, Anxiety, and Mindfulness in College Students**

Elayna Comella

*Faculty Mentor:* Jenna Scisco (Psychological Science)

Transitioning to college is a universally new experience for many young adults. The newfound independence leaves some students with high levels of anxiety from such a big life change. During the transition to college, many students are so consumed with their own lives that they feel alone and lack mindfulness of those around them. Exercise is a proven coping strategy to decrease levels of anxiety and increase mindfulness. In the current study, 30 college students

from Eastern Connecticut State University were surveyed to assess the relationship between exercise, anxiety, and mindfulness. This study utilized two Likert style scales, the International Anxiety Questionnaire (IAQ) and the Mindfulness Attention Awareness Scale (MAAS). Additionally, this study utilized a self-report questionnaire, the International Physical Activity Questionnaire (IPAQ). After data was collected, hypotheses were tested using the Pearson's  $r$  correlation coefficient. In result, anxiety and mindfulness resulted in a significant negative correlation. However, the hypotheses that exercise would decrease levels of anxiety and exercise would increase mindfulness were not supported. The relationship between anxiety and mindfulness should increase the attention surrounding decreasing levels of anxiety in individuals to allow them to become more mindful.

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### **Risk Aversion and Food Preference in Hissing Cockroaches**

Amber Craney and Isabella Symington-St. John

*Faculty Mentor:* Kristen Epp (Biology)

Due to the social relationships of cockroaches, we hypothesized that the Madagascar hissing cockroach, *Gromphadorhina portentosa*, would be capable of detecting conspecific chemical cues associated with fear and that the presence of those cues might influence foraging behaviors. To test this hypothesis, we obtained disturbance cues from a hissing cockroach by agitating it and then collecting those compounds in a water rinse. In an initial study, when given a choice between food treated with disturbance cues or untreated cues, *G. portentosa* preferred food without disturbance cues. In a second study, roaches were given the choice between low- and high-quality foods, half of which were treated with disturbance cues. In this study, patterns regarding food preference in relation to conspecific disturbance cues were less clear. Although abundant research has been conducted on the behavior of German cockroaches, less work has examined the foraging and risk avoidance behaviors of Madagascar hissing cockroaches. This study is an important contribution to a better understanding of predator avoidance and food preference in that species.

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### **Interpretable Machine Learning Framework for Drug-Drug Interaction Prediction with Enhanced Negative Sample Selection**

Ashton Croteau

*Faculty Mentor:* Kedan He (Physical Sciences)

Drug-drug interactions (DDIs) occur when one drug alters the effect of another. Prediction of DDIs through in silico approaches is essential to address adverse drug reactions (ADRs), a worldwide public health crisis, in a cost- and time-effective way. Traditional in silico approaches have relied on the assumption of direct relationships between drugs and their targets, prioritizing structural similarity as the primary predictor of interactions. However, evidence shows that disease targets typically have intersecting pathways, and diseases arise from dysregulation of multiple targets, something that traditional models fail to capture. DDIs are also driven not only by direct target binding, but by metabolic pathways, pharmacokinetic properties, and network-based effects in biological systems. By constructing several drug similarity networks we aim to capture the broader biological context of DDIs. These networks will include: 1. A protein-target network based on sequence similarity, reflecting shared polypharmacology. 2. A clinical similarity network derived from Anatomical Therapeutic Chemical (ATC) codes,

linking drugs with overlapping therapeutic roles. 3. A structural similarity network (SMILES-based) to evaluate traditional assumptions. Future work will leverage these networks to extract complex, heterogeneous relationships between drug pairs, which will be used as input for training an interpretable machine learning model which predicts DDIs.

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### **Relationships Between Academic Anxiety, Procrastination, and Gender in College Students**

Sydney Dameron

*Faculty Mentor:* Kristi Salters-Pedneault (Psychological Science)

The purpose of this study was to obtain a better understanding of the relationship between academic anxiety, procrastination, and gender in undergraduate students. Procrastination's high prevalence rates and an association with people's stress and anxiety has started to cause problems for people in their academic lives. Previous research has found a positive linear correlation between procrastination and academic anxiety. Women have been found to report higher academic anxiety, while men report higher procrastination. A total of 72 participants (84.7% women, 12.5% men, 2.8% non-binary/non-conforming;  $M = 20.08$ ,  $SD = 1.92$  years old) were convenience sampled from Eastern Connecticut State University (ECSU). A significant positive correlation was discovered between both trait anxiety and writing anxiety with procrastination. A t-test revealed no significant gender difference for procrastination. Females were found to have significantly higher scores for science anxiety, test anxiety, and trait anxiety than males. Limitations of the current study include self-efficacy, ratio of men to women, self-report bias, and inadequate internal reliability for science anxiety. Future research should focus on replicating the current study with a larger and more diverse population. Studies should be done looking at how extraneous variables impact the relationship between academic anxiety and procrastination.

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### **Mental Health Therapeutic Techniques and LGBTQ+ People**

Sydney Dameron

*Faculty Mentor:* Cara Bergstrom-Lynch (Sociology, Anthropology, Criminology, and Social Work)

The purpose of this study was to examine the amount of education mental health clinicians receive that prepares them to work with LGBTQ+ clients. The study also looked into what treatment techniques are being used in therapy. Studies have found that despite the acknowledgement of needing to provide clinicians with the education to provide therapy to LGBTQ+ clients, there is very little education occurring. Previous research has also discovered the negative effects of using conversion therapy as a treatment option. The study contained a total of three participants varying in therapeutic orientation who were contacted through email. Line by line coding was done of interview transcripts to discover six main themes; reason for becoming a mental health clinician and working with LGBTQ+ clients, training received and recommendations, techniques used in treatment, suicidality and working with LGBTQ+ identifying clients, religion and the LGBTQ+ community, and hopes for working with LGBTQ+ clients in the future. Limitations of the current study include small sample size, majority of participants worked in private practice which could impact their training level. Future research should focus on replicating the study with more participants. Another study should see if this lack of education can be seen globally.

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## **Co-Culture of Fungi for Developing Mycelial Bio-block Materials**

Derek Davis

*Faculty Mentor:* Jonathan Hulvey (Biology)

Fungal mycelium emerges as a sustainable alternative to traditional building materials due to its lightweight structure, biodegradability, and potential for self-healing properties. This study focuses on *Trametes versicolor*, a polypore fungus with skeletal and binding hyphae, which contributes to both structural integrity and adhesion within composite materials. Previous research supports the use of *T. versicolor* in mycelium-based bio composites, making it an ideal candidate for bio-block materials. The strain used in this study was cultured from a wild specimen collected at the ECSU Arboretum in Fall 2024. The fungal mycelium will be acclimated to growth in media amended with hydrogen peroxide in order to limit contamination and facilitate working with mycelium in non-sterile conditions. Following this phase, mycelium will be transferred to sawdust-based substrates and molded into 7-inch diameter cylindrical blocks. In future trials, co-culturing with *Armillaria* sp. will be explored to assess whether its rhizomorphs impart additional tensile strength to the bio-blocks. Once fully colonized, blocks will be subjected to mechanical strength testing using weights to measure breakage and compression resistance. These findings will contribute to the development of stronger, biologically derived materials for potential applications in eco-friendly construction.

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## **Additional Phylogeographic Insights into the Eastern Red Centipede of the Appalachian Region**

Derek Davis, Bec Norman, and Noel Turner

*Faculty Mentor:* Matthew R. Graham (Biology)

The Appalachian Mountains and adjacent provinces of southeastern USA are geologically and biologically diverse, with high levels of endemism (species that occur nowhere else). Phylogeographic analyses indicate that animals with small distributions in these regions often contain unrecognized diversity and that Pleistocene climate fluctuations had significant impacts on distributions. In a previous study (Garrick et al. 2017), the eastern red centipede (*Scolopcryptops sexpinosus*) exhibited two main lineages that were overlapping geographically. However, the sampling included in their study was limited and omitted parts of the species' range in different physiographic provinces, areas of distinct landforms, and geological features. Herein, we build upon Garrick et al. by adding new samples from the surrounding provinces and characterized phylogeographic structure using phylogenetics and haplotype networks. Results indicate that another major lineage occurs in a coastal plain, similar to phylogeographic patterns found in the co-distributed scorpion species *Vaejovis carolinianus*. Additional sampling of *S. sexpinosus* is needed in provinces like the Coastal Plain to determine the full scope of phylogeographic structuring in the species. This study adds to the growing body of knowledge on phylogeographic and diversity patterns among organisms inhabiting the ancient Appalachian Mountain region.

