

Southern Connecticut State University



Undergraduate  
**Research  
& Creativity**  
Conference

Saturday, April 29, 2023

A letter from the Undergraduate Research and Creativity Conference Planning Committee:

*The most beautiful thing we can experience is the mysterious.  
It is the source of all true art and science.*  
– Albert Einstein

While science and art are said to activate opposite sides of the human brain, they ultimately share a key purpose in the human condition: to enlighten. Scholars from all disciplines within the arts, education, humanities, sciences, social sciences, and business set out to quantify the intangible, shine a light of understanding upon the unknown, and harness the mystery seeping deep into the corners of our very existence. Though these disciplines have varying degrees of creativity and logic, they all rely on observation, interpretation, and documentation in one form or another to share this enlightenment. We appreciate them all, hoping to gain knowledge, understanding, and appreciation of the world around us.

Scholarship and creativity act as the glue that binds humanity together, collecting us in the shared purpose of enlightenment. It is with respect to this purpose that we set out to gather and celebrate the scholarship and creativity of the students at Southern Connecticut State University. It is our honor as members of the organizing committee to welcome you to the 8<sup>th</sup> Annual Undergraduate Research and Creativity Conference, hosted by Southern Connecticut State University. This conference is a celebration of scholarship and creativity in all forms, as well as a showcase for the leading minds of today's undergraduate community. As an educational institution, Southern seeks to promote interdisciplinary academic careers and both logic and creativity are key components in individual, economic, and societal success. The posters, oral presentations, art installments, and other various exhibitions highlighted in this conference demonstrate the diverse scope of subjects engaged by students from many disciplines as well as illustrating the parallels between them. The Research and Creativity Conference is a celebration of our journey to enlightenment. It aims to not only encourage continued work by the undergraduate community, but also to awaken individual curiosity and purpose. So it is with great pleasure that we present the scholarship and creative activity featured this year and invite you to join in what promises to be an unparalleled demonstration of undergraduate accomplishment.

**The 8<sup>th</sup> Annual Undergraduate Research and Creativity Conference is proudly sponsored by:**

The SCSU Foundation  
The Office of the Provost/Vice President of Academic Affairs  
Division of Research and Innovation  
The Research and Scholarship Advisory Committee  
The Office of STEM Innovation and Leadership  
The Art Department  
The Office of the President

Conference Committee  
Listed in alphabetical order:

Charles Baraw	Heather Stearns
Kelly Bordner	C. Michele Thompson
Christine Broadbridge	Jonathan Wharton
Jeremy Chandler	Bogdan Zamfir
Siobhan Carter-David	

# 8th Annual Undergraduate Research and Creativity Conference

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Saturday, April 29, 2023 | 9:30 a.m. – 3:30

p.m. Southern Connecticut State University

8:45 – 9:30 a.m.      Check in  
Poster and oral presentation set-up      3<sup>rd</sup> floor Ballroom Reception Area

9:30 – 9:45 a.m.      Welcoming Remarks:      3<sup>rd</sup> floor Ballroom

**Michele Thompson, Ph.D.** | *Prof. of Southeast Asian History & Chair of the Research and Scholarship Advisory Committee*  
**Robert Prezant, Ph.D.** | *Provost & Vice President of Academic Affairs, Southern Connecticut State University*

9:45 – 12:00 p.m.      Oral Presentation – Session 1A      ASC room 306  
Oral Presentation – Session 1B      ASC room 308  
Oral Presentation – Session 1C      ASC room 309  
Oral Presentation – Session 1D      ASC room 311  
Oral Presentation – Session 1E      ASC room 312

10:30 – 12:00 p.m.      Poster Presentation      ASC Ballroom  
Art Installations      Buley Library Art Gallery

12:00 – 1:30 p.m.      Art Crawl & Lunch      Earl Hall

**Join us for lunch at Earl Hall and explore the creative works of undergraduate Fine Art Students in  
Graphic Design, Painting, Drawing, Sculpture, Ceramics, Photography, Printmaking,  
and Jewelry/Metals.**

1:00      Coffee & Dessert      3<sup>rd</sup> floor Ballroom Reception Area

1:30 – 3:30 p.m.      Oral Presentation – Session 2A      ASC room 306  
Oral Presentation – Session 2B      ASC room 308  
Oral Presentation – Session 2C      ASC room 309

2:00 – 3:30      Art Installations      Buley Library Art Gallery

O1A.1 *Machine Politics in the Park City*

**Author(s):** Ashley Aguilera

**Faculty Mentor:** Jonathan Wharton

**Department:** Political Science

**Abstract:** A political machine is described as a party organization that has enough support and control over the political system in a city or state government. This notion at one point plagued several cities in the United States during the Gilded Era, including Connecticut's largest city, Bridgeport. Bridgeport has a long history of engaging in political corruption, and I will be examining this notion by explaining what it means when a party organization acts as a political machine and its implications on voters, city employees, and special interest groups. I will also analyze the political history of Bridgeport, the power the Democratic Town Committee holds over the city and its voters, and other political actors that actively participate in the democratic process. Present-day Bridgeport has four candidates vying for the mayoral seat in November's election, and civic action groups are advocating for an open, transparent election.

O1A.2 *Stephen Collins Project*

**Author(s):** Yvonne Hinds

**Faculty Mentor:** C. Michele Thompson

**Department:** History

**Abstract:** This semester I have had the opportunity to intern at Buley Library's Special Collections, working on the Stephen Collins project. Stephen Collins had been a professor at Southern and Yale. He had done extensive work on pesticides and the infestation of Gypsy Moths in Connecticut and played a role in the creation of the Bethany Land Trust. The part of the Collins' project that I have been working on is making the recordings of interviews with Collins' wife Barrie Collins, or the Oral Histories, available online for public use. There is a tedious, but interesting process that has to be done behind the scenes before anyone can access the interviews online. The first step is quality control which involves listening to all three interviews with Barrie and comparing what I heard to computer generated transcripts. Editing had to be done to make the transcripts clear and readable. The second step, the step that I am in the middle of, is subject control. Subject control involves assigning words or phrases called Subject Headings to each individual paragraph of the transcripts. Doing so allows for intellectual accessibility: the ability to search a word or phrase and the result be narrowed down to a certain part of the Oral Histories. This step is not easy because of the Library of Congress' strict rules and controlled vocabulary. Once I have finished assigning the Subject Headings, I will learn how to upload the Oral Histories to a site called Oral History Metadata Synchronizer (OHMS).

O1A.3 *One Fish, Two Fish, Where Fish, There Fish: Defining and Identifying Seafood Deserts Using Geographical Applications in New Haven County, Connecticut, U.S.A.*

**Author(s):** Vanessa Heigel

**Faculty Mentor:** Miriah Kelly

**Department:** Environmental Systems and Sustainability

**Abstract:** Food deserts are defined as areas with limited access to affordable and nutritious food. Similarly, seafood deserts are geographic spaces where access to seafood products is limited. Though seafood access is important for nutritional, socio-cultural, sustainability, and environmental justice reasons, research on the topic is scant. Therefore, this research project is twofold in that it establishes a formal geographical definition of seafood deserts and operationalizes this definition through a case study approach. It is widely accepted that there are three types of access that are germane in analyzing (sea)food deserts: (1) geographical (or spatial), (2) economic and (3) informational access. Using a GIS based modeling approach, this paper explores the spatial aspects of the seafood desert concept in the state of Connecticut.

O1A.4 *Understanding the Lived Experience of Afghan Refugee Adolescents: A Community-engaged Photovoice Collaboration*

**Author(s):** Rachel Schaffer

**Faculty Mentor:** Amy Smoyer

**Department:** Social Work

**Abstract:** In the Spring of 2022, Elena's Light partnered with a Refugee Literature class at Wesleyan University to conduct a photovoice project with refugee adolescents. The goal of this project was to give power to the refugee children to tell their own stories, as well as hope to understand from a community perspective what is important to refugee children. We wanted to use the findings to build new programming at Elena's Light, as well as help build

skills among the refugee community in photography, storytelling, teamwork, and intercultural understanding. This study is a secondary qualitative analysis of the “Refugee Stories” project that was conducted between Elena’s Light and Wesleyan University in 2022. The 12 participants provided 100 pieces of data that pointed towards many shared experiences of joy, family, academics, nature, and acculturation that are analyzed in this study, along with a detailed account of how the project was undertaken and the many nuances associated with working with the refugee population. This research can serve as a guide for future photovoice or art therapy projects with refugee children and families, as well as provide a closer look at the refugee experience in New Haven, Connecticut.

O1A.5 *Examining Problematic Internet Use, Student Burnout, and Wellbeing*

**Author(s):** Karlos J. Mate Piovanetti, Robert Kinzler

**Faculty Mentor:** Christopher Budnick

**Department:** Psychology

**Abstract:** Problematic internet use (PIU) significantly correlates with burnout and lower wellbeing in high school students and adults. Thus, similar outcomes are expected for undergraduate students. Additionally, relatedness, autonomy, and competence need satisfaction decreases burnout and increases wellbeing, and although general fear of missing out (FoMO) has not been researched, workplace FoMO was found to predict burnout. Therefore, we believe psychological need satisfaction and FoMO moderates the PIU/burnout/wellbeing relationship. Participants (n = 300) recruited via our university subject pool, other university networks, and social media were randomly assigned to either a high (n = 150) or low (n = 150) FoMO vignette condition. Participants completed pre- (i.e., trait FoMO, Internet Addiction Scale, Need Satisfaction and Frustration Scale), and post-measures (i.e., state FoMO, work and school burnout, wellbeing). Independent samples t-tests will examine baseline differences between conditions. and the experimental manipulation’s effectiveness regarding shifts in FoMO. Pearson’s correlations will assess the strength of the relationship between PIU and burnout/wellbeing (Hypothesis 1). For Hypothesis 2 and 3, we will conduct hierarchical linear regressions with PIU and the moderators (need satisfaction or FOMO) entered at Step 1 and their interaction term entered at Step 2. Results will be considered significant if model  $p < .05$  and the change in  $R^2$  is significant when the interaction term enters the model. Overall, we expect that PIU will predict higher burnout and lower wellbeing, and that psychological need satisfaction and FOMO will moderate that relationship. Results, discussion, limitations, implications, and future directions will be discussed.

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**9:45 – 12:00 p.m. | Oral Presentations – Session 1B**  
*ASC Room 308*

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O1B.1 *Unmotivated Students*

**Author(s):** Gianna Sia

**Faculty Mentor:** Andrew Smyth

**Department:** English

**Abstract:** When assigned to my student teaching placement this year, I was tasked with teaching 10<sup>th</sup> and 12<sup>th</sup> graders. Having two different grade levels, I was unsure how I was going to navigate two very different classes. I wanted my lessons to be challenging but not too challenging where the students couldn’t complete the lessons. As my weeks progressed in student teaching, I realized that teaching two different grade levels is not something I needed to worry about. I started noticing very quickly that my students were lacking in participation. When asked what my “motivating dissatisfaction” would be, I decided I wanted to research dealing with unmotivated students. When having whole group discussions, the students are hesitant to raise their hand to participate. I will ask the students a question, and they will all stare blankly at me. I will try to ask the question in a different way, and I still get the same response. The only time that students do participate is when I call on them. I always have the same students participating, but I want to try to get other students to be motivated to participate. During my last couple of weeks of student teaching, I want to discover some good ways to keep students motivated during the lesson. I can do this by incorporating different modes and methods into my lessons to get students motivated to participate. Lastly, I will interview other colleagues at the school to find different ways to motivate student participation.