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### **Star Light Marketing Group for the Diamond Mall**

William Dentch, Joe Hawkins, Joel Kindel, Sean Owens, and Myles Pratt

*Faculty Mentor:* Mihyun Kang (Business Administration)

This marketing project seeks to restore business to a failing mall in southeastern Connecticut, namely the “Diamond Mall”. Through the procurement of new vendors, Starlight Marketing Group, the author of this project, will reestablish brand awareness, foot traffic and relevance to the Diamond Mall. Additionally, the initiative will include a major outreach effort to attract new customers, and multiple media channels, e.g. Instagram and TikTok, will be utilized to do so. In the face of online shopping, this mall struggles to provide the convenience and accessibility that ecommerce has introduced into this space. Some of the other problems that we found when doing our investigation into how to improve failing malls was trying to convince businesses to invest in the mall when there was a lack of existing customer base is extremely difficult. The declining customer base of the Diamond Mall has made multiple businesses close down, resulting in less overall foot traffic for our existing stores. Opportunity’s that the mall will gain is an increase in customer base with the addition of chain stores and redevelopment of the mall’s entertainment space and dining space. Also, with the fresh revamp of the mall we are sure to attract the attention of local influences which will help drive sales and new customers to the Mall. The new idea for the Diamond Mall uses social media to help bring exposure to our business and reach our target audience. Our campaign period for our business ran from March 1st to May 1st . Our means of promotion are primarily through TikTok and Instagram to help reach our target audience of college students. The algorithms of these two platforms will help us get exposure quickly from our target audience.

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### **A Comparative Analysis of Genetic Diversity in Cosmopolitan and Non-Cosmopolitan Jellyfish**

Alexander Diaz, Madison Meagher, and Imani Rodriguez

*Faculty Mentor:* Matthew Graham (Biology)

Geographic range size is hypothesized to influence patterns of genetic diversity within species. This study investigates this relationship in jellyfish by comparing genetic diversity metrics between species exhibiting cosmopolitan versus non-cosmopolitan distributions. We specifically test whether species with larger ranges possess greater genetic diversity. Mitochondrial DNA sequences (COI gene) were analyzed from four species: two cosmopolitan (*Cassiopea andromeda*, *Phacellophora camtschatica*) and two non-cosmopolitan (*Mastigias papua*, *Rhizostoma octopus*), with 20 samples per species. Genetic diversity was assessed using haplotype diversity and nucleotide diversity, and relationships among haplotypes were visualized via haplotype networks. Results indicated significantly higher haplotype and nucleotide diversity in the cosmopolitan jellyfish species compared to the non-cosmopolitan species. Genetic variation within cosmopolitan species was characterized by more numerous and divergent haplotypes, whereas non-cosmopolitan species exhibited lower overall diversity. These findings support the hypothesis that jellyfish species with more restricted geographic ranges tend to maintain lower levels of genetic diversity.

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### **Testing the Effectiveness of Commercial Indole-3-butyric acid (IBA) Gels on Root Formation in Cannabis Sativa**

Natasha Durand Castrodad

*Faculty Mentor:* Bryan Connolly (Biology)

Commercial Cannabis (*Cannabis sativa*) cultivation operations are based on genetically identical plants or clones to insure uniform production. Indole-3-butyric acid (IBA) is a synthetic plant rooting hormone or auxin is commonly used to produce these clones. We tested 3 different commercial IBA gel preparations to test their effectiveness at inducing root formation in Cannabis. Cuttings of cannabidiol (CBD) *C. sativa* were treated with three auxin preparations, Clonex, Athena Cuts, or Super thrive, and there was a control group of cuttings without any IBA. In previous experiments, Clonex performed the best and was expected to induce the most root growth in this study. Clones were placed in peat rooting cubes and set in a shallow tray of water and kept moist under humidity domes. On day 9 and day 12 roots were counted, and the longest root of each plant was measured. Three trials were conducted. Cuttings per treatment ranged from 16 to 25 per group for a total number of 304. An analysis of variance (ANOVA) and mean separations was performed to determine differences between treatments. The results show that as expected Clonex produced the most roots, followed by Athena Cuts, the control group, and lastly Super thrive.

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### **Influence of Parental Gatekeeping on Longitudinal Pathways of Parent-Child Relationships**

Cailey Fay

*Faculty Mentor:* Caitlin Vasquez-O'Brien (Psychological Science)

Parents have a strong influence on children, as do co-parenting dynamics, including parental gatekeeping (a dynamic in which one parent regulates their co-parent's involvement in childcare; Puhlman & Pasley, 2013). We hypothesized that early childhood parenting behaviors would predict parent-child closeness and child disclosure in adolescence; mediated by gatekeeping. We tested this hypothesis using data from a longitudinal study of family triads (N=145). Parenting behaviors were observed at T1 using the toy share task (Brody et al., 1992). Parents also self-reported on their warmth using the Child Rearing Practices Report (Block, 1965). Parental gatekeeping was assessed at Time 2 (T2) using the Parental Regulation Inventory (Van Egeren, 2000). At Time 3 (T3), parent-adolescent closeness and conflict was measured using the Child-Parent Relationship Scale (Driscoll & Pianta, 2011) and disclosure was measured using the Obligations to Disclose scale (Ladis et al., 2020). Controlling for child gender, age, and socioeconomic status, path analysis using multilevel modeling to account for sibling clustering showed significant correlations. Longitudinally, T1 parent-reported warmth predicted increased gate-opening at T2. T1 observed warmth and control predicted the T3 parent-child relationship quality. These findings highlight the importance of parental warmth and effective co-parenting to maintain close parent-child relationships in adolescence.

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### **The Relationship Between Stress, Communication, and Relationship Satisfaction**

Kyleigh Felice

*Faculty Mentor:* Caitlin Vasquez-O'Brien (Psychological Science)

Stress and communication are important factors in a relationship's quality. Stress impacts relationship satisfaction by decreasing it, while positive communication increases it (Falconier et al.,

2014; Meeks et al., 1998). However, little research has evaluated how stress and communication work together to impact relationship satisfaction. In the current study, it is hypothesized that stress should be negatively correlated with relationship satisfaction, positive communication should be positively correlated with relationship satisfaction, and the way in which stress influences relationship satisfaction will be changed by communication, specifically that high values of communication will decrease the negative effect stress has on relationship satisfaction. Thirty college students from Eastern Connecticut State University were recruited to assess their levels of stress, communication, and relationship satisfaction. These variables will be measured by the Perceived Stress Scale (Cohen & Williamson, 1988), Scale of Self-Perceived Communication in the Couple Relationship (Iglesias-García et al., 2019), and Relationship Assessment Scale (Hendrick, 1988). Results show that communication has a significant influence on relationship satisfaction, but general stress is not as impactful in relationships. Results of this study can help couples feel more satisfied in their relationship by understanding the importance of positive communication and implementing more of it into their conversations.

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### **Urban Legend Project: The Red Room and other Dark Web Legends**

Samuel Fischer

*Faculty Mentor:* Scott Moore (History)

The story of the Red Room is a modern-day urban legend that has spread throughout the internet. According to the legend, there are secret live streams found online where sadists gather anonymously to watch a victim be brutally killed. These supposed livestreams take place on the Dark Web, a fully anonymous and untraceable part of the internet. The Dark Web, sometimes known as the Deep Web, has been the source of many rumors and legends online, with its mysterious nature and ominous name inspiring many ideas about what kind of activity could be found there. With the limited access to the Dark Web, many of these rumors began to circulate as fact, as people weren't willing to put in the effort to verify these claims. Of these rumors, the Red Room legend was the most prevalent, inspiring many horror stories and clickbait articles. Through my research, I wanted to figure out why this legend has been so prevalent in recent years, and what it suggests about our society. Through my poster, I want to illustrate how the relevance of the Red Room urban legend represents a much larger concern within members of our society.

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### **Academic Major Inequality**

Dylan Flynn, Oscar Molina, Edon Selimaj, and Liam Shanley

*Faculty Mentor:* Niki Kunene (Accounting and Business Information Systems)

The allocation of resources across programs at Eastern is unequal. Certain programs have more faculty, course offerings, better facilities, funding, equipment, and classrooms than others. These differences result in students having worse learning outcomes, lower morale, and lower enrollment in less fortunate programs. Students in neglected programs are negatively impacted both during their undergraduate experience and post-graduate opportunities. Eastern has a wide variety of majors, and that diversity of disciplines contributes to its uniqueness. Certain disciplines are valued above others, undermining this goal.