O1B.2 *Effective Tech Integration*

**Author(s):** Paige Gorry

**Faculty Mentor:** Andrew Smyth

**Department:** English

**Abstract:** Through being a first-time teacher in a world that now has a robot that can write a Shakespearean sonnet in less than five seconds, I have discovered the motivating dissatisfaction of technology use reducing student engagement. This dissatisfaction is extra dissatisfying, if you will, as technology use is a pivotal part of instruction in most 21<sup>st</sup> century secondary schools. Students have their own Chromebooks, tasking teachers to post assignments on Google Classroom and stray away from using tangible worksheets or texts for instruction. While posting on Google

Classroom is convenient and effective, it also grants students the opportunity to look like they are completing work on their computer, until they are caught on their smaller phone screen, hiding behind the computer screen. I aim to improve this issue and create a balance where students know when phones and computers need to be put away and when they are acceptable to use. According to Gloria Mark, who studies digital distraction at the University of California, Irvine, it takes twenty-five minutes for someone to refocus on a task after being interrupted by the urge to check their phone. With this being said, students are constantly setting their engagement back by utilizing technology at inappropriate times. Through interviewing an experienced High School English teacher, I have gathered crucial insight on how to promote technology as a powerful tool, while also making students aware of those twenty-five minutes of reengagement time.

O1B.3 *Student-Driven Social Emotional Learning*

**Author(s):** Olivia Strelevitz

**Faculty Mentor:** Andrew Smyth

**Department:** English

**Abstract:** As I complete my sixteen-week student-teaching in a seventh grade English Language Arts classroom, I have found the rare breed that are seventh grade students to be quick-witted, personable, and hilarious. I have also found them to be shockingly mean and impatient with one another. Social Emotional Learning lasts a lifetime, but it is especially critical to foster in the intermediate years as students are figuring out themselves along with the world around them. The school at which I have been teaching incorporates SEL into the classroom through monthly advisory activities and weekly “restorative circles.” These lessons are often designed to have the students work out issues within their cohort between themselves through a structured dialogue. However, I find that the students see these activities as very artificial and don’t take them seriously. I explored how I can present and implement SEL lessons that are more student-driven. I would like to discover what the students genuinely want out of these activities – aside from viewing them as opportunities to get out of class time. How can we make these lessons less forced? My research is directed by my students. I collected my students’ opinions on SEL and then used these findings to generate and test out different strategies within my classroom.

O1B.4 *Unmotivated Parents*

**Author(s):** Michaela Csvihinka

**Faculty Mentor:** Andrew Smyth

**Department:** English

Throughout my experience as a student teacher, I’ve noticed and had to deal with unmotivated parents or guardians. To me, it seems peculiar that a parent or primary caregiver doesn’t care or is just plain uninterested in their child’s academic life. I’ve seen it many times throughout my student teaching so far where a student is failing and the parent either doesn’t respond to the email or phone call, or just thanks you for letting them know and no changes come. These experiences beg the question, how do you deal with unmotivated parents and or what can you do? In a time when it is so easy to communicate with others without ever seeing each other face-to-face, why wouldn’t you take the time to read and or respond to your child’s teacher if they are warning you your child will fail? Sometimes it feels as though there is only so much a teacher can do to try and get a student to do their work that a parent or guardian will need to step in to talk with or deal with the student. My research centers around why there are so many unmotivated parents and what I and others can do as teachers to help or fix the problem.

O1B.5 *Racist and Sexist Language in the Classroom*

**Author(s):** Ashley Slubowski

**Faculty Mentor:** Andrew Smyth

**Department:** English

**Abstract:** I have researched the topics of racist and sexist language in the classroom. I wanted to know more about the roots of where the need to use slurs and discriminatory language comes from. This will help me to understand the matter. I also want to know more about how to negate this type of hateful language professionally and effectively in the classroom (and hopefully beyond). Language is extremely powerful, which is something I intend for my students to know and understand. To the best of my ability, I want to make sure my students know the etymology, history, and impact of the words they use. I hope to inspire courage and empathy, not only through literature, but through its essential component: language.

O1B.6 *“The Sick Rose,” to be Deflowered and Hidden Drafts*

**Author(s):** Madeline Scharf

**Faculty Mentor:** Andrew Smyth

**Department:** English

**Abstract:** The crux of the paper is on the reasoning and elaborate meaning of the defiled rose in William Blake's poem, "The Sick Rose." However, it also includes my discovery in Blake's original draft, where instead of the pronoun of the attacking worm being "his," it is instead "her." This adds a new discussion about lesbianism in the time of Blake, one not seen in previous scholarship about "The Sick Rose."

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**9:45 – 12:00 p.m. | Oral Presentations – Session 1C**

*ASC Room 309*

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O1C.1 *A Day in the Life*

**Author(s):** Jasmine Griswold

**Faculty Mentor:** Shelley Stoehr-McCarthy

**Department:** Interdisciplinary Studies

**Abstract:** "A Day in the Life" is a collection of poems that was created out of the curiosity to sit in silence. I've found that some of the most meaningful words are the ones that have felt trapped inside my head, and when I was finally able to write about the nature of these words, I was exploring an entirely different part of myself I didn't know existed. Explore with me, the curiosities and natures of silence, and what it means to write about things that we would never otherwise say out loud.

O1C.2 *Dear You*

**Author(s):** Emily Schwartz

**Faculty Mentor:** Mike Shea

**Department:** English

**Abstract:** "Dear You" is a piece of flash fiction written for my fiction writing class. It tells the story of four friends filming a scene from *Of Mice and Men* for a school assignment. There is a caveat: the four get into a car crash the following day, killing three. The story is told by one of the victims and is addressing the single survivor.

O1C.3 *Heirloom*

**Author(s):** Christopher Durand

**Faculty Mentor:** Rachel Furey

**Department:** English

**Abstract:** "Heirloom" is a flash fiction story about living with and escaping generational trauma. We see our main character struggling with an heirloom in his family, a gun, passed down to him from his brother. We see his journey as he wrestles with the heirloom and his own trauma that was also passed down to him from past generations.

O1C.4 *"She is dangerous!": Madwomen and Rebellion in Mary Elizabeth Braddon's Lady Audley's Secret and Jean Rhys's Wide Sargasso Sea*

**Author(s):** Olivia Stamp

**Faculty Mentor:** Vara Neverow

**Department:** English

**Abstract:** The trope of the madwoman in literature often obscures the ways in which "madness" is a cover or punishment for behavior that society considers subversive, rebellious, and dangerous. In *Lady Audley's Secret* by Mary Elizabeth Braddon and *Wide Sargasso Sea* by Jean Rhys, the oppression that both women experience in Victorian society drives both to act in a way that upends cultural expectations of femininity and is therefore deemed "mad". This paper explores the ways in which Braddon and Rhys show that their female characters are punished with the label of insanity rather than exhibiting true mental illness, and the critique this makes about Victorian society and reader's expectations. In *Lady Audley's Secret*, Braddon takes a character whose deeply flawed, criminal behavior is rationally pursued as a means of escape from a life of poverty. Similarly, Rhys's rehabilitation of the mad wife from *Jane Eyre*, Bertha Antoinetta Mason, exposes the prejudices of the original text and gives the character a means of expressing her rage at the injustices she endures.

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**9:45 – 12:00 p.m. | Oral Presentations – Session 1D**

*ASC Room 311*

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O1D.1 *Lyrics as Literature: Mitski & the Art of Songwriting*

**Author(s):** Chaniya Jackson

**Faculty Mentor:** Melissa Talhelm

**Department:** Psychology

**Abstract:** This panel includes a presentation on lyrics in the form of literature. This project was completed under the Creative Drive course, ENG 209--Lyrics as Literature, which investigates the craft of lyric writing. My deep-dive presentation on singer-songwriter, Mitski, will include a brief introduction on her background and an extended focus on her creative process, storytelling, structure of lyrics, and the analysis of the songwriting craft. Following an explanation on Mitski's thematic patterns and lyrical craft of the work, I will also provide one exemplar song to better highlight how this songwriter applies narrative and creative identity within her songwriting. Any remaining time will be used for questions for the panel.

O1D.2 *Lyrics as Literature: An Analysis of Taylor Swift*

**Author(s):** Amanda Aitro

**Faculty Mentor:** Melissa Talhelm

**Department:** Communication Disorders

**Abstract:** For my presentation I analyzed two bodies of work by Taylor Swift and uncovered thematic and lyrical patterns. This is accompanied by an exemplar song further showcasing my findings

O1D.3 *The Shoes of a Madman*

**Author(s):** Tess Peters

**Faculty Mentor:** Michael Shea

**Department:** English

**Abstract:** From Act 1 to Act 5 of Shakespeare's *Hamlet*, readers are met with continuous literary devices. However, there's one particular passage that truly overflows with literary devices. In Act 2 Scene 2 of *Hamlet*, Shakespeare crafts a very complex passage. This complex passage occupies lines 89-129. These lines display Polonius chatting with The King and Queen about a letter that Hamlet gave to Ophelia. Throughout their interaction, Shakespeare continuously uses literary devices. "What is Shakespeare doing with these literary devices?" you may ask. These literary devices aid Shakespeare's ability to put the audience in the shoes of a madman. More specifically, Shakespeare attempts to put audience members into the shoes of a madman with this passage through the use of repetition, anaphora, shared lines, personification, and irony.

O1D.4 *The "To be or not to be" Soliloquy and its Hidden Meanings*

**Author(s):** Ava Krajewski

**Faculty Mentor:** Michael Shea

**Department:** English

**Abstract:** One of the most famous lines in Shakespeare's repertoire, "To be or not to be" (3.1.55), comes from the famous soliloquy that Hamlet gives during the play *Hamlet*. The speech is seen as one of the most influential pieces of poetry because of the context and weight that it holds. Hamlet is giving this soliloquy as he is debating suicide following his uncle murdering his father, the king, and taking the crown. Hamlet has been attempting to piece the story together to prove that it was his uncle. But in doing so, Hamlet goes mad, showing signs of mental illness and insanity. He is pushed to debate taking his own life as he is caught in the middle of these royal escapades. The "To be or not to be" (3.1.55) soliloquy is full of different interpretive significance that Shakespeare put in it to hide different messages surrounding Hamlet's mental health and the conflicting situation that he is currently in.

O1D.5 *Daddy Daughter Devotion and Demise*

**Author(s):** Xia'ian Carrasco

**Faculty Mentor:** Michael Shea

**Department:** English

**Abstract:** Upon a deeper review of William Shakespeare's *Hamlet*, readers can explore various interpretations. Depending on an individual's depth of analysis, readers can decide what side of Shakespeare they're getting-- is Hamlet a play about foolery and deceit? Or is Hamlet about the effect of family relationships and marriage? Then again, Hamlet may not be interpreted as any of the above. However, in Act 2 scene 2, the use of parallelism, repetition, and caesura between lines 89 and 129 provides evidence that the father-daughter relationship between Polonius and Ophelia brings awareness to Hamlet's psychotic break. It is this tethered, inimitable bond between the father and daughter duo that drives the speech Polonius gives to the King and Queen regarding Hamlet's madness. Lines 89 through 129 emphasize how essential the relationship between Ophelia and Polonius is to Hamlet in its entirety.