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### **Identifying a Possible Function for Bacteria in the Brain**

Meghan Georgescu and Pearl Kwadzi

*Faculty Mentor:* Kurt Lucin (Biology)

The community of microorganisms living within and on us is collectively called the microbiome. These communities serve many important functions in the body, which researchers are just beginning to understand. While the composition of the microbiome at most body sites has been extensively studied, little is known about the brain. Previous studies support the existence of microbial communities in the diseased brain, but none have investigated healthy brains. Using next generation sequencing for 16S, we identified bacteria in healthy mouse brains. Importantly, bacterial communities in skin and blood from the same mice differed from the brain, suggesting bacteria detected in the brain did not result from contamination. We also cultured bacteria from the brain and identified the bacterial genera present. Based on literature searches of our cultured bacteria, we found that several genera may express genes that regulate neurotransmitters. Using DH10B *E. coli*, a bacterial strain known to express several of these genes, we tested the ability of bacteria to metabolize glutamate. Glutamate metabolism was confirmed via a glutamate assay by measuring reduced glutamate levels over time in glutamate-supplemented culture broth. These findings suggest that bacteria in the brain could be critical for maintaining healthy levels of neurotransmitters.

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### **The Effect of Different Nutrient Solutions on the Proliferation of *Prevotella melaninogenica***

Elizabeth Gomez

*Faculty Mentor:* Elizabeth Cowles (Biology)

*Prevotella melaninogenica* is a bacteria that plays a role in gut health through its ability to degrade complex carbohydrates. Bacteria were cultured anaerobically at 35° C in a 24 well plates containing either homogenized beef juice or vegetable juice. After 3 days of anaerobic incubation the bacterial growth was analyzed using a spectrophotometer. The results indicated that there was a difference in growth patterns depending on the nutrients. This suggests that there is a dietary impact that can impact proliferation. These findings contribute to a better understanding of how diet can shape that gut microbiome and highlight the need for further research on the relationship between *Prevotella melaninogenica*

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### **Microbiome Analysis of Scorpion Venom from *Anuroctonus phaiodactylus***

Abby Heidorn and Zachary Kelly

*Faculty Mentors:* Matthew Graham and Barbara Murdoch (Biology)

Venom is composed of a complex mixture of compounds with unique biological functions. Interestingly, the venom protein components have shown potential clinical and pharmacological applications in a variety of areas, including the production of anti-cancer and antifungal medications. Despite the wealth of knowledge regarding the venom's protein components, there are no reports of microbiome analyses in the scorpion venom. This may be attributed to the central dogma that scorpion venom is sterile - devoid of bacteria. Contrary to central dogma, preliminary studies in our lab found bacteria in the venom, leading to a larger study discovering the bacterial communities present in the venom of *Anuroctonus phaiodactylus*, the swollen stinger scorpion. Using Nanopore sequencing, we analyzed venom DNA for amplicons from the 16S rRNA gene. The 16S rRNA gene

is commonly used to identify bacteria. Through taxonomic analysis with Epi2Me bioinformatics, we provide important insights into the types of bacteria present. Having sampled our scorpions from different geographical regions, we hope to decipher the possible role of the microbiome in the geographical adaptation of *Anuroctonus phaidactylus*.

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### **Disruptive High School Students**

Jacob Hickey, Samuel Klein, and Jake Rivard

*Faculty Mentor:* Niki Kunene (Accounting and Business Information Systems)

After high school gets out, many high school students flock to Eastern's student center. This hinders Eastern students from getting lunch and keeping up with their busy schedule. It also poses a security risk. Large unidentifiable crowds make it easy for items to be stolen from the student center or even for conflict to break out. Preventing high school students from entering the student center by requiring student ID with purchase will improve the quality of life for Eastern students and faculty which will improve safety for everyone.

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### **The Significance of Maize in Pre-Contact Southern New England: A Pilot Study**

Eric Hohenthal

*Faculty Mentor:* Amanda Leiss (Sociology, Anthropology, Criminology, and Social Work)

A multifaceted and exploratory pilot study focusing on the role of maize in the Indigenous societies of southern New England prior to European contact. Maize attained a position of spiritual significance unlike most other food stuffs used by the Indigenous peoples of this region. This is important to note as it is a relatively new addition to the foodways of the region with the oldest evidence of maize dating from roughly one thousand years before the present day. This study explores this topic with a review of the current archaeological literature on maize horticulture in southern New England as well as Indigenous oral traditions. This is done in conjunction with a use-wear analysis experiment in which deer jaw bones are used to process ears of maize. Deer jawbones were traditionally used to remove kernels from dried ears of maize. This experiment is being done to examine what wear patterns maize processing may leave on jawbone tools to provide a framework to infer the use of jawbones archaeologically.

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### **20 Years Later And "Tango Makes Three" is Still in the News**

Alixander Hollister

*Faculty Mentor:* Susannah Richards (Education)

Historically and currently, some people dismiss LGBTQ+ identities as “just a phase,” using that excuse to justify prejudice. And *Tango Makes Three* (Richardson & Parnell, 2005) follows the true story of Roy and Silo, two male penguins at the Central Park Zoo who raised a chick—named Tango—after trying to hatch a child of their own. It's a story about love, family, and equity, which are necessary topics that children should be educated on. Since it portrays a same-sex couple, it quickly was and continues to be one of the most banned books in the U.S., with people claiming it “promotes homosexuality.” When Roy and Silo split in 2005 and Silo later paired with a female penguin, Scrappy, people twisted the narrative, using it as proof that queerness is merely temporary.

But that argument ignores reality: same-sex relationships exist in over 1,500 species, and Roy and Silo's relationship was real. Their history wasn't erased just because life moved forward. This presentation explores the book's history and why we must reframe how we discuss the book with young people.

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### **Network Community Detection for Comparing NBA and FIBA Players**

Samuel Hurlburt

*Faculty Mentor:* Megan Heenehan (Mathematics)

Networks can be used to model relationships between basketball players. In this case, a network of NBA players will be connected via a statistical similarity metric and partitioned into sub-networks. A similar process will be done to a network of Euroleague basketball players. The resulting partitions will be compared to determine optimal player archetypes for international competitions.

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### **Course Sections Supply not Meeting Student Demand**

Jalen, Emma, Julia, and Eliseo

*Faculty Mentor:* Niki Kunene (Accounting and Business Information Systems)

At Eastern, us and many of our peers have struggled to access required courses for our majors and minors. This is especially urgent for juniors and seniors, some of whom may not be able to graduate on time due to limited course availability. The root of the issue is a lack of sufficient course sections, often caused by restricted funding. This shortage creates serious consequences for students. It can mean taking off-season courses or delaying graduation, both of which can be expensive. It can also prevent students from acquiring internships or jobs because the courses they need are offered at limited times. The uncertainty adds unnecessary stress during an already demanding time. Professors, too, face pressure to accommodate overflow or add last-minute sections—often without additional resources—which can affect both teaching quality and morale. A potential solution is to distribute surveys to students and faculty before scheduling decisions are finalized. These surveys, combined with data on course demand based on major and class standing, would allow for more responsive planning. This approach could reduce last-minute scrambles, ease pressure on faculty, and help ensure financial resources are used efficiently—all while supporting students in staying on track academically and professionally.

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### **Boiling and Diffusion of Lithium Chloride in Water: An Experimental and Computational Study**

Ranee James

*Faculty Mentor:* Kwame Osei Bonsu (Mathematical Sciences)

This research investigates the effect of lithium chloride concentration on the boiling point of water under both standard and reduced pressures, as well as its diffusion behavior in water with and without evaporation effects. We experimentally demonstrate that lithium chloride elevates the boiling point of water, while reduced pressure lowers it. Additionally, as water boils and evaporates, its loss alters the concentration and distribution of lithium chloride in solution. Computational modeling is used to simulate the diffusion and redistribution of lithium chloride as evaporation

occurs. The simulations provide insight into how the solute accumulates and redistributes over time as water is lost, helping to interpret the effects observed in the experimental findings on boiling dynamics. By integrating experimental observations with computational simulations, this study offers a comprehensive analysis of how lithium chloride behaves at different concentrations under standard and reduced pressures. Understanding the thermodynamic properties of lithium chloride provides foundational insights that may support further research into the biological behavior of lithium ions in the body.

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### **The Impacts of Preterm Birth on Both Parents and Children**

Erika Jones

*Faculty Mentor:* Melanie Evans Keyes (Psychological Sciences)

Given the prevalence of preterm births, it is important to understand the impacts on parents and children. This literature review explored how preterm birth can affect parents' mental health and family functioning. Impacts on children's development (i.e., physical, cognitive, psychosocial), psychological health, and behavioral outcomes are also discussed. Three categories of interventions (i.e., infant-directed, parent-directed, parent- and infant-directed) were examined and found to be beneficial in a variety of ways. Lastly, recommendations for future directions and implications are provided.

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### **Culture as a Building Block For Education**

Lucy Jones

*Faculty Mentor:* David Stoloff (Education)

The poster will detail a picture of the Earth with a rainbow and words to highlight the importance of culture in education. The poster will be designed to be displayed in classrooms.

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### **Using a Co-CRISPR Method to Create a Model for Hereditary Spastic Paraplegia in *C. elegans***

Samuel Justo and Gracie Person

*Faculty Mentor:* Amy Groth (Biology)

We performed co-CRISPR to create a mutation in the *fath-1* gene of the model organism *C. elegans*. *C. elegans* is a species of microscopic roundworm with a short life cycle that can be used to study genetic pathways. *Fath-1* is an ortholog of the human protein FA2H (fatty acid 2-hydroxylase). Mutations in FA2H are linked to SPG35, a type of Hereditary Spastic Paraplegia (HSP) which is associated with gradual spasticity of the limbs and loss of vision. FA2H is responsible for converting fatty acids into sphingolipids, which are essential for various biological functions. Using non-homologous end joining, we created a deletion from exon 1 to exon 5 of the *fath-1* gene, which will serve as a model for Hereditary Spastic Paraplegia (SPG35). A separate mutation was created in the *dpy-10* gene to change the phenotype of the worm, allowing us to identify modified worms that are also likely to have the *fath-1* deletion. A deletion strain was identified by PCR. We are currently analyzing the deletion via sequencing and outcrossing the strain to remove other mutations that might have occurred. We will be able to use the deletion strain to test drugs and identify interacting genes in *C. elegans*.

### **Time Management and Academic Stress in Undergraduate Students**

Isabelle Papuga and Nick Kelley

*Faculty Mentor:* Sarah Nightingale (Social Work)

This study investigates the relationship between time management skills and academic stress among undergraduate students. Using a quantitative design, we surveyed 100 students from a diverse range of academic majors. Participants completed standardized questionnaires assessing their time management behaviors (e.g., setting goals, prioritizing tasks, avoiding procrastination) and their level of academic stress. A correlational analysis was carried out and there was no significant relationship between time management and academic stress. However, we did find a correlation with academic stress and feeling in control of your life as a whole.

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### **The Venom Microbiome: Bacterial Diversity in the Scorpion Species *Hadrurus arizonensis***

Zachary Kelly, Brycen Kennedy, Matthew R. Graham, and Barbara Murdoch

*Faculty Mentor:* Barbara Murdoch (Biology)

The microbiome is essential for human health; it can affect our cardiovascular system, diabetes, our mental health, and more. The microbiome consists of all the microorganisms that live in or on the body, including bacteria, fungi, viruses. The microbiome in arthropods (like insects, spiders, scorpions), plays a crucial role in digestion, physiology, immune function and even reproduction. Our interest was in the microbiome of scorpion venom. Curiously, scorpion venom has historically been presumed sterile, completely lacking bacteria. Contrary to this assumption, prior research from our lab using short-read Illumina sequencing indicated bacterial communities within the venom at the genus level. The present study expands our research of scorpion venom using long-read sequencing that we hoped would allow us to distinguish between species, rather than just genera. We isolated DNA from the venom of *Hadrurus arizonensis*, the giant hairy scorpion, performed PCR for the entire 16S gene to detect bacteria, sequenced the 16S amplicons using Oxford Nanopore Sequencing and analyzed the data with Epi2ME. Our results reveal a very different picture regarding the bacterial communities found within the venom of *H. arizonensis*. We continue to work with this sequencing technology to refine our approach and analysis to best determine bacterial communities.

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### **Characterization and Expression of Urate Transporters in ciPTEC and SA7K Kidney Proximal Tubule Epithelial Cell Lines**

Morgan Kelly

*Faculty Advisor:* Amy Bataille (Health Sciences and Nursing)

Urate is the product of the metabolism of purines obtained from diet, DNA, RNA, and ATP. Maintenance of blood urate levels requires a balance of urate production and elimination. Abnormal blood urate levels can cause numerous harmful diseases, including renal, cardiovascular, and metabolic diseases at high levels, and inflammatory or degenerative diseases such as Parkinson's disease, Alzheimer's disease, or multiple sclerosis at low levels. Transport processes in the nephron of the kidney are primarily responsible for this balance. In this study, transporter proteins lining the proximal convoluted tubule were examined, as these proteins control urate reabsorption and secretion to and from the blood. This study focused on three secretory transport proteins including Multidrug Resistance Protein 4 (MRP4), Breast Cancer Resistant Protein (BCRP), and Glucose

Transporter 9 (GLUT9), in SA7K and ciPTEC kidney proximal tubule epithelial cell lines. The goals were to determine differences in protein expression in each cell line and genomic differences for the genes coding for these proteins including ABCG2, ABCC4, and SLC2A9. Results found that neither cell line expresses the gene variants studied for BCRP and MRP4, and GLUT9 was inconclusive. Protein expression analysis displayed differences in MRP4, BCRP, and GLUT9 expression between the two cell lines.

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### **Young Adult Reflections on Their Juvenile Justice Experience**

Danielle Kuwornu

*Faculty Mentor:* Theresa Severance (Sociology, Anthropology, Criminology, and Social Work)

Since the late 19th century, the juvenile justice system was created to help guide young people who broke the law. It separated young offenders from adult offenders, with the understanding children have specific and unique needs. The purpose of this project is to help bring awareness to the impact the Juvenile Justice System is having on those who go through it. It is meant to shed light on areas within the system that need to be improved and how it can be done. The method used to collect data for this project was through the analysis of pre-existing narratives in either a podcast format or a TED Talk format. Analysis of narratives revealed the following themes: a need for restorative justice practices, a lack of individualized justice, and the adultification of young offenders. The data collected in this project highlights areas that can be improved in the juvenile justice system.

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### **Math Learning Difficulties of Primary Grade Children**

Sydney Lakowsky

*Faculty Mentor:* Sudha Swaminathan (Education)

The purpose of this poster is to describe the learning difficulties in mathematics presented by typically developing primary school students, and the accommodations implemented by primary school teachers that have shown to be effective in supporting those students. There are several avenues to support students diagnosed with Specific Learning Disabilities in their acquisition of math skills, yet students who do not meet the threshold for special education services can still struggle with mathematics concepts. The origin of those difficulties can range from specific challenges with number sense or problem-solving applications but could also stem from non-math related challenges such as confidence or memorization. The available research, however, is currently only related to students with Specific Learning Disabilities. To address this gap in the available literature, I am participating in an independent study exploring primary school educators' classroom observations of Math learning difficulties and their effective strategies. The poster will include background information, a summarization of the literature review, preliminary results, and implications for future research.

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### **Characterization of NFxxx44, NFxxx18, NFxxx06 and NFxxx39 mutants defective in symbiotic nitrogen fixation in the model legume plant Medicago truncatula.**

Anne Le

*Faculty Mentor:* Vijaykumar Veerappan (Biology)

Legume plants form symbiosis with the soil bacteria rhizobia and convert atmospheric nitrogen into biologically available ammonia by symbiotic nitrogen fixation (SNF). This is significant because agriculture depends on synthetic fertilizers as a major source of nitrogen. Synthetic fertilizer production is dependent on expensive fossil fuels and not sustainable. To discover novel genes that control SNF, Medicago truncatula Tnt1 retrotransposon insertion mutants NFxxx44, NFxxx18, NFxxx06 and NFxxx39 defective in SNF were isolated and phenotypes were characterized on aeroponic system in the absence of nitrogen. WT plants show green shoots with roots containing large ovoid pink nodules indicating efficient nitrogen fixation. All SNF mutant plants display reddish-purple shoots with roots showing small spherical white/light pink nodules indicating deficient nitrogen fixation. Root length, number of nodules and nodule ultrastructure were studied. Segregation analysis shows that NFxxx44 mutant phenotype is controlled by a single, recessive mutation. Tnt1 insertions in each mutant were identified using the Medicago Mutant Database and mapped to Medicago chromosomes using BLAST tool. In NFxxx44 mutant, Tnt1 insertions were confirmed using polymerase chain reaction. Discovery of novel genes involved in SNF will help agriculture because farmers would use less synthetic fertilizers to grow non-legume crops such as rice and wheat.