**Social and Political Histories: A History Seminar Roundtable |**

- O1E.1 *The Evolution of the U.S. Filibuster and its Impact on American Politics*  
**Author(s):** Jami Anderson  
**Faculty Mentor:** Siobhan Carter-David  
**Department:** History  
**Abstract:** My presentation will present my research on the evolution of the U.S. Senate Filibuster based on the changing rules and procedures.
- O1E.2 *Race and Gender in Vietnam War Correspondence*  
**Author(s):** Stephanie Sorrentino  
**Faculty Mentor:** Siobhan Carter-David  
**Department:** History  
**Abstract:** A dive into varying Vietnam War correspondents and how their work changed the public perception of the war in the United States.
- O1E.3 *Soldiers Trauma and the Outlook on the Mental Health of Veterans from WWII to the War in the Middle East*  
**Author(s):** Samuel Daher  
**Faculty Mentor:** Siobhan Carter-David  
**Department:** History  
**Abstract:** I am researching the difference in mental health among veterans from World War Two and the War on Terror in the Middle East and also the outlook on these soldiers back in their home country.
- O1E.4 *What's Birth Control Got to Do with It? A Look into the Flapper Feminist Movement and Why it Sent the Patriarchy into a Tailspin*  
**Author(s):** Ashley Fernandes  
**Faculty Mentor:** Siobhan Carter-David  
**Department:** History  
**Abstract:** The feminist flapper movement of the 1920's in America was a crucial moment for women that challenged the traditional gender roles and promoted sexual liberation and autonomy for women. My thesis argues that the emergence of birth control was a catalyst for the flapper movement. Birth control provided for women the ability to explore their sexuality without the risk of becoming pregnant and tied to a man. Through my analysis of film and literature, I will explore how this key factor in women's liberation was portrayed and how the male population influenced attitudes regarding societal roles of women and gender equality.
- O1E.5 *News Article Coverage of the Civil Rights Movement*  
**Author(s):** Luis Calderon  
**Faculty Mentor:** Siobhan Carter-David  
**Department:** History  
**Abstract:** This paper will examine coverage of key events of the Civil Right Movement by comparing and contrasting the reporting of mainstream and African American print media.
- O1E.6 *Deceptive Advertising on Smoking*  
**Author(s):** Marie Connors  
**Faculty Mentor:** Siobhan Carter-David  
**Department:** History  
**Abstract:** Using cigarette advertisements and published reports as primary sources, this paper will address the history of tobacco companies' marketing and their ploys to lure the public into smoking.

P1.1 *Geochemical and Sedimentological Investigation of Possible Devonian-Mississippian Glaciation in the Appalachian Basin, Pennsylvania*

**Author(s):** Heather Vollhardt

**Faculty Mentor:** Nicholas Fedorchuk

**Department:** Earth Science

**Abstract:** The Late Paleozoic Ice Age (LPIA) was the last major icehouse climate (low CO<sub>2</sub>, glaciers at low paleolatitudes) in Earth's history before the present Late Cenozoic Icehouse, and it lasted from the Devonian Period (Famennian) until the late Permian (Wuchiapingian). This makes the LPIA an analog for understanding today's climate. The majority of glaciation during the LPIA occurred on the southern supercontinent of Gondwana. However, there has been evidence described for Devonian-Mississippian alpine glaciation in the Appalachian Basin, which was located in the paleotropics. The purpose of my research is to look for evidence of glaciation in central Pennsylvania during the LPIA and to characterize the environments and paleoclimate. Several locations were visited across central Pennsylvania and stratigraphic sections were measured. Samples were collected for analysis by X-Ray Fluorescence (XRF) and Inductively-Coupled-Plasma Mass Spectrometry (ICP-MS) at Michigan State University. Geochemical data was used to determine the chemical weathering and provenance of the Catskill, Specht Kopf/Rockwell, and Pocono Formations. Preliminary results suggest that chemical weathering of the landscape remained consistently high across all three formations, typical for temperate or humid conditions. Additionally, there was little change in the provenance of the sediments between formations/locations. This may suggest that if glaciation occurred, it was not as widespread as previously reported. No direct sedimentological evidence of glaciation was observed and diamictites were likely formed by debris flows. However, the transition in environments from meandering to braided streams may suggest a change in paleoclimate (possibly related to distal glaciation) or tectonism.

P1.2 *Preliminary Treatment Fidelity of a Cross-age Dialogic Reading Intervention*

**Author(s):** Karlos J. Mate Piovanetti, Madison Ledford, Sarah Masotta

**Mentor:** Cheryl Durwin

**Format:** Poster Presentation

**Abstract:** This pilot study explores whether a shared book-reading approach—Dialogic Reading with Integrated Vocabulary Enrichment (DRIVE)—can be implemented as a cross-age intervention in schools. DRIVE encourages the development of vocabulary and comprehension using strategies summarized by the acronym, EMPOWERED. In previous studies, a total of two hours of intervention (10-minute sessions over 6 weeks), in which an undergraduate student individually read to at-risk first or second graders, yielded improvement in reading comprehension. Findings from a pilot study last summer with ten children from the community indicated that it is feasible to use DRIVE as a cross-age intervention. This allowed us to plan and implement a larger study in a Title I school during the 2022-2023 school year. Six fifth graders and eight sixth graders (called Big Buddies) were trained in small groups to use DRIVE over 2-3 sessions (about 20-30 minutes each). They are currently individually reading to first graders (Little Buddies; n = 10) using the approach. Because the project is ongoing, we will be reporting treatment fidelity data (frequencies with which EMPOWERED strategies were used) during the small-group Big Buddy training and during the first few weeks of paired reading sessions. Evaluation of treatment fidelity is an important step in intervention research; documentation of adherence to the protocol is necessary before evaluating whether older and younger children involved in the cross-age intervention improved from pretest to post-test in reading outcomes compared to typically-achieving peers who were not selected.

P1.3 *The Impact of the Gut Microbiome on Pathogenesis of S. Aureus Using a C. Elegans Model*

**Author(s):** Sydney Rossi

**Faculty Mentor:** Michael Fisher

**Department:** Biology

**Abstract:** The gut microbiome, which is the largest and most diverse part of the human microbiota, plays a role in many important metabolic functions including resistance to pathogens. This resistance is made possible by commensal-pathogen interactions of strains found in the healthy gut microbiota such as pH regulation and out-competing pathogens for vital resources. Having a thorough understanding of host-pathogen interactions involving the microbiome is a potential strategy to combat the rise in antibiotic resistant strains of bacteria and develop alternative supplemental therapies to reduce the overuse of antibiotics. The bacterial species *Staphylococcus aureus* is one pathogen which has not been thoroughly studied in terms of its interactions with the microbiome. *S. aureus* is the most medically important strain in the *Staphylococcus* genus, as it is the culprit for many hospital and community-acquired infections with concerning rates of antibiotic resistance. This work utilizes *C. elegans* as a model to explore

the impacts of the microbiome on pathogenesis of *S. aureus*, and determine if the microbiome plays a protective role by studying the difference in worm longevity when infected with *S. aureus* with and without a microbiome.

P1.4 *Anxiety, Feelings of Belonging, and Utilization of Academic Resources in First Generation Students*

**Author(s):** Briana Perigyi

**Faculty Mentor:** Scott Jackson

**Department:** Psychology

**Abstract:** First-generation college students (FGCS) are individuals whose parents or guardians did not obtain a four-year college degree. National statistics suggest that approximately one-third of college students are FGCS, but these students graduate at lower rates than their peers. This study aimed to explore potential underlying issues of this problem. This research examined undergraduate student responses to nine items from the Southern Experience Survey from 2019-2022 (N= 1913) associated with anxiety, feelings of belonging, and utilization of academic success resources. Controlling for potential confounding variables (gender and race/ethnicity), a series of Ordinal Linear Regression analyses were performed to test for differences between FGCS and non-FGCS students across these nine survey items. Based on the findings of these analyses, a number of statistically significant ( $p < .05$ ) differences were noted between the examined FGCS and non-FGCS college populations. FGCS reported significantly higher levels of anxiety regarding coursework, anxiety-provoking academic experiences (e.g., answering questions during lectures or receiving negative feedback on papers), and social anxiety related to approaching professors. Results also indicated that FGCS were significantly more likely to utilize academic success resources (i.e., Academic Success Center) and were overall more concerned about their academic performance compared to non-FGCS. Additional items were approaching statistical significance related to SCSU support systems and problem-solving strategies that warrant further investigation. Conducting this research is imperative to understanding FGCS experiences at Southern. Results from this research can be used to better support Southern's community of FGCS. Limitations and future directions will be discussed.

P1.5 *Characterization of the Adsorptive Properties of Biochar for Direct Air Capture of CO<sub>2</sub>*

**Author(s):** Jennifer Moses

**Faculty Mentor:** Ericka Barnes

**Department:** Chemistry

**Abstract:** Direct air capture (DAC) technologies are receiving increasing attention due to their potential to mitigate climate change through the removal of legacy CO directly from the atmosphere. The efficiency of the DAC system is predicated on the choice of sorbent material, for which it must be energetically favorable to adsorb CO molecules in the ambient. Traditionally, the thermodynamics of DAC are determined experimentally; however, this study aims to investigate whether first-principles computational methods can be used to calculate these quantities using biochar, a carbonaceous material derived from the pyrolysis of biomass, as a model system. In particular, density functional theory studies of binding energies and adsorption enthalpies of CO are calculated using a variable-size, hydrogen-terminated graphene sheet to approximate biochar. The structure and relative stabilities of various adsorption configurations of CO are investigated using the B3LYP, APFD, M06-2x, M08-HX, TPSSh, and HSE06 hybrid functionals paired with the 6-31+G(d,p) and 6-311+G(2d,p) basis sets. Preliminary microscopy (TEM/SEM), Brunauer-Emmett-Teller (BET), and X-Ray Diffraction (XRD) results used to support these calculations will also be presented.

P1.6 *The Effect of Personal Care Attendants on the Psychosocial Wellbeing of Parent Caregivers of Adults with Disabilities in Connecticut*

**Author(s):** Kathleen Griffin

**Faculty Mentor:** Zara DeLuca

**Department:** Communication Disorders

**Abstract:** The present study investigated the effect that personal care attendants have on the psychosocial and emotional wellbeing of Connecticut parent caregivers of adults with disabilities. Participants (n=53) were asked to respond to a 25-question survey that was distributed via social media, email, and word of mouth. Participants responded to questions about their experiences with depression, anxiety, and feelings of isolation in relation to their experiences as parent caregivers and the services their child with disabilities received prior to turning 22 and after 22. Respondents also ranked the effectiveness of various support services at meeting their needs and their children's needs, and their experience with the personal care attendant (PCA) services through the state of Connecticut. Participants reported general dissatisfaction with access to quality service for their child, general negative experience with these support services and related these experiences to negative effects on their wellbeing. Participants who reported receiving support services from a PCA, however, reported experiencing general satisfaction with the service and its ability to meet their child's needs and their needs as parent caregivers. Results suggest that the wellbeing of parent

caregivers is deeply affected by the supports their child receives, and thus, more research is needed to understand this interaction and take positive steps in advocating for the needs of parent caregivers.