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### **Using InceptionNet to Classify NASA Images**

Tim Lee

*Faculty Mentor:* Kehan Gao (Computer Science)

The InceptionNet convolutional neural network algorithm was used to classify images from the HiRISE dataset provided by NASA. InceptionNet was designed to perform well while keeping memory usage and computational cost low, at the cost of complexity. The HiRISE dataset contains images of the surface of Mars grouped into 6 categories. The accuracy of InceptionNet at classifying each image as the correct category was 90.8%. This can be increased further by using newer algorithms.

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### **Exploring the Possibility of Immune Evasion by Commensal Bacteria in the Brain**

Gledis Levenishti and Vanessa Mitchell

*Faculty Mentor:* Kurt Lucin (Biology)

The collection of microorganisms that live in and on our bodies is known as the microbiome. While the microbiome has been extensively studied at various body sites, including the skin and gut, little is known about the brain since it has traditionally been considered a “sterile environment”. However, recent studies suggest that the brain might actually harbor bacterial communities. The role of these bacteria in the brain and how they avoid destruction by resident immune cells, called microglia, remains unclear. Here we establish a method for detecting microglial activation in the presence of factors secreted by bacteria. Specifically, human microglial cells (HMC3 cells) were cultured with factors secreted by the bacterial pathogen Escherichia coli (E. Coli). Microglia were then provided

5  $\mu$ m latex beads to determine their ability to “eat” (i.e., phagocytose) the beads. HMC3 cells demonstrated a marked ability to eat beads in the presence of secreted E. Coli factors. Importantly, secreted E. Coli factors did not appear to affect the health of the HMC3 cells, as detected by viability dyes. These results lay the foundation for future studies which will test whether “harmless” bacteria cultured from brains inhibit microglial function as a means for avoiding destruction.

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### **Best Practice Pneumonia Prevention Interventions for Individuals in the 65-year-old and Older Population**

Breonne Lewis

*Faculty Mentor:* Paul K. Canavan (Health Sciences and Nursing)

Older adults face a high risk of pneumonia especially for those with limited activity or on bed rest.

Statement of the Problem: Current treatments alone like medication and hospitalization do not address underlying vulnerabilities and risk factors for community or hospital acquired pneumonia.

Purpose: The primary objective of this literature review was to examine and identify best practice factors and interventions to reduce the risk of acquired pneumonia in the older population.

Methods: A literature review was conducted using peer-reviewed sources from NIH Intramural Database, PubMed and MedLine, focusing on articles published from 2000 to 2024. Searches included keywords like “Pneumonia,” “Geriatric Medicine,” “Current Treatment Options,” “Expiratory Muscle Strength Training,” and “Air Filtration.” Findings were synthesized to identify evidence-based best practices and trends in prevention. Results: Factors such as administrative support, specialized respiration muscle training, ideal heating and ventilation systems, physical activity and a checklist for routine procedures and accountability were identified.

Conclusion/Practical Application: A multifaceted prevention approach, integrating muscle training, air filtration, and other strategies, may better reduce pneumonia risk in older adults. The analysis highlights the importance of targeted preventive care, demonstrating its potential to improve health outcomes and reduce the economic and health burden of pneumonia.

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### **Genetic Diversity in Invasive Crayfish: A Comparative Analysis of Native and Introduced Populations**

Jason Longenberger

*Faculty Mentor:* Matthew Graham (Biology)

Invasive crayfish species have become a growing ecological concern, and one possible factor contributing to their invasiveness is the genetic diversity they acquire when expanding into new territories. To investigate this hypothesis, I analyzed mitochondrial DNA sequences from the National Center for Biotechnology Information (NCBI) database. Using I compared haplotypes across various populations, focusing on both long-established native and newly introduced invasive crayfish species. Contrary to the typical expectation that newly introduced species exhibit low genetic diversity due to bottleneck effects, our findings revealed that both long-term native and invasive crayfish populations exhibit similar levels of genetic diversity. Furthermore, we observed that crayfish species across large geographical areas, even with varying geological locations, maintained consistent genetic diversity. These results suggest a potential pattern in which crayfish species experience an initial sharp increase in genetic diversity upon introduction to new environments.

### **Relationship between Timing, Gender Expression, and Light Cycle Sensitivity in CBD Hemp Cannabis sativa L.**

Gage Mallard and Joseph Schley

*Faculty Mentor:* Bryan Connolly (Biology)

Cannabis sativa L. or CBD hemp has two basic light sensitivity expressions of its reproductive cycle; photoperiod plants flower in response to daylength, and autoflowering plants flower based on age. The light cycle sensitivity of a strain seems related to timing of gender expression. Cannabis is a dioecious plant, with males being removed quickly to produce a better yield. Autoflowering strains express males very early while photoperiod plants express males later, generally at the same time as females. Being able to remove males earlier would be of economic importance to growers. Our experiment explores the heritability of the autoflowering phenotype of cannabis and how it relates to gender expression. We grew a photoperiod strain (Abacus x Wife), an autoflower strain (CBD Victory), a second generation autoflower x photoperiod strain, (F2 Auto Tsunami x Sagan), and two photoperiod x autoflower hybrid strains (Auto Tsunami x Wife and Abacus x Auto Tsunami). Plants were grown under 18 hours light for 4-5 months with flowering date and gender expression recorded. Preliminary results show that the photoperiod and a few hybrid individuals took longest to flower. Most male plants flowered much sooner than females, especially in the autoflowering and hybrid autoflower x photoperiod strains.

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### **Bringing Zoomers to Life: Lighting Design for Theatre**

Jillian Martin

*Faculty Mentor:* Kristen Morgan (Communication, Film, and Theatre)

Light designing for a live stage show is a multistep process that involves research, running software, and operating and programming technology as well as creating cues and beautiful shots on stage. Earlier this semester, I was the light designer for our Spring show, Zoomers. In this role, I researched lighting influences and collaborated with the director and lighting specialist to create a light plot, hang, circuit and focus the lighting instruments, and create the cues for the show. My poster will showcase the process of light design for theatre and include several photos from the final looks onstage. Though this was an independent study, it also serves as preparation for my final honors thesis, where I'll be light designing another show on a larger scale in the upcoming Fall semester. The lighting design process is complicated and meticulous and involves communicating with the audience to focus their attention on certain areas, create realistic environments on stage, and help tell the story. When done right, it can have excellent results. I will highlight the process, goals, and steps of lighting design and explain how I executed them to create the final looks on my poster.

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### **McPotempkin Village: The Globalization of Post-Soviet Russia**

Emma McCormack

*Faculty Mentor:* Thomas Balcerski (History)

Since 2022, a resurgence of Cold War tensions has come to define modern Russian-American relations. Leaders of both nations have returned to a state of fundamental opposition, reflecting deep-seated mistrust and uncertainty. Yet for a brief period, Mikhail Gorbachev's 1986 reforms—

glasnost and perestroika—allowed for economic engagement beyond the Eastern Bloc. Multinational corporations, McDonald's among them, seized this opening to negotiate franchise deals in the Soviet Union. The Golden Arches debuted in Moscow in 1990, drawing unprecedented crowds amidst severe economic hardship. It appeared that the Russian people had embraced Western culture and businesses. However, following the 2022 invasion of Ukraine, McDonald's severed its business ties with Russia at the onset of Western sanctions. Over the thirty-six years between Gorbachev's reforms and the invasion, the Russian public's initial warmth toward globalization had permanently cooled. I argue that McDonald's operations in Russia served as a microcosm of Russian-American relations, reflecting political and cultural transformations since the Soviet Union's collapse. My interest in this topic emerged from two distinct discourses: one grounded in Russian perspectives, the other shaped by Western ideals. My research draws on media accounts, government statements, and interviews with Russians who witnessed either McDonald's arrival or departure in their former home.

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### **History, Segregation, and Garbology: Investigating the Foundations of the Connecticut Capital**

Makenzie N. Metivier

*Faculty Mentor:* Amanda Leiss (Sociology, Anthropology, Criminology, and Social Work)

Economic and racially driven disparities are historically rooted and ever-present issues plaguing regions internationally. Urban areas that experience physical, residential segregation along these disparities exhibit widely varying quality of life experiences within close geographic proximity. While seldom discussed in day-to-day discourse, Hartford, Connecticut is a harsh offender of this segregation-driven disparities—one of the most severe instances of racial and economic segregation in our nation. Despite this, there lacks an extant base of anthropological assessments of the state of the city. Data will be collected through interviewing individuals residing in the area of Hartford, Connecticut, and observing public litter in various neighborhoods of this region, coinciding with the residence of informants. This exploratory study aims to use the conjunction of the life experiences of residents and the anthropological practice of Garbology in Hartford to determine if the impacts of historical and contemporary segregation in Hartford are creating an observable disparity in quality of life. The poster will feature graphics to display, visually, the degree of segregation. These location-based visuals will be matched with the trash observed in said areas, and again analyzed against the results of the interview, to offer a glimpse at how observable and stark the inequity is within our capital. Project is under IRB review, but can be conducted with alterations otherwise.

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### **Fake Video-Game Anti-Piracy Measures**

Lucas Poole

*Faculty Mentor:* Scott Moore (History)

Anti-piracy has been a thing in video games since people started making illegal copies of games and distributing them. In the early days of piracy video games would have a vaguely threatening screen detecting that it was a pirated copy to deter the potential pirate. The internet took that concept and started fabricating fake anti-piracy screens with a "creepypasta"-esque tone to them. The goal of this presentation is to showcase some of the most pervasive fake anti-piracy screens, their origins and why these fake screens keep popping up year after year.

### **Food Insecurity Amongst Eastern Students**

Mariana Ramirez, Raeann Reid, and Makayla Vital

*Faculty Mentor:* Sara Carroll (Health Sciences and Nursing)

Food insecurity is an increasing issue with serious effects on both academic performance and overall health. Even at Eastern, a school often seen as resourceful, many students are experiencing food insecurity firsthand. To better understand the lived experiences behind this issue, we conducted three in-depth qualitative interviews with students who identified as food insecure. From these interviews, several important themes emerged: the effects of food insecurity on physical and mental health, the challenges of balancing academic responsibilities with basic needs, and the limited awareness and accessibility of available campus resources. Our findings suggest that food insecurity not only impacts individual well-being but also limits academic success, leading to broader concerns about long-term student outcomes. This work emphasizes the urgent need for Eastern to revisit and update its current policies. Specifically, it calls for a more targeted approach to outreach, the expansion of food assistance resources, and the integration of basic needs support into student success initiatives.

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### **Hold This for Me**

Erika Rohr

*Faculty Mentor:* Stephen Ferruci (English)

Hold This for Me explores the delicate relationship between nostalgia and photography—how photographs become placeholders for memories, standing in for moments we can never fully hold onto, no matter how hard we try. I began this project to reconnect with my past. With graduation approaching, I've been reflecting on childhood and how there's a younger version of me I don't fully recognize anymore, but I want to meet her again. The final product will be a photo album. Photo albums are every day, familiar objects, yet deeply personal. They remind us of the ways we try to hold onto our stories, even as the way we capture and share them evolves. Some images are digitally manipulated to give a nostalgic feel, while others incorporate hand-drawn markings, collage, and scrapbooking from current and past eras. This project asks: Who do we become when we lose touch with our past selves? Can photographs bring us back to those lost versions of ourselves, or do they simply reveal how much has already slipped away? These images are my way of sitting with that longing, holding onto what I can, honoring what's already gone, and making space for the memories still to come.

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### **Pollination Incompatibility of *Erubia Solanum ensifolium***

Kyle Roode and Natasha Durand Castrodad

*Faculty Mentor:* Bryan Connolly (Biology)

*Solanum ensifolium* is an endangered plant endemic to Puerto Rico. Field surveys have not found this plant and it is currently presumed extinct in the wild. Two populations were conserved at universities and botanical gardens one in Puerto Rico, and three clones were preserved in the continental United States. Pollen compatibility is key to the conservation of plant species to produce seed and to preserve genetic diversity. We tested if *S. ensifolium* is self-compatible and if two of the surviving clones are compatible with each other. These plants are being grown in the Eastern

biology greenhouse where this study occurred. Pollinations are still in progress, 200 self pollinations have not produced fruits, and over 100 crosses between clone A and B have not resulted in reproduction. We conclude that *S. ensifolium* is self-incompatible, where a single individual cannot reproduce with itself. We conclude that clones A and B are too closely related and are incompatible with each other. These data are key to the survival of the plant and we now know that clones A and B must be outcrossed to the third surviving clone or its progeny to produce seed for future conservation efforts.

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### **Parental Alienation, Cult Brainwashing and Belief in Dictatorship: Understanding and Overcoming the Power Dynamics at the Micro, Meso, and Macro Level**

Nicole Scalercio

*Faculty Mentors:* Nicolas Simon and Kim Dugan (Sociology, Anthropology, Criminology, and Social Work)

The purpose of this project is to bring together different literatures by a thorough review with a theme of how power divides on different levels. This work examines the similarities in personality, behavior, strategies and narcissistic abuse patterns of a parental alienator, cult leader and dictator and how this connects to the micro, meso, and macro levels of society. Divisive concepts are an important topic to understand in the 21st century. Due to the social and technological changes of the last 50 years, there has been a rapid increase of narcissism globally. It is of great import to bring awareness about alienating behaviors and how this is linked to individuals, groups, and society. The intent of this inquiry is to educate and inform on nonviolent ways to counter the destruction that factious tactics procure.

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### **Glimpses from the Archive: Brothertown Indian Nation**

Emma Schafer

*Faculty Mentor:* Thomas Balcerski (History)

This presentation showcases the process of collection accession and the work that goes into making a collection usable. This collection's focus is the Brothertown Indian Nation's case for federal recognition, as well as the history of the tribe and their relation to the state of Connecticut. It showcases primary source material, as well as extensive legal dockets from the court case, which the Brothertown Nation was added to in 2001. With notable contributions from Dr. Barbara Tucker, Professor Emerita, this collection showcases the importance of local history and Native American resolve. The aim of this presentation is to posit what comes next for both the collection and those involved with the case. Rather than being solely focused on the history of the tribe, this poster is designed to showcase what has been discovered through the archival process.

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## **An Evidenced Based Sport Specific Strength and Conditioning Program for Athletes related to the Volleyball Spike**

Elizabeth Squier

*Faculty Mentor:* Paul K. Canavan (Health Sciences and Nursing)

Shoulder injuries are a common occurrence in volleyball. A player's spike causes the shoulder (glenohumeral) joint a great amount of force. Statement of the Problem: To date there is no known evidenced based strength program related to the spike skill. Objective: The goal of this project was to perform a review of literature and to develop an optimal sport and skill-based strength and conditioning program for players related to the volleyball spike. Methods: A review of literature was performed using the databases CINNAHL, PubMed, Medline, SportDiscus between the Years 1998-2024 with key search terms; Volleyball, EMG, Spike, Injury, Biomechanics, Strength, Programs, Injury Prevention, Upper Extremity, Sport Performance. Results: The literature review provided an understanding of the biomechanics and the muscles that are active in the Volleyball spike creating a draft program. Personal experience and discussions with coaches and the faculty mentor further contributed to the creation of an evidence and experience-based strength and conditioning program. A focus of the program is to strengthen many shoulder region muscles including scapular stabilizer muscles. Practical Application: Strengthening the internal rotator and scapular muscles in the appropriate manner can be beneficial to overall shoulder health and increased performance in volleyball spikers.