P1.7 *Homelessness Documentary*

**Author(s):** Leah Coleman, Taryn Simmons

**Faculty Mentor:** Derek Taylor

**Department:** Communication

**Abstract:** This film documents the ongoing issues regarding homelessness within the New Haven community. We have been getting footage of recent events that have occurred in New Haven in regard to homelessness, such as the recent news of Tent City. In this documentary, we are hoping to raise awareness and educate the general public on what homelessness can look like and ways we all can help those who suffer from it. We reached out to a couple of different shelters around the area of New Haven for interviews. We have also created flyers that got distributed out around campus to promote the event further. There have been social media posts created to inform students about the issue we are bringing awareness to. Our film is supposed to show the effect of homelessness from the people that experience it and the people that work at shelters in town to try to help the problem. Our film is going to attempt to first show the problem of homelessness and then how the problem could be solved.

P1.8 *Business, Finance, and Investment Table Talks*

**Author(s):** Robert Zapor, Noah Farnham

**Faculty Mentor:** Dana Rogers

**Department:** Communication

**Abstract:** As members of the Communication Capstone class, we were challenged to create a social justice related project. We used marketing, project management, graphic design, and networking skills developed through our studies as communication majors to plan and develop an on-campus event focused on financial education. We brought in professional guest speakers who specialize in budgeting, investing, and entrepreneurship to give Southern students financial guidance. Our ultimate goal was to provide meaningful financial education to those that have not yet received or been offered such education. Graphic design was used to create promotional flyers along with a website in which students can access event information along with additional financial education that they also could benefit from.

P1.9 *Examining the Effects of Prenatal Marijuana Exposure - Across the Generations*

**Author(s):** Colleen Wilson, Bri Perigyi, Rachel Jeffrey

**Faculty Mentor:** Kelly Bordner

**Department:** Psychology

**Abstract:** The use of marijuana increases as it is legalized. It is estimated that marijuana use increases by 20% in states where it is legalized. As of April 2023, marijuana has been fully legalized in 27 U.S. states and is legal for medicinal use in 38 states, 3 territories, and the District of Columbia. Our current project is designed to examine the effects of marijuana use in an especially vulnerable and understudied population – the developing fetus. We are using a rodent model to examine behavioral effects in animals that were exposed to marijuana during the earliest days of gestation, a time equivalent to the first 4 weeks of pregnancy in humans, when most women are unaware that they had conceived. Pregnant rats were administered delta-9-tetrahydrocannabinol, the main psychoactive cannabinoid found in marijuana, during the first 5 days of pregnancy or the last. Offspring were later tested for changes in anxiety-like behavior and social interaction. Following completion of these behavioral tests, offspring were bred to create a second generation – the “grandchildren” of females exposed to the drug while pregnant. These studies are still in progress, now in the third generation, or the great-grandchildren of the initial cohort of animals. We aim to present the methodology and experimental design of this study, which will be among the first to examine multigenerational effects of prenatal marijuana use.

P1.10 *Genetically Manipulating and Testing Membrane Excitability at the Drosophila Neuromuscular Junction*

**Author(s):** Lauryn Giuliano

**Faculty Mentor:** Mikolaj Sulkowski

**Department:** Psychology

**Abstract:** Synaptic activity is the basis of neuronal communication and function. Changes in a neuron’s electrochemical environment can affect synaptic function and morphology. This can be linked to secondary changes in neural network structure and plasticity, which are crucial for maintaining adaptive neural functioning. However, possible molecular mechanisms by which neurons recognize, respond, and adapt to acute changes in membrane voltage to maintain electrical homeostasis have not been fully elucidated. Bone morphogenic protein (BMP) signaling is a pathway of interest, as it relays information regarding postsynaptic neuronal activity to the respective presynaptic neurons to modulate synaptic development and functioning. Previous work has suggested that pMad, the effector molecule of BMP signaling, may function as a sensor for changes in membrane voltage. Before investigating which

types of voltage changes BMP signaling may respond to, methods for successfully changing membrane excitability must first be explored. To do so, potassium ion channel or glutamate receptor expression in muscles was altered using a *Drosophila melanogaster* model and basic genetics. Intracellular electrophysiological recordings of miniature excitatory junction potentials (mEJPs)—the cell's spontaneous, brief depolarizations in response to the release of a single vesicle of excitatory neurotransmitters—were performed. Data will be analyzed to compare the amplitude and frequency of mEJPs of each genetic cross with those of wild type controls. Membrane time constants—the time it takes for a potential to fall 63% of the way to its resting value when conducting a membrane quality test—will also be compared.

P1.11 *What Are You Holding Onto? Holdfast Morphological Variation in Saccharina Latissima*

**Author(s):** Mia Varney, Carla Narvaez Diaz

**Faculty Mentor:** Sean Grace

**Department:** Biology

**Abstract:** Hapteral holdfast are responsible for anchoring kelp to their substrate. This important function has been affected traditionally by biotic and abiotic factors (*Modiolus modiolus*, *Mytilus edulis*, turf macroalgae and wave exposure) increasing the likelihood of dislodgement. One recent artificial area of attachment and of interest for aquaculture is twine/rope. Here we examine morphological characteristics of kelp holdfasts collected in situ at Fort Wetherill, Jamestown, RI, and provided to us from New England Sea Farms (Guilford, CT). Specifically, the number of bifurcations, stipe diameter and weight of holdfasts from three natural attachment substrates (rock, turf algae, and grouped), and one artificial substrate (twine/rope for aquaculture). All kelp holdfasts characteristics examined were statistically similar when attached to rock or twine/rope substrates, but both differed significantly from those attached to turf habitats or attached in a group of holdfasts. We conclude that kelp grown in aquaculture on twine/rope maintains the most natural aspect of the kelp hapteral holdfast as they were most similar to those collected from their natural rock substrate.

P1.12 *Feminism: Ideology or Social Movement?*

**Author(s):** Zoé Pringle, Kevin McGuire

**Faculty Mentor:** Jessica Suckle-Nelson

**Department:** Psychology

**Abstract:** How one defines feminism varies according to many factors, including age and gender. Although it has been examined in various ways over the past few decades, the willingness to identify as a feminist—especially among men—still seems to be a statement fraught with stereotypes, whether it is a fear of being stigmatized or simply misinformation regarding feminism. This class project will explore the descriptions of feminism, particularly by college students, both graduate and undergraduate. The contribution of graduate students in this sample is unique as most studies on college students only examine undergraduates.

P1.13 *Feeling the Spirit: Definitions of Spirituality After a Course Exploration*

**Author(s):** Vanity Dennis, Jarett Talarczyk

**Faculty Mentor:** Jessica Suckle-Nelson

**Department:** Psychology

**Abstract:** Much of the research on spirituality and its meanings involve participants who have not had any formal education on the topic of spirituality. Most of the studies uncovered that examined how people define spirituality were geared more toward spirituality in either the workplace or the medical field (e.g., spiritual needs of patients). However, literature on how college students define spirituality remains sparse. This class project examined the meanings of spirituality among college students who completed a class in the psychology of spirituality, where spirituality was examined in light of various factors that affect people psychologically throughout their lives.

P1.14 *Hymn and Her: A Look into Feminism in Clergywomen*

**Author(s):** Philip Rao, Jonathan Elder, Gillan Murty

**Faculty Mentor:** Jessica Suckle-Nelson

**Department:** Psychology

**Abstract:** Clergywomen, today, can still be considered social activists, fighting for their right to follow a calling many believe to be from God. However, they still receive much resistance to their pastoral positions from sources both inside and outside of the church hierarchy (Suckle, 2005). The combination of religion and feminism is not a new idea; feminism is a topic often scrutinized. However, definitions can be ambiguous or distorted because of the changing role of women within many religions. This class project offered an opportunity to explore definitions of feminism from the perspective of Christian clergywomen. Thus, we were able to examine how both a feminist identity and a religious/spiritual identity may influence one's overall self-identity.

- P1.15 *Examination of Tattoo Meanings*  
**Author(s):** Ricardo Milbin, Isaia Pardo, Anthony Godfrey, Rease Pouncey, Ashley Becker  
**Faculty Mentor:** Jessica Suckle-Nelson  
**Department:** Psychology  
**Abstract:** Historically associated in our country with bikers, prisoners, and military soldiers, the people who are getting tattooed today are from a diverse range of groups. Approximately 14% of the US population admitting to having at least one tattoo prior to 2000; comparatively, approximately 40% of this population reported having at least one tattoo (Statista, 2022). As such, it might be said that tattoos have become a more acceptable form of body modification art. However, people with tattoos are still stigmatized. At the same time, a growing number of studies have indicated that the differences between the tattooed and non-tattooed are steadily decreasing, and positive stereotypes have also been created (Schlösser et al., 2020). The diversity in reasons why one gets a tattoo have also increased over the past few decades, both from the perspectives of tattooed individuals as well as those around them. This project qualitatively explored the meaning of tattoos and why people are choosing to get them.
- P1.16 *Gods, Higher Powers, and the Universe: Definitions of Spirituality Among Adults in New England*  
**Author(s):** Taylor Downs, Gabriel Teles, Keith Posner  
**Faculty Mentor:** Jessica Suckle-Nelson  
**Department:** Psychology  
**Abstract:** Most studies on the meanings of spirituality among students focus on its influence on their morality, their personality, or are guided by concepts in either the medical/nursing field, business, or the workplace. Compared to religion, spirituality tends to be a more subjective construct and can be based on both non-religious and/or church-centered personal experiences that make life richer and more meaningful (James et al. 2012; Lockenhoff et al., 2009). However, the literature focusing specifically on definitions and meanings of spirituality for college students or those who are younger is sparse. Even one of the few recent studies on this topic still focused on the impact of spirituality, but not necessarily what spirituality actually was (Rockenbach et al., 2015). In addition, a lot of the literature connects spirituality to religiosity, thereby excluding atheists and agnostics. Because examining spirituality has resulted in various—and sometimes, incompatible—definitions and meanings, this study will serve to further clarify definitions of spirituality among students. This class project served to further explore and support the existing literature’s descriptions of spirituality for college students.
- P1.17 *Comparison of Genotype Phasing Algorithms*  
**Author(s):** Christa Lehr, Vinaydeep Singh  
**Faculty Mentor:** Sahar Al Seesi  
**Department:** Computer Science  
**Abstract:** The human genome is a diploid genome, which means there are two copies of each chromosome, except for the X and Y chromosomes. There are two copies (alleles) of each of the genes laying on these chromosomes. Allele Specific Expression Estimation (ASE) is the problem of estimating the expression level of each gene at the allele level, which means finding whether one of the two alleles or both alleles of a gene are actively being transcribed into RNA to generate proteins and whether they are expressed at the same or different levels. Transcriptome sequencing is used to address this problem. The analysis starts by comparing the sequencing data to a reference genome that represents all individuals in a species, but it does not completely match each individual, given variations between individuals. The reference genome is haploid, including the sequence of one copy of each chromosome. This poses challenges in addressing ASE, where we are interested in identifying difference of expression between the gene alleles coming from the diploid genome. One way to address this issue is through creating a diploid reference from the individual being studied, through first finding where and how this individual genome vary from the reference genome. Then phasing these variations arranges the alleles at different positions into two groups to allow us to create the diploid reference of the individual. In this research project, we are comparing phasing algorithms. We will report on execution requirements and accuracy of results of the multiple phasing algorithms.
- P1.18 *“Wild Bill” Donovan: The Individual Who Created American Intelligence*  
**Author(s):** Ryan Woods  
**Faculty Mentor:** Troy Paddock  
**Department:** History  
**Abstract:** William Joseph “Wild Bill” Donovan was a well-accomplished American patriot who held multiple professions, serving as an American soldier, intelligence officer, lawyer, and diplomat. A highly decorated World War I veteran, Donovan was the only soldier to be awarded all the following medals: the Medal of Honor, the Distinguished Cross, the Distinguished Service Medal, and the National Security Medal. Additionally, he received the Silver Star, the Purple Heart, and multiple other medals from numerous countries. Donovan is best known for his role as head of the Office of Strategic Services, referred to as the O.S.S. The predecessor to the Central Intelligence Agency (C.I.A.),

the O.S.S. was a critical and essential instrument in the fight against Germany during the Second World War. His creation of espionage and sabotage schools greatly enhanced the effectiveness of field operatives and the utilization of technology. With no former formal spy agency existing in the United States, Donovan paved the way for American intelligence to be the superpower it is today.

P1.19 *Examining Social Physique Anxiety in PE and Participation*

**Author(s):** Jordan Cervantes

**Faculty Mentor:** Christopher Budnick

**Department:** Psychology

**Abstract:** Rationale: Adolescents with social physique anxiety (SPA) exhibit body image and appearance concerns. In physical education (PE), appearance reflects competence. Certain PE classes, such as weightlifting, focus on body appearance. Thus, I predict SPA and PE environments to predict perceived physical competence frustration. Participation is often required in PE, which impedes autonomy. Therefore, I predict autonomy frustration to also occur. Additionally, need frustration positively associates with amotivation and controlled motivation, which results in low participation/participation avoidance. Therefore, I predict need frustration to cause low participation/ participation avoidance. Considering this, I predict a sequential mediation pathway such that SPA leads to need frustration, which then predicts motivation type that influences participation. Methods: Participants will consist of n = 200 New Haven Public High School students. Participants will report their SPA, need frustration, motivation style, and demographic information three times over a two-month period. Their PE teachers (n = 12) will observe and rate their participation levels, attendance, participation avoidance, and reasons for lack of participation during the two-month period. Results & Conclusion: Research design is ongoing. Data collection will occur during the 2023-2024 academic year. Once collected, data will be cleaned, and analysis assumptions checked. Structural equation models will test the predicted sequential mediation models. I expect adolescents with high SPA in a fitness center will report high need frustration, resulting in amotivation or controlled motivation and lower participation/participation avoidance. Understanding need frustration's effects on motivation in adolescents can lead to interventions for increasing physical activity in PE.

P1.20 *“Kraken” into the Beverage Industry: A Market Analysis for Kraken Seltzer*

**Author(s):** Noelle King

**Faculty Mentor:** C. Patrick Heidkamp

**Department:** Environmental Systems and Sustainability

**Abstract:** Kraken Seltzer is a sustainable, sugar kelp-based seltzer developed as a student innovation project during Project Blue's Summer 2021 Blue Economy fellowship. The project presented here is a case study aimed at assessing the optimal geographic market as well as the optimal scale of entry to position Kraken Seltzer in the consumer market. ArcGIS Business Analyst will be utilized to identify whether a Kraken Seltzer's pilot launch should take place at the local, regional, or national level. After the analysis we found that Kraken Seltzer should launch at a regional level. The case study and methodology employed are easily replicable for similar projects.

P1.21 *An Overview of Virtual Reality Simulation Sickness: Causes, Symptoms, and Prevention Strategies.*

**Author(s):** Ehsan Sumra, Joseph Delgado

**Faculty Mentor:** Hao Wu

**Department:** Computer Science

**Abstract:** Virtual Reality (VR) holds great potential for a range of applications. For example, researchers are currently exploring the use of VR in creating safety training procedures for high-risk industries, as well as surgical simulations and telesurgery. There are applications in research, medical fields, and other industries. However, VR applications can cause side effects such as disorientation, nausea, and oculomotor dysfunction. This is particularly problematic for the usage of VR in training and medicine, as users are unable to remain in these environments for extended periods due to the onset of simulator sickness. Longer periods of unimpeded VR usage can provide benefits such as increased immersion and an expanded range of applications. VR has great potential for innovation and creativity in a wide range of industries. Therefore, it is important to understand the factors that cause simulator sickness. This paper surveys studies in this field and provides an understanding of the factors that can affect simulator sickness. The paper also provides insight into the work that is being done to reduce simulator sickness and highlights the emerging solutions to this issue.

P1.22 *Association Among Income Level, Life Satisfaction and Perceived Control*

**Author(s):** Faith DeRosa

**Faculty Mentor:** Katherine Marsland

**Department:** Psychology

**Abstract:** There is no doubt that money can get you far in life but at what cost. There is common saying that “money can't buy happiness.” Indeed, prior research suggests that the relationship between income and happiness may be non-

linear, with the highest levels of happiness experienced by those with moderate income levels compared to those with very low or very high-income levels (Wanberg et al., 2020). Building on this research, we examined the associations among income, life satisfaction and perceived control. Perceived control was measured using Lachman and Weavers (1998) perceived control scale. Life Satisfaction was measured with Deiner's (1985) satisfaction with life scale. Income was measured based on the income brackets suggested by Wanberg et al. (2020). Data were collected via an anonymous self-report survey as part of a project for a research methods class. As predicted, we found that there was a non-linear relationship between income and both perceived control and life satisfaction, with the highest levels of both perceived control and life satisfaction among those with moderate income level. In addition, we found that the association between perceived control and life satisfaction was strongest among those with moderate incomes. Results will be discussed in terms of the strengths and limitations of the study as well as implications for future research.

P1.23 *The Effects of Biased Training Data on Intersectional Classification Accuracy in Facial Analysis*

**Author(s):** Siddhi Suresh, Josh Riznyk, Harry L. Sanders, IV

**Faculty Mentor:** Winnie Yu

**Department:** Computer Science, Mathematics

**Abstract:** Facial analysis classifiers are being used frequently in a wide range of applications. From social media to law enforcement, algorithmic decision-making is often used to categorize people according to their phenotypes. Underperforming classifiers can subject individuals to bias and discrimination, which can produce undesirable results. The objective of this study is to analyze the impact of biased training data, versus impartial training data, on the performance of facial analysis classifiers. We employed FastAI as the deep learning framework, running ResNet50 (Residual Network 50) as the convolutional neural network model. We trained the model with both balanced and unbalanced datasets, experimented with various hyperparameters to optimize the classification accuracy and learning rate, and analyzed algorithm behaviors on various datasets, with and without fine-tuning, data augmentation, and regularization techniques. Using gender as the binary attribute for classification on a variety of facial image datasets, we evaluate the fairness of these algorithms by employing a P-value metric and comparing the outcomes of the algorithm's performance on classifying different intersectional categories, such as ethnicity. Our findings will shed light on how these algorithms respond to biased and unbiased training sets and determine the importance of using unbiased data when creating facial analysis classifiers.

P1.24 *Dr. Stephen Collins Research & Photography: An Exhibition of Select Papers and Photographs from the Collins Family Papers collection in the SCSU Archives.*

**Author(s):** Mary Pelkey

**Faculty Mentor:** C. Michele Thompson

**Department:** History

**Abstract:** Housed in the Southern CT State University Archives, the Collins Family Papers is a vast collection of documents, manuscripts, photographs, and other records. Donated by Barrie Collins, this collection provides a window into the career and personal life of Stephen Collins, a former biology professor at Southern and prominent figure in Connecticut ecology. Collins was fundamental in the development of West Rock Ridge State Park. This selection of photographs exemplifies his passion for photography and nature, and his dedication to the local community.

P1.25 *A Non-quiescent Coral's Diet in the Winter, How Astrangia!*

**Author(s):** Shatha Khashab, Alina Tran

**Faculty Mentor:** Sean Grace

**Department:** Biology

**Abstract:** The temperate scleractinian coral *Astrangia poculata* experiences quiescence (or dormancy) in winter when water temperatures range from 3.4-4.3°C. Dormancy shows as a coral with pulled in tentacles and a characteristic puffed out oral plate, which usually lasts until spring when water temperatures rise above 6.0-8.5°C. At that time, the coral's tentacles re-emerge and can actively capture prey from the water column. For the first time this winter, water temperatures did not reach the degree that initiates coral dormancy, and it was observed that coral tentacles were out and perhaps actively feeding in January and February. Since no record ever of what a non-quiescent coral feeds on has been documented or if there is food availability during the winter, 35 corals and a plankton sample was collected. Coral guts were dissected to identify prey. Plankton samples were sorted, identified, and compared to what was present in the guts. Additionally, Shannon-Weiner Indices were determined for the plankton sample to provide a measure of the diversity within the plankton (prey). Results indicate that corals feed throughout the winter when they do not experience dormancy and that plankton and substratum associated fauna are available to them. This is the first record of winter feeding in the temperate coral *Astrangia poculata* and the first time on record that dormancy was not observed in the winter indicating that climate change and warmer temperatures may be affecting the normal cycle documented for this coral species.