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## **Assessing the Relationship Between College Living Arrangement and Levels of Academic Self-Efficacy and Stress**

Haleigh Thibodeau

*Faculty Mentor:* Phyllis Lee (Psychological Sciences)

Deciding to attend college is a stressful process that also involves choosing where to reside in college, requiring the student to consider factors such as finances, employment, ability to be independent, location, and more. Previous literature indicates that living on campus is associated with greater academic self-efficacy, but higher stress levels (Alkhaldeh et al., 2023; Lopez et al., 2010; Ong & Chu, 2022; Ran et al., 2016; Walsh et al., 2016). The aim of the current study is to identify the association between living on or off campus, and levels of academic self-efficacy and stress, in the purpose of introducing factors for students to consider for ensuring academic success and wellbeing. Forty-one Eastern Connecticut State University psychology students voluntarily participated in this study. Independent t-tests were used to analyze data collected from the Academic Self-Efficacy Scale and College Stress Inventory- Modified (Greco et al., 2022; Solberg et al., 1993). I hypothesized that students who resided on campus would result in higher levels of academic self-efficacy and stress. The results indicated that there were no significant differences between residing on or off campus, and levels of academic self-efficacy and stress.

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### **Gardner's Genesis: Alexander Gardner's Photographs at Antietam**

Andrew Thompson

*Faculty Mentor:* Scott Moore (History)

This poster presentation is of a paper about Alexander Gardner's photographs at the Battle of Antietam during the Civil War, and how they mark a fundamental change in photography as a medium and in American attitudes about war and its effects. From making the corpses still on the battlefield subjects of his images to using new methods of image capturing that allowed for infinite replication, Gardner would apply photography documentarily in the most well-known conflict of the time, amplifying his photos to national and eternal renown.

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### **Sports Media and Gen Z: The Changing Landscape of Sports Content**

Jared D. Tofil

*Faculty Mentors:* Nicholas Aconfora and Warren Osterndorf (Communication, Film, and Theatre)

This research explores the evolving relationship between Generation Z and sports media, focusing on the increasing dominance of social media platforms such as Instagram, TikTok, YouTube, and Snapchat over traditional media like newspapers and television. As digital consumption habits shift, sports leagues and teams adapt their strategies to engage younger audiences through social media, fostering real-time interaction and personalized content. This study examines how Gen Z consumes sports content, the impact of digital media on fan engagement, and the implications for the future of sports broadcasting. Social media has transformed the sports industry, offering both opportunities and challenges for traditional media outlets and sports organizations. The findings suggest that social media is not just an alternative but a primary source of sports-related content for Gen Z, shaping their engagement and expectations in unprecedented ways.

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### **Empirically Testing the Effect of Formatting on Application Tracking System Resume Parsing Accuracy**

Ian Valeta

*Faculty Mentor:* Garrett Dancik (Computer Science)

Application Tracking Systems (ATS) are used widely by Fortune 500 companies to automate and streamline the hiring process. An ATS automatically parses incoming resumes for job application postings with a parsing accuracy of 60-70% as of December 2023. Career service organizations claim that trivial resume formatting decisions such as font choice, margin size, bullet points, horizontal lines, and file formats affect the parsing accuracy of ATS, but few if any empirical studies have been done. This study utilizes the Google Docs API to generate 144 variations of 4 different resumes for an entry-level software developer role (4 choices of fonts, 3 choices of margin sizes, 3 types of bullet points, with or without horizontal lines). Each resume contains personal information (name, email, phone number etc.), experience (job title, company, responsibilities, etc.), education (institution name, awards, graduation date, etc.), and skills that were generated by the Mistral Small 3.1 multimodal language model. A total of 576 resume variations were uploaded to 3 different ATS resume parsers. Scanned information was downloaded and compared to the original resume data points to determine scanning accuracy.

## **Development of a Web-Application Tool to Enhance Workplace Productivity and Satisfaction**

Luis Vazquez

*Faculty Mentor:* Sarah Tasneem (Computer Science)

This project aims to develop a web-application tool using the gamification mechanics of points and progress trackers, to enhance employee productivity and boost workplace satisfaction. Gamification is the concept of using game mechanics in a context where games are not present. Shawn Achor's book "The Happiness Advantage" suggests a correlation between one's happiness and productivity at work. This theory put alongside The Conference Board 2024 Survey, in which workplace satisfaction was at 62.7%, shows room for improvement. The workplace environment is being used to analyze how these mechanics can positively improve employee satisfaction and therefore improve their productivity. The application built with the front-end technologies, functions as a to-do list enabling users to manage their daily workday tasks. Task completion data is counted with progress trackers and is stored in a database connected to the application through backend frameworks. The goal is to analyze whether the gamification mechanics of the application have a positive impact on employee productivity. This will be seen through a study on Eastern Connecticut State University Faculty, where the application will be used by one group versus one without the application over the course of two weeks.

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## **Hyperpolarization Effects on Innate Immune System Functionality**

Cesar Velez

*Faculty Mentor:* Derek Laux (Biology)

Ion concentration within a cancerous tumoric environment has been shown in prior studies to influence and alter antitumoral immunity by enhancing the effector function of CD8+ T cells through upregulation of Na<sup>+</sup>/K<sup>+</sup>-ATPase activity (Soll et al., 2024). This upregulation causes membrane hyperpolarization which amplifies the T cell receptor (TCR)-induced calcium influx, or movement of Ca<sup>2+</sup> ions into a cell or tissue, as well as downstream TCR signaling (Willebrand et al., 2019). The following experiment explores this concept to understand how the hyperpolarization of the membrane or tissue affects the effector function of the innate immune system. Zebrafish (*Danio rerio*) embryos under 5 days old were chosen as model organisms due to their lack of an adaptive immune system. The embryos were split among trial groups receiving varying salt concentrations ranging from the control of 34.8 g per liter to 132.72 g per liter of NaCl. An immune response was catalyzed by performing a tailfin cut on the zebrafish embryo. The innate immune response was then measured by using a Sudan Black immune cell staining assay and an immunofluorescence assay to measure the innate immune cell activity post-cut each day for a total 3-day incubation period within each salt concentration.

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## **Literacy and Science: Using Literature to Extend Learning in Science**

Melissa Vine

*Faculty Mentor:* Susannah Richards (Education)

Many schools in the United States implement science curricula that are supposedly aligned with the Next Generation Science Standards yet provide limited materials that support the integration of

science and literacy. For nearly four decades, science trade books have been recognized for integrating science and literacy instruction, highlighting women and people of all backgrounds in science, and presenting abstract science concepts and vocabulary in a concrete manner through illustrations and access features. In addition, trade books may show science as a human endeavor and cultivate students' use of scientific discourse and processes. Although literacy should be integrated into all content areas, many teachers are unprepared to integrate science trade books into curriculum delivery and may unintentionally feature books containing misinformation, monotonous cultural representations, or text complexity that is above students' reading levels. Teachers need tools to select quality science trade books and implement various techniques for integrating literature in science instruction so students develop science knowledge through literacy. This presentation provides audiences with sources for selecting outstanding science trade books, discovering science trade book creators, and suggestions on how to integrate books into science instruction and English language arts.

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### **Beliefs About the Causes of Depression**

Saoirse Ward

*Faculty Mentor:* James Diller (Psychological Science)

The chemical imbalance theory has been scrutinized for its simplistic hypothesis yet remains popular among the public. This study examined whether familiarity with the chemical imbalance theory influences biogenetic endorsements of depression and how these beliefs affect treatment preferences, stigma, and prognostic pessimism. A total of 69 undergraduate students and 10 mental health clinicians completed an online survey assessing beliefs about depression, familiarity with the theory, and measures of treatment preferences, stigma, prognostic pessimism, and functionality of depression. Students familiar with the theory endorsed biogenetic beliefs more strongly, which correlated with higher prognostic pessimism but not stigma. Biogenetic beliefs were associated with a preference for medication and combined treatment (medication and therapy) over therapy alone or no treatment. Mental health clinicians showed no correlation between biogenetic beliefs and perceptions of depression functionality. These findings highlight the ongoing influence of the chemical imbalance theory on treatment preferences and attitudes towards depression.