- P1.26 *Diversifying the New England seaweed industry: Investigating Farmer Feasibility of Tank Culturing Warm-water Species, Gracilaria tikvahiae*  
**Author(s):** Katie Kost  
**Faculty Mentor:** Emma Cross  
**Department:** Environmental Systems and Sustainability  
**Abstract:** As climate change is warming our oceans, commercial production of additional native seaweed species is needed to maximize productivity, grow the industry and diversify income. *Gracilaria tikvahiae* is a native warm-water species, which naturally grows best in 20-28°C seawater temperatures in nutrient rich areas along the East Coast U.S. This seaweed species also has high market appeal as a food product and also in the phycocollid industry. *Gracilaria tikvahiae* has been successfully cultured for decades in Asia, however, it is not currently commercially grown in the U.S. This research is investigating different light sources, temperature regimes and food sources to determine the ideal tank culturing conditions for *Gracilaria tikvahiae* with a focus on practicalities for seaweed farmers. Specifically, we are culturing *Gracilaria tikvahiae* under natural light in a greenhouse and under LED lights in an indoor setting to determine which light source facilitates the fastest growth. In the greenhouse, temperatures naturally fluctuate throughout the day whereas temperatures are stable in the indoor setting at room temperature (21°C). Two commercially available food sources are also utilized; F/2 Algae Food in the indoor setting set up and EPIZYM-AGP in the greenhouse. This experiment is providing insights into the feasibility of commercially growing this economically viable warm-water seaweed species, which could supplement the dominant cold-water sugar kelp industry in New England as our oceans continue to warm with climate change.
- P1.27 *The Petasis-Borono Mannich Reaction*  
**Author(s):** Gillian Ofori-Ntiamoah, Todd Ryder  
**Faculty Mentor:** Todd Ryder  
**Department:** Biochemistry  
**Abstract:** This research aims to expand the scope of the Petasis borono-Mannich reaction by systematically exploring novel substrate combinations involving amines, ketones, and boronic acids. The study will initially focus on varying ketones with styrenyl boronic acid, followed by the investigation of alternative amines. Successful synthesis of novel products with an additional carbon substituent would be a significant advancement in the field, potentially finding applications in natural product synthesis or therapeutic analogs. This research will provide valuable insights into reaction mechanisms, substrate scope, and reaction conditions, enabling further exploration and synthetic applications.
- P1.28 *Identification of Novel Cholinesterase Inhibitors Through Methods in Silico and in Vitro*  
**Author(s):** Michael Gambardella  
**Faculty Mentor:** Jiong Dong Pang  
**Department:** Chemistry  
**Abstract:** Acetylcholinesterase (AChE) is a cholinergic enzyme responsible for the maintenance of synaptic plasticity and termination of neural activation via hydrolysis of the neurotransmitter acetylcholine. Butyrylcholinesterase (BChE) is another enzyme with a catalytic triad fit to hydrolyze esters of choline and acts as a bioscavenger for organophosphates. Both cholinesterases are located at the postsynaptic neuromuscular junction and share similarities in the amino acids situated within their respective active sites. Inhibitors of AChE and BChE have found use in the treatment of symptoms associated with Alzheimer's Disease or other neurodegenerative disorders by indirectly increasing the likelihood of voltage changes across the neuronal membrane. Through virtual screening methods, statistical analysis, and molecular dynamics simulations performed in silico, we report the identification of selective cholinesterase inhibitors. Inhibitors identified through computational methods are subject to in vitro kinetics experimentation to quantify the compounds' potency, elucidate their mechanism of inhibition, and confirm selective inhibition.
- P1.29 *Connecticut's Green Book: Sites of African American Travel and Community in the Jim Crow Era*  
**Author(s):** Daniella Occhineri  
**Faculty Mentor:** C. Michele Thompson  
**Department:** History  
**Abstract:** The Negro Motorist Green Book (known simply as the Green Book) was an annual guide which listed establishments welcoming to African American travelers during the Jim Crow Era. The Green Book was originally conceived by Victory Hugo Green and published from 1938 to 1964. During which African American travelers faced tremendous risk while on the road, from refusal of service, unreasoned arrest, and targeted acts of violence. While typically associated with the South, racial discrimination pervaded the Northern States as well. Thus, over the course of the Green Book's publication there were 124 businesses listed in the state of Connecticut. These establishments represented a full spectrum of amenities, including hotels, tourist homes, restaurants, gas stations, and beauty parlors. Most of Connecticut's Greenbook sites were located within major urban centers: Bridgeport, Hartford, New Haven,

New London, Stamford, and Waterbury; however, over half of these sites have been demolished, and very few are recognized through National Register of Historic Places. In 2023, Preservation Connecticut began the process of researching all extant sites listed in Connecticut's Greenbook. In which, case studies have allowed us to celebrate the Green Book's role in shaping African American experiences while travelling and learn about the broader impact these establishments had on the community. Information for these cases has been compiled through site visits, Sanborn Maps, City Directories, postcards, and other sources. At the conclusion of this project, all sites will be uploaded to "The Architecture of The Negro Travelers' Greenbook" website hosted by the University of Virginia.

P1.30 *Can Reduced Screenshot Increase Depression and Anxiety?*

**Author(s):** Adrienne Terrill

**Faculty Mentor:** Christopher J. Budnick

**Department:** Psychology

**Abstract:** Correlations between increased screentime and higher rates of depression and anxiety suggests that we should reduce our screentime. However, for those with pre-existing depression or anxiety, technology use may provide a coping mechanism to help attenuate symptoms and a sudden reduction in screen use may cause symptoms to increase. We propose a study to examine if subjects' scores on a depression and anxiety scale become more severe after reducing screentime on their phone. Subjects will be measured on a depression and anxiety scale and will download an app to measure their phone screentime for a week. Subjects will then be repeatedly and randomly assorted into two groups until two independent t-test will confirm that there are no significant differences between the groups in anxiety & depression scores and screen usage. One group will be asked to reduce their phone screentime in half for a week while the other group will receive no further instructions. After a week, all subjects will retake the anxiety and depression measure. Subjects in the non-reduce group who spontaneously reduced their screentime by at least 33% and subjects in the reduce group who did not reduce their screen time by at least 33% will be excluded. We will then look at the differences in depression and anxiety scores within each group and use an independent t-test to see if there is a difference of differences between the two groups. We predict screen time reduction will lead to increased measures of depression and anxiety.

P1.31 *Identification of Type 2 Taste Cells in Manatee Taste Buds Using PLC $\beta$ 2*

**Author(s):** Nina Byer

**Faculty Mentor:** Meghan Barboza

**Department:** Biology

**Abstract:** Mammals have the ability to detect five basic tastes: bitter, salty, sour, sweet, and umami. With these tastes, bitter taste helps to detect and prevent ingestion of toxins. While it is known that taste bud numbers are significant in manatee and human sensory systems, little is understood about the cellular mechanisms in manatees. Type 2 taste cells detect bitter and an important component of their mechanism of actions in PLC $\beta$ 2. In this study, type 2 taste cells were assessed for PLC $\beta$ 2 expression using immunohistochemistry (IHC). Tissue from the manatee tongue containing taste buds were sectioned on a microtome, and stained using IHC, against PLC $\beta$ 2, followed by observation with a microscope. The expectation was that IHC staining would identify the expressed protein, PLC $\beta$ 2 in the type 2 taste cell. The experiments were successful as the target antigen was recognized and bound, however, the correct area observed was not localized within type 2 taste cells. The IHC staining was successful outside of the taste cells. However, staining of taste cells was unsuccessful due to physical damage to the taste cells. Manatees have taste buds and type 2 taste cells; therefore modification of the protocol is needed. Following successful development of this new protocol, type 2 taste cells will be compared between sexes, ages, and causes of death for the manatee. Additionally, previous research determined that solitary chemosensory cells (SCCs) and type 2 taste cells are similar. The protocol developed will be used in future research on both manatee taste cells and SCCs.

P1.32 *The Petasis Reaction*

**Author(s):** Julia Grounds, Todd Ryder

**Faculty Mentor:** Todd Ryder

**Department:** Chemistry

**Abstract:** The Petasis reaction is a multicomponent process involving a carbonyl component (either an aldehyde or a ketone), a boronic acid, and an amine. Most Petasis reactions reported in the literature use aldehydes as the carbonyl substrate; very few have been carried out with ketones. This research seeks to expand the scope of the Petasis reaction to ketone substrates. In addition, we report the results of our efforts to develop an analytical method using HPLC/mass spectrometry to monitor reaction progress.

P1.33 *I-Smad activity in motor neurons is independent of type I BMP receptors*

**Author(s):** Ania Simoncek

**Faculty Mentor:** Mikolaj Sulkowski

**Department:** Biology

**Abstract:** Retrograde bone morphogenetic protein (BMP) signaling is a major way cells communicate to control growth and maintain homeostasis at the neuromuscular junction (NMJ). BMP signaling is executed through Smad activity. In addition to the effector R-Smads, there are inhibitory Smads (I-Smads), that suppress unnecessary BMP signaling. In *Drosophila*, the sole I-Smad is called Daughters against Dpp (Dad). Dad is reported to function by inhibiting the BMP receptor Thickveins (Tkv) to prevent the phosphorylation of the R-Smad, Mad. However, our preliminary results disagree with this hypothesis. If Dad works by inhibiting Tkv, which phosphorylates Mad, we would expect to see less pMad when Dad is overexpressed. Instead, when Dad is overexpressed, there is an abundance of pMad. For my thesis work, I will test an alternative hypothesis regarding the mechanism of Dad's function. We hypothesize that Dad competes for pMad with the Co-Smad, Medea. I will test this hypothesis by performing two sets of genetic crosses: I will co-expressing Medea and Dad, and measure the nuclear pMad levels. I will then co-express Medea, Dad, and TwitGFP, and measure the Twit-GFP expression. I will use the confocal microscope and ImageJ software to analyze the fluorescence. The genotypes will be compared to a control to determine the pMad and TwitGFP level. If Dad works by competing with Medea, when Medea is over-expressed with Dad we expect to see normal pMad levels and a rescue of the Twit-GRP expression because an increase in Medea will negate the increase in Dad.

P1.34 *Synthesis Process of MnO<sub>2</sub>-Biochar Composite Electrodes for Hybrid Supercapacitor Applications*

**Author(s):** Max Martone, Vanessa Adamski

**Faculty Mentor:** Christine Broadbridge

**Department:** Physics

**Abstract:** The demand to diversify the global energy portfolio to include more renewable sources has illustrated an acute and critical need for advancements in energy storage technology to mediate their inherent intermittent nature. Hybrid supercapacitors offer such a solution for a wide range of commercial and infrastructural energy applications, with great potential for fabrication utilizing cost-effective and environmentally benign materials. Previous studies have identified electrodes composed of biochar alongside MnO<sub>2</sub> (for non-Faradaic and Faradaic charge storage, respectively) as great potential candidates that fit this sustainability-driven profile. In this study, the preparation and synthesis procedure of pine-based biochar-MnO<sub>2</sub> hybrid electrodes was explored, with emphasis on determining correlation between various synthesis parameters and resulting performance. These parameters include active-mass of applied material and electrode size. Adjustments to fabrication techniques such as material application were also explored. The electrode surface area was quantified by BET surface analysis and the structure and composition using x-ray diffraction. The supercapacitive performances were investigated using cyclic voltammetry ranging from 3-200 mVs<sup>-1</sup> as well as galvanostatic charge-discharge tests at 0.5, 1.0, and 2.0 A/g. This data along with scanning and transmission electron microscopy data provide preliminary insights on the structure-property-performance relationship for this composite materials system. Additionally, this study proves vital in ensuring reproducibility in prior obtained results as well as consistency for inevitable future works.

AI.1 *Introspective Journey***Author(s):** Zachary Brocklehurst**Faculty Mentor:** Mia Brownell**Department:** Studio Art

**Abstract:** My presentation is about my senior thesis. Through my work I explore the ideas of solitude, stoicism, and religion, each of which have impacted my life in influential ways. Each one has provided me with important lessons that have influenced the way I choose to live my life. I believe that solitude is not a time of sorrow, but a time of productivity. Being in solitude allows one the best opportunity to reconnect with yourself and gives time for uninterrupted self-reflection. These moments of mental and emotional examination, I believe, are an important step in personal growth, and living in an age of constant stimulation and noise can make it challenging to achieve them. Stoicism has taught me the importance of self-improvement. It teaches that one should strive for constant improvement in one's character. This teaching has provided a strong sense of self-worth and allows me to look within myself and align my sense of inner peace. Religion has given me a relationship with God which has shown me how to love and be kind wholeheartedly. It is also a reminder that while self-improvement is important, I am not the only person or thing in this world and shouldn't allow my thoughts to be consumed solely by myself. I believe that all three of these are interconnected and moments of solitude allow for the other two to strengthen and flourish.