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## STUDENT PRESENTERS

Abby Heidorn	Brandon Young	Dylan Chamberlin
Abdul Ajmal	Brayden Alexis	Dylan Flynn
Abraham Flores	Breonne Lewis	Dylan Schore
Adam Rodowicz	Cailey Fay	Edon Selimaj
Addison Twohill	Caio DeSousa	Elisabeth Craig
Adele Hong	Caitlyn Cacador	Eliseo Bustamante Mendoza
Aida Flores	Caleb Gagnon	Elizabeth Cameron
Aidan Merrill	Cameron Milot	Elizabeth Gomez
Aidan Reiss	Cameron Witten	Elizabeth Hasara
Alex Thornton	Camila Nobre	Elizabeth Squier
Alexander Diaz	Carter Bouchard	Ella Pitman
Alexander Meade	Celeste Petrowsky	Elliott Kalisher
Alexander Saranich	Cesar Velez	Emily Lung
Alexandra Biondo	Cheyenne Crumpler	Emily Senna
Alixander Hollister	Chidera Aligwara	Emma Alford
Almi Morrales	Chloe Lacouture	Emma Cegielski
Alondra Abad	Cole Hills	Emma Kopycinski
Amarylisse Rodriguez	Colin Morrison	Emma McCormack
Amber Craney	Corrie Bonomi	Emma Schafer
Amritleen Kaur	Cotton Nathaniel	Emma Yacono
Andrew Thompson	Cristal Hernandez	Eric Hohenthal
Anita Colby	Cristina Lynch	Erika Jones
Anna Buchta	Dana Arroyo Infante	Erika Rohr
Anne Le	D'Andre Person	Ethan Campbell
Anneliese Person	Daniel Estrin	Evan Sinisterra
Anthony DeSabella	Daniel Gallagher	Fallon Bailey
Ariana Bradley	Daniel Gargano	Felix Li
Arianna Vernola	Daniel Lombard	Francette Donato
Arianna Wanzo	Daniel Silvester	Gabriel Arevalo
Ashton Croteau	Danielle Kuwornu	Gabriela Varela Santana
Ava Byers	David Pierce	Gage Mallard
Ava Byers	Derek Davis	Gledis Levenishti
Bec Norman	Devon Cavanaugh	Grace Barlage
Bethany Clark	Didismay Barbara Yedra Mena	Gracie Person
Bhura Uzair	Dominic Robucci	Hailey Abate
Blaze Armogida	Donovan Greenlaw	Hailey Cocca

Haleigh Thibodeau  
Hannah Bernashe  
Hannah Dean  
Havi Brouillard  
Hayden Smith  
Hazel Bostick  
Heriberto Cintron Santos  
Hugh Mackenzie  
Ian Harrington  
Ian Valeta  
Imani Rodriguez  
India Charles  
Iris Bazinet  
Isabella Symington-St. John  
Isabelle Papuga  
Ivy Poulakos  
Jack Lomax  
Jacob Davis  
Jacob Hickey  
Jacob Wurst  
Jaiden Baldwin  
Jake Rivard  
James Crotty  
James Lukow  
Janice Moreira  
Jared D. Tofil  
Jasmine Antonucci  
Jason Longenberger  
Jason Skoog  
Jenna Lawrence  
Jennifer Tripp  
Jessica Day  
Jillian Martin  
Jimena Santos  
Joe Hawkins  
Joel Kindel

Jordyn Szretter  
Joseph Schley  
Josh Aziz  
Josh Bouchard  
Josh Bouchard  
Josh Ganotti  
Joshua Pyle  
Joy Grillo  
Julia Magao  
Julia Terranova  
Justin Falasco  
Kara Mahoney  
Karynn Hardy  
Katelin Briere  
Katherine Campbell  
Katherine Collin  
Katherine Collin  
Katherine Escalante  
Kathleen McCarthy  
Katrin Lengsavath  
Kaycha Perez  
Kelvin Carranza-Martinez  
Kevin Gabriel  
Kyle Laliberte  
Kyle Roode  
Kyleigh Felice  
Kylie Nigretti  
Laila Wilson  
Lauren Kennedy  
Leah Davis  
Leana Benoit  
Lena Jones  
Liam Shanley  
Lilian Vinsel  
Lucas Poole  
Lucy Jones

Luis Vazquez  
Mackenzie Granata  
Madalyn Johnson  
Maddy Mueller  
Madeleine Orwick  
Madison Farrell  
Madison Gartsu  
Madison Meagher  
Madison Turcotte  
Madison Wood  
Makayla Vital  
Makenzie N. Metivier  
Manderz Baranowski  
Maombi Mbombo  
Maria F. Arredondo  
Mariana Ramirez  
Marissa Paquette  
Martin Tlahuel  
MaryKate Frassinelli  
Matt Belden  
Matthew Corbin  
Matthew Tardella  
Maximillian Smith  
Meghan Georgescu  
Meghan McAuliffe  
Meghan Turco  
Meghan Wrobel  
Melissa Vine  
Melody DesPlaines  
Mercedes Barrows  
Meredith Bogue  
Michael Furgalack  
Michael O'Gara  
Michelle Chenail  
Mitchell Peterson  
Mollylynn Doherty

Morgan Glasberg  
Morgan Kelly  
Muriel Stankeviciute  
Myles Pratt  
Nancy Avalos  
Nancy Davis  
Natasha Durand Castrodad  
Nathaniel Cotton  
Nathaniel Hayes  
Nayelli Rodriguez  
Neema Rock  
Neo Gomez  
Nick Kelley  
Nicole Scalerchio  
Nina Grim  
Noel Teter  
Noel Turner  
Olivia Bourque  
Olivia Melillo  
Olivia Mullings  
Olivia Wettemann  
Omotayo Quadri  
Orion Levy  
Oscar Molina  
Osiel Cobos  
Owen Marcelus  
Paige Hopkins  
Paola Torres  
Payton Pelkey  
Pearl Kwadzi

Quinn Sawyer  
Rae Shenker  
Raeann Reid  
Randy Heredia  
Ranee James  
Raya Cruse  
Raymond LaPointe  
Rebeckah Rubin  
Reese Siemiatkaska  
Rexford Welch  
Robert Barrow  
Robert Barrow  
Robyn Vetterkind  
Roman Azzolino  
Ryan Daly  
Ryan Hayes  
Ryan Toomey  
Sal Thongchampsy  
Sam Hurlburt  
Samantha Molzon  
Samuel Fischer  
Samuel Justo  
Samuel Klein  
Saoirse Ward  
Sarah Duffy  
Savannah Duursema  
Savion Ross  
Sean Cafferty  
Sean Crisci  
Sean Owens  
Sencere Rabel

Shannon Carbonell  
Shelby Anderson  
Shermine Bousquet  
Sierra Bedard  
Sierra Ings  
Silindile Majola  
Skylar Mink  
Sofia Cavalier  
Sydney Dameron  
Sydney Lakowsky  
Tanayah Longs  
Tanner Davis  
Taryn Beisel  
Taylor Ribeiro  
Teonjai Jackson-Beaufort  
Tiffany Henry  
Tim Lee  
Tyler Warren  
Uzair Bhura  
Vanessa Mitchell  
Vincent May  
William Dentch  
Xiomara Martinez  
Zachary Kelly  
Zachary Robinson  
Zachery Beaumont  
Zia-Grace Generette  
Zoe Calhoun  
Zolah Daley  
Zolei Burgos

## FACULTY MENTORS

Afarin Rahmanifar	Jonathan Hulvey	Okon Hwang
Allison Speicher	Joshua Idjadi	Paul K. Canavan
Amanda Leiss	Julia Wintner	Pete Johnson
Amy Bataille	Karl Stocker	Peter Bachiochi
Amy Groth	Kedan He	Peter Drzewiecki
Anthony Cornicello	Kehan Gao	Racheal Pesta
Anya Sokolovskaya	Ken McNeil	Robert Greene
Ashon Avent	Kim Dugan	Sara Carroll
Barbara Murdoch	Kin S. Chan	Sarah D. Nightingale
Brian Day	Kristalyn Salters-Pedneault	Sarah Tasneem
Bryan Connolly	Kristen Epp	Scott Moore
Cara Bergstrom-Lynch	Kristen Morgan	Soojin Kim
Christopher Torockio	Kurt Lucin	Stanislaw Kolek
Courtney Broschious	Kwame Osei Bonsu	Stephen A. Ferruci
Daniel Donaghy	Lora Lee	Sudha Swaminathan
David Stoloff	Maeve Doyle	Sukeshini Grandhi
Derek Laux	Matthew R. Graham	Susan DeRosa
Stephen A. Ferruci	Megan Heenehan	Susannah Richards
Elizabeth Cowles	Megan Stanton	Syed Islam
Emiliano Villanueva	Melanie Evans Keyes	T. Caitlin Vasquez-O'Brien
Frederick O'Neal	Mihyun Kang	Theresa Severance
Garrett Dancik	Nicholas Aconfora	Thomas Balcerski
Gregory Kane	Nicolas Simon	Tim Cochran
James Diller	Nicole Krassas	Vijaykumar Veerappan
James Hyatt	Nikki Kunene	Warren Osterndorf

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