AI.2 *Reflections Of a Man***Author(s):** James Olvera**Faculty Mentor:** Jeremy Chandler**Department:** Photography

**Abstract:** Self-portraiture bares a sense of nudity not many people are willing to share with the world. As a self-conscious introvert I find it difficult to express emotions. I'm a constant, neither high nor low, and it takes time for someone to understand me. With art I can remove that barrier of anxiety of the outside world, it's me with limitless time and ways to tell my story at the pace I need without instant judgement. This installation is finding that balance within myself. There's a sense of tension and peace it's the duality of everyday life I live that I impose in this installation. There are moments where I want to cease to exist and moments where I'm at peace within the world around me. My art places you in many of the same locations that I experienced these emotions. There is a contrast in imagery that each tell individual stories but together speak to the person I was, the person I am, and the person I am becoming.

AI.3 *It's All a Part of The Process***Author(s):** Samantha Scott**Faculty Mentor:** Rachael A. Vaters-Carr**Department:** Studio Art

**Abstract:** My artistic practice centers around creating 2D and 3D artwork that is deeply personal, allowing viewers a glimpse into my inner world while also inviting them to explore their own inner experiences. Through my work, I am constantly reflecting on my past artistic endeavors while also exploring new avenues for my future. To create a unique aesthetic, I utilize two distinct abstracted forms in my work. I incorporate naturalistic forms that are fluid and amorphous, with irregular shapes that appear to transform and mutate. These forms have a tendency to invade and take over the geometric shapes that I also use. In contrast, my geometric forms are highly structured and refined, with angular lines and asymmetrical compositions. They tend to organize themselves in opposition to the naturalistic forms, creating a sense of tension and drama. By balancing these two forms equally, I create a biomorphic aesthetic that is constantly evolving and shifting. To achieve this aesthetic, I experiment with a variety of materials, including acrylic and metallic paints, plaster, foam, charcoal, wood, burlap, cheesecloth, cardboard, and steel. Each piece is treated with a monochromatic metallic finish to enhance the textural contrasts and drama. Ultimately, my work is intended to suggest an ongoing sense of transformation, both within the individual pieces and within my personal artistic journey.

AI.4 *Mi Casa es Su Casa***Author(s):** Emilia Cruz**Faculty Mentor:** Jeremy Chandler**Department:** Photography

**Abstract:** I will be doing an oral presentation on a series of photographs and scans titled, "Mi Casa es Su Casa", a collection that documents the home of someone I know well. My grandmother Is an independent woman that I was fortunate enough to have in my life; she is a Puerto Rican American, born and raised in Connecticut. She is a strong woman who doesn't take nothing from anyone and I wanted to show that in my series; "Mi Casa es Su Casa". My

work shows all of my Grandmother's knick knacks that she has collected over the years. In the form of mixed mediums, scanned and digital photography, these are all objects I have grown to live with through my life and cannot see my grandmother without them now. I wanted to use both scanned and digital photography in my project to not only get every detail that the scanner can give me, but to also point out all of the little things in her life that she loves. Each of her nick-nacks she has collected over the years, is a representation of who she is as a person; Puerto Rican with Native American blood, Strong, Loves her owls and elephants, and more. Through this series of photographs and scans, I hope to evoke feelings of childish wonder and nostalgia.

AI.5 *The Divine Feminine*

**Author(s):** Aaron Miller

**Faculty Mentor:** Jeremy Chandler

**Department:** Studio Art

**Abstract:** I will be giving an oral presentation of my work titled "The Divine Feminine," a collection of photographs depicting multiple women who I have a personal connection with and have inspired me throughout my life. These portraits all incorporate various aspects of nature. Each aspect of nature is a metaphor for empowerment and independence. For example, "Lavender Haze" and "God Is a Woman" represent self-love, "I Play with Fire" and "Dancing with The Devil" represent strength and fierceness and serve as a warning to not diminish or tear a person down; "Daylight," "Out Of The Woods," and "Wonder Woman" represent independence, strength, and being free to follow your own path and make your own choices. "I Can Buy Myself Flowers" represents self-growth and learning from life experiences. Finally, "Rare" represents change and growth, while also trusting yourself and your instincts and doing what is best for you. The photo also represents individuality and uniqueness, and loving yourself the way you are. My inspirations for this project include the works of multiple female musicians including Miley Cyrus, Taylor Swift, Ariana Grande, and Selena Gomez, all who I have looked up to for most of my life, who embody what this collection represents. The overall themes of my work are self-empowerment, independence, self-love, self-worth, and freedom.

AI.6 *For Kage*

**Author(s):** Kayla Cummings

**Faculty Mentor:** Jeremy Chandler

**Department:** Interdisciplinary Studies

**Abstract:** I will be giving an oral presentation on a series of digital collages I created using both scanography and digital photography combined with the use of photoshop. The compositions consist of scanned images of flowers with digital pictures of butterflies photoshopped onto the flower scans. The meaning behind this project focuses heavily on the interaction between living aspects of nature. It is a celebration of life and is meant to be a memorial for my best friend Kage who passed away this last December. The liveliness of the butterflies mixed with the vivid colors and patterns of the flowers creates meaningful images. Some of the images come off as a standard collage whereas others encapsulate the natural interaction between the two living beings. I am heavily influenced by the use of vivid colors and patterns in other scanography I have seen online. One thing that stands out to me as an artist about scanography is that it truly allows the photographer to manipulate the images and patterns to create compositions in a way that otherwise is not possible in the world of photography. By blending scanography with digital photography and photoshop I feel I am able to make images that are both interesting and original. These images are designed to evoke a dreamlike response from the viewer.

O2A.1 *An Analysis on Children Affected by ADHD in the Classroom*

**Author(s):** Haley Clark

**Faculty Mentor:** Shelley Stoehr-McCarthy

**Department:** Elementary/Special Education

**Abstract:** Schools now more than ever are being filled with children who suffer from ADHD or attention deficit hyperactivity disorder. Teachers nowadays are not given proper training or knowledge on what ADHD is as well as how to best teach these children. This study gives a look into the minds of students with the disorder and how they best learn. We will investigate both what does and does not help these kids learn in a classroom regarding behaviors and teaching strategies. I have done my research using many credited sources as well as interviewing people in my own life who both teach children with the disorder and have the disorder themselves. It is essential to a young child's education that their needs are met to receive the best possible learning experiences. Since children spend much of their childhood in the classroom, it is important that they feel comfortable and seen no matter what obstacles they may face.

O2A.2 *How Effective Is Supplementary Instruction Among Students with Learning Disabilities?*

**Author(s):** Holly Stern

**Faculty Mentor:** Shelley Stoehr-McCarthy

**Department:** Communications Disorders

**Abstract:** This paper discusses various structures of support for students with learning disabilities and considers which ones have the most positive outcomes.

O2A.3 *How COVID19 Affected the Development of Children*

**Author(s):** Hailey Marquardt

**Faculty Mentor:** Shelley Stoehr-McCarthy

**Department:** Elementary Education

**Abstract:** As the severity of the pandemic tapers off, it leads us to wonder how the isolation and the fear of the pandemic affected the development and well-being of children. Since we know that the first three years of a child's life are the most vital for their brain and motor development, it is important to evaluate how the pandemic may have lasting effects on this generation of children.

O2A.4 *Interning for HON150: The Culmination of Community, Rigor, and Relationships in Teaching Writing*

**Author(s):** Megan Mancarella

**Faculty Mentor:** Michael Shea

**Department:** Elementary Education and Liberal Studies

**Abstract:** Entering a first-year composition course—especially as an Honors College student—can be an intimidating experience for a variety of reasons. While experiencing both a social and intellectual transition, students must both find their footing in other courses and bridge the gap between the expectations of writing at the high school versus the college level. While interning for HON-150, Megan Mancarella observed the importance of community development in the classroom and its role in fostering an accepting and hard-working environment, which bolstered students' writing experience. HON-150 combines rigorous coursework with the foundation of personal relationships in order to develop a true learning community. This learning community prompts its students to develop and augment a host of skills—including critical thinking and self-motivated learning—which improve both the quality and the content of their writing. Teaching writing at the college level involves guiding students in their development of skills, including self-motivation and critical thinking; developing relationships and caring about students as both individuals and learners; teaching rigorous curricula; and fostering an accepting, encouraging learning community among a unique group of students.

O2A.5 *Interning for HON 150: The Serendipity of High Standards*

**Author(s):** Peter Borzillo

**Faculty Mentor:** Michael Shea

**Department:** English

**Abstract:** After interning in HON 150: Introduction to Critical Inquiry—a course notorious in the Honors College for its difficulty—Peter Borzillo reflects on how students learn in the face of struggle. In an American educational system increasingly challenged by palliative shortcuts, the aim of HON 150 is to employ difficulty to build better readers, writers, and most importantly, critical thinkers. For the course to meet its goal, students must work hard and meld into their community for support when hard work is not enough; as a focus of this paper, students employ the educational concepts of grit and agency. Grit has become growingly prominent in educational research and is often

attributed to be one of the primary traits of successful students. Agency supports grit in its short comings— those instances where the gritty, tough-it-out mentality is not substantial. Longstanding courses like HON 150 demonstrate an employment of both grit and agency and, in this paper, provide a case study to how students learn to thrive and excel because of difficulty, not just in spite of it.

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## 1:30 – 3:30 p.m. | Oral Presentations – Session 2B

ASC Room 308

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### O2B.1 *E-Waste in Ghana*

**Author(s):** Janaya Laude

**Faculty Mentor:** Anuli Njoku

**Department:** Public Health

**Abstract:** In Agbogbloshie, Ghana, there is an influx of electronic waste (e-waste) that enters the state due to poor regulations and law enforcement. E-waste refers to discarded electronic devices that are unwanted, not working, or have reached their end-of-life. While the selling and recycling of waste creates a great business opportunity, a large influx of e-waste is transported from European countries to African countries such as Ghana. Moreover, e-waste contains hazardous chemicals such as lead, mercury, and cadmium that are harmful to people and the environment. Despite its harm, informal recycling of e-waste in Ghana is a reliable source of income for civilians. This presentation explores the impacts of informal management of e-waste on the environment and physical health. We explore the financial and political challenges to using sustainable recycling technology. This analysis involved conducting an extensive search of the existing literature on electronic waste in Ghana, environmental injustice and effects on the environment and physical health. We also explored the effect of global lockdowns during the COVID-19 pandemic on e-waste transportation and collection. The research concludes that the government of Ghana must develop strict policies to block the leakage of e-waste from entering the country. Developed countries such as the United Kingdom (U.K.) must be held accountable for taking advantage of vulnerable countries to dispose of their e-waste. This study was conducted by a diverse group of colleagues from Southern Connecticut State University and University of New Haven which added to the substance and cultural understanding of this topic.

### O2B.2 *Examining Holistic Methods for Anxiety Reduction*

**Author(s):** Briana Perigy

**Faculty Mentor:** Christopher J. Budnick

**Department:** Psychology

**Abstract:** After COVID-19 anxiety exponentially increased. Anxiety is a persistent feeling of worry or fear, often accompanied by psychiatric and psychosomatic symptoms. The primary treatments are pharmacological agents and psychotherapy. Although both treatments work, there are barriers through cost and dependence on medications and psychotherapy. Lavender essential oil is anxiolytic; yet few studies examine the main constituent – linalool – exclusively. Monoterpenes, present a promising avenue that may relieve anxiety while reducing some of those negative side effects. Complementary and alternative medicine (CAM) is often compared to traditional medicine but differs greatly. Individuals using CAM believe it safer than more orthodox methods because it uses natural ingredients and has few side effects. Spiritual wellbeing (SWB) also strongly relates to CAM and spiritual activities may improve individuals' anxiety coping ability. Thus, both CAM and SWB beliefs may alter linalool's anxiolytic effect. We propose an experimental study with random assignment (n=200) to inhale pure linalool (or placebo) following an acute stressor (public speaking). We expect participants with strong CAM and SWB beliefs to experience more anxiolytic effects from linalool inhalation. Psychological and physiological measurements will also be taken (i.e., blood pressure, heart rate, and blood oxygen saturation) along with psychological self-report questions. Following data collection, independent means t-tests will examine baseline-differences and ensure group equivalency. For Hypothesis 1, independent means t-tests will be conducted to determine if the linalool condition reports less anxiety than the control condition. Hypothesis 2 and Hypothesis 3 will be tested using hierarchical linear regressions.

### O2B.3 *Does Social Pressure Increase Maladaptive Conforming Behaviors in Young Adults?*

**Author(s):** Paule Baptiste, Naomi Huertas

**Faculty Mentor:** Christopher J. Budnick

**Department:** Psychology

**Abstract:** Social pressure influences behaviors. The frontal lobe of adults younger than 25 years frontal lobe has not fully developed, therefore they might be more susceptible to social pressure resulting in maladaptive behaviors. I predict that age will predict maladaptive (drugs, alcohol, and criminal activities), and that this relationship will be especially strong in younger (compared to older) adults and for those higher in FoMO. We recruited participants: 1) via social media, 2) at Southern Connecticut State University, or 3) by text message. Participants (n = 70) answered

questions about FoMo, criminal activities, and willingness to drive under the influence. At the end of the study, participants provided information about their age and ethnicity, then they were debriefed. Contrary to predictions, multiple regression results failed to find a fomo main effect ( $p = .362$ ) or interaction with age on criminal behavior ( $p = .291$ ). However, younger individuals reported higher criminal intent than did older individuals ( $b_{19} = .062$ ,  $t[66] = 3.002$ ,  $p = .004$ ). This is in support of my hypothesis that younger adults are more likely to participate in criminal behaviors. Due to the study design, there are limitations like no manipulation and a small sample. The results did not show a significant interaction between Fomo and criminal behaviors. Future research should examine whether Fomo mediates the relationship between age and maladaptive behaviors in a real world context. This could help enrich colleges and workplace's knowledge of the impact of social pressures on maladaptive behaviors.

O2B.4 *Opioid Desistance Breakers in Mothers with Opioid Use Disorder*

**Author(s):** Angela Corsino

**Faculty Mentor:** Aukje Lamonica

**Department:** Public Health

**Abstract:** The reach of the opioid epidemic is broad and nondiscriminatory of sex, race, socioeconomic status, or parental role. An ethnographic longitudinal study was conducted in two suburban areas of New Haven, Connecticut and Newark, New Jersey. Here we will focus on data from eleven qualitative interviews with mothers who identify as current users of opioids and have had two or more years of non-use before returning to opioid use. Specifically, we will examine the motivation behind the reinitiating of opioid use after more than two years of non-use. Identifying these motivators can inform treatment initiatives. Funding acknowledgment: NIDA #R15DA041657.

O2B.5 *Red*

**Author(s):** Kayla Cummings

**Faculty Mentor:** Carmen Coury

**Department:** Interdisciplinary Studies

**Abstract:** "Red" is a realistic horror-based flash fiction. The piece depicts the aftermath of a gruesome murder. We will follow our protagonist as she struggles with the consequences and reality of the horrific act she has committed.

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## 1:30 – 3:30 p.m. | Oral Presentations – Session 2C

*ASC Room 309*

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Cultural & Intellectual History: A History Seminar Roundtable |

O2C.1 *Marilyn Monroe and Celebrity Culture in the 20<sup>th</sup> Century U.S.*

**Author(s):** Taylor Jones

**Faculty Mentor:** Siobhan Carter-David

**Department:** History

**Abstract:** My project is about Marylin Monroe and her struggles with the media. She lived a very successful life and there were many challenges she had to overcome. There are also many privileges she had for her beauty, but unfortunately, they lead her to be viewed as a sex symbol. In my project I am going to review all the struggles that celebrity culture struggled with the media.

O2C.2 *Black Jews in 20<sup>th</sup> Century U.S.*

**Author(s):** William Young

**Faculty Mentor:** Siobhan Carter-David

**Department:** History

**Abstract:** This paper will, using oral history, explore several 20<sup>th</sup> century manifestations of the movement of people who identify as Black Jews or Black Israelites.

O2C.3 *Voodoo and the New Negro Movement: The Intellectual Traditions of Hurston and DuBois*

**Author(s):** Clayton Simses

**Faculty Mentor:** Siobhan Carter-David

**Department:** History

**Abstract:** During the New Negro movement, both W. E. B. DuBois and Zora Neal Hurston sought to uplift the Black community through their research and publications. While DuBois is fondly remembered for this, Hurston is often forgotten. This presentation will look into why this might have been the case by putting both of the academic's research into historical context and by analyzing their essays, novels, and interactions with each other.



O2C.4 *Savin Rock Amusement Park and West Haven in the 20<sup>th</sup> Century: A Local History*

**Author(s):** Mary Pelkey

**Faculty Mentor:** Siobhan Carter-David

**Department:** History

**Abstract:** An iconic symbol of American entertainment, the amusement park and boardwalk played a vital role in early 20<sup>th</sup> century culture. Often referred to as “Connecticut's Coney Island,” Savin Rock Amusement Park was the prime example of Americana in our local history. Savin Rock was a crucial part of West Haven’s history and the development of the community and culture.

O2C.5 *How Many Roads: How Bob Dylan Shaped the Golden Era of the Singer/Songwriter*

**Author(s):** Riley Johnson

**Faculty Mentor:** Siobhan Carter-David

**Department:** History

**Abstract:** This paper will explore why and how Bob Dylan changed the trajectory of the modern singer/ songwriter.

O2C.6 *Indo-Caribbean Migration to Queens, New York*

**Author(s):** Ashley Nandkumar

**Faculty Mentor:** Siobhan Carter-David

**Department:** History

**Abstract:** Indo-Caribbeans are the second largest immigration group in Queens, New York. This research study will analyze their unique culture from their indentured servitude from India to the Caribbean and their migration to America. Specifically, focusing on Queens, New York and the neighborhood Richmond Hill, where they have cemented a culture known as "Little Guyana".

O2C.7 *The Culture Bomb of the 50's*

**Author(s):** Jonathan Santillo

**Faculty Mentor:** Siobhan Carter-David

**Department:** History

**Abstract:** I want to answer why the music in the '50s was so magical and distinct that we don't see anything like it in the modern day. Overall, was 50s music perhaps the greatest of American music, with its lyrics filled with so much magic and love and carefree in the world? Or did the music have a deeper meaning to it? The music of the '50s represents old America, its ideals, principles, and ambitions. It accompanied the ideas that all Americans had and felt at the time. With songs like “Dream Lover,” “Come Go with Me, Fly with Me,” and so much more.

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<i>The Effect of Personal Care Attendants on the Psychosocial Wellbeing of Parent Caregivers of Adults with Disabilities in Connecticut</i>	
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<b>Author(s):</b> Grounds, Julia	17
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*One Fish, Two Fish, Where Fish, There Fish: Defining and Identifying Seafood Deserts Using Geographical Applications in New Haven County, Connecticut, U.S.A.*

**Author(s):** Heigel, Vanessa

**Mentor:** Mariah Kelly

**Format:** Oral Presentation

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*Stephen Collins Project*

**Author(s):** Hinds, Yvonne

**Mentor:** C. Michele Thompson

**Format:** Oral Presentation

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*Lyrics as Literature: Mitski & the Art of Songwriting*

**Author(s):** Jackson, Chaniya

**Mentor:** Melissa Talhelm

**Format:** Oral Presentation

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*How Many Roads: How Bob Dylan Shaped the Golden Era of the Singer/Songwriter*

**Author(s):** Johnson, Riley

**Mentor:** Siobhan Carter-David

**Format:** Poster Presentation

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*Marilyn Monroe and Celebrity Culture in the 20th Century U.S.*

**Author(s):** Jones, Taylor

**Mentor:** Siobhan Carter-David

**Format:** Poster Presentation

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*She is dangerous!": Madwomen and Rebellion in Mary Elizabeth Braddon's Lady Audley's Secret and Jean Rhys's Wide Sargasso Sea*

**Author(s):** Just, Olivia

**Mentor:** Vara Neverow

**Format:** Oral Presentation

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*A Non-quiescent Coral's Diet in the Winter, How Astrangia!*

**Author(s):** Khashab, Shatha; Alina Tran

**Mentor:** Sean P. Grace

**Format:** Poster Presentation

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*"Kraken" into the Beverage Industry: A Market Analysis for Kraken Seltzer*

**Author(s):** King, Noelle

**Mentor:** C. Patrick Heidkamp

**Format:** Poster Presentation

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*Diversifying the New England seaweed industry: Investigating Farmer Feasibility of Tank Culturing Warm-water Species, Gracilaria Tikvahiae*

**Author(s):** Kost, Katie

**Mentor:** Emma Cross

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*The "To be or not to be" Soliloquy and its Hidden Meanings*

**Author(s):** Krajewski, Ava

**Mentor:** Mike Shea

**Format:** Oral Presentation

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*E-Waste in Ghana*

**Author(s):** Laude, Janaya

**Mentor:** Anuli Njoku

**Format:** Oral Presentation

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*Comparison of Genotype Phasing Algorithms*

**Author(s):** Lehr, Christa; Vinaydeep Singh

**Mentor:** Sahar Al Seesi

**Format:** Poster Presentation

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*Interning for HON150: The Culmination of Community, Rigor, and Relationships in Teaching Writing*

**Author(s):** Mancarella, Megan

**Mentor:** Mike Shea

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*How COVID19 Affected the Development of Children*

**Author(s):** Marquardt, Hailey

**Mentor:** Shelley Stoehr-McCarthy

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<b>Author(s):</b> Mate Piovanetti, Karlos; Madison Ledford; Sarah Masotta	
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<b>Author(s):</b> Ofori-Ntiamoah, Gillian	
<b>Mentor:</b> Todd Ryder	16
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