

# Southern Connecticut State University 5<sup>th</sup> Annual



## Undergraduate **Research & Creativity** Conference

Saturday, April 13, 2019

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 5<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 5th Annual Undergraduate Research and Creativity Conference is proudly sponsored by:**

The SCSU Foundation  
The Office of the President  
The Office of the Provost/Vice President of Academic Affairs  
Division of Research and Innovation  
Sponsored Programs and Research  
The Research and Scholarship Advisory Committee  
The Office of STEM Innovation and Leadership  
The Art Department  
Center for Research on Interface Structures and Phenomena, CRISP

Conference Committee  
Listed in alphabetical order:

Kelly Bordner  
Christine Broadbridge  
Jeremy Chandler  
Carol Jenkins

Amy Taylor  
C. Michele Thompson  
Bogdan Zamfir



# 5<sup>th</sup> Annual Undergraduate Research and Creativity Conference

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Saturday, April 13, 2019 | 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  
Breakfast  
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  
Oral Presentation – Session 1B  
Art Installations – Session 1C  
Ballroom A  
Ballroom B  
Buley Library Art Gallery

10:30 – 12:00 p.m.      Poster Presentation – Session 1  
3<sup>rd</sup> floor Walkway & Reception Area

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

**Join us for lunch at Earl Hall and explore the creative works of over 60 undergraduate Fine Art Students in Graphic Design, Painting, Drawing, Sculpture, Ceramics, Photography, Printmaking, and Jewelry/Metals.**

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

1:30 – 3:30 p.m.      Oral Presentation – Session 2A  
Art Installations – Session 2B  
Ballroom A  
Buley Library Art Gallery

2:00 – 3:30 p.m.      Poster Presentation – Session 2  
3<sup>rd</sup> floor Walkway & Reception Area

O1A.1 *Changing Safe Sex Attitudes and Behaviors among SCSU Undergraduate Students*

**Author(s):** David Robledo

**Mentor:** Jean M. Breny, Ph.D., MPH

**Department:** Public Health

**Abstract:** The purpose of this study is to use community based participatory research with male undergraduate students to understand and explore social and cultural stigmas with regards to safe sex practices. This project will involve working alongside male undergraduate students at SCSU, collecting qualitative data in regards to safe sex practices and responsibilities in an effort to develop improved health promotion strategies to get our population to change their attitudes and behaviors towards safe sex practices. Through focus groups, we can understand the core issues young males have with safe sex practices, analyze what the young male population feels could be done better to get more of their peers to engage in safe sex practices and in the end, make changes or develop new health promotion methods and interventions to get young men to have safer sex in order to bring down rates of STDs. The findings in this study will also help the SCSU Wellness Center in creating better promotional materials, education programs, and increase participation in the “Get Yourself Tested” events on campus.

O1A.2 *Wealth in Medieval France*

**Author(s):** Karl Grannan

**Mentor:** Dr. Nichole Gleisner

**Department:** World Languages

**Abstract:** My research project will explore conceptions of wealth in medieval France, utilizing fictional portrayals in literature such as *La Chanson de Roland*, *Les Lais de Marie de France*, and *Erec et Enide* as well as primary and secondary resources including archaeological evidence and written testaments of the era that serve to illustrate the role wealth played in medieval French society. This analysis will also take into consideration how these elements evolved from the early to late medieval period, approximately 600-1400 A.D., as well as how wealth interfaced with different elements of society, namely the Clergy, the Nobility and the Peasantry. In so doing I hope to illuminate not only the reality of medieval life as it relates to wealth, but also the philosophical and religious underpinnings thereof.

O1A.3 *Human and Nonhuman Representations in the Graphic Narrative*

**Author(s):** Danae Sawchyn

**Mentor:** Charles Baraw, Associate Professor

**Department:** English

**Abstract:** I am currently enrolled in an independent study which explores the techniques of characterizing humans and nonhumans in graphic narratives. My individual intent is to deconstruct examples of compelling characters as they are depicted in graphic novels/comics to make sense of what creates an implied person, leading to the construction of my own comics based on the devices I discover. My project will address how one builds a fictional self and how close an effective fictional self is to reality. I will read, analyze and critique the devices and conventions within graphic novels, as well as gather information from texts on literary theory and graphic novels. I would like to discuss the idea of recognizable personhood as well as internal existence (interiority) versus how one exists in their own world (externality). I will also consider the concept of individuation (linking specific properties with a self) and independence in order to explore how levels of these qualities determine our readerly relationship with characters, through questions such as “how are autonomy, interiority and selfhood related?” and “What elements contribute to sense of agency and selfhood?” This discussion extends to the representation of non-human (animal) characters in graphic novels, including topics such as empathy and anthropomorphism.

O1A.4 *A State of Fear: Explored Through Literature*

**Author(s):** Nicole Waibel

**Mentor:** Charles Baraw, Associate Professor

**Department:** English

**Abstract:** Sitting in college classes, we constantly feel the weight of academic pursuits, professional development, and social demands in addition to the pressure of what our years after college will hold for us. In everyday life there is a constant burden of not living up to our potential. We constantly ask ourselves, “Will this lead me to success? Financial stability? Happiness? Will I fail?” Many individuals live in this state of fear. A fear of failing or “not being good enough” is a crippling pressure to carry with us each day at such a critical time in our lives. This fear is subtly within all aspects of our society, but yet remains a conversation to be avoided. We see this anxiety depicted in graphic novels such as, *Everything is Flammable*, Gabrielle Bell, and Jimmy Corrigan: The Smartest Kid on Earth, Chris Ware. These two works showcase characters who could be categorized as failures, in the sense that this society uses. Literature is a means to confront these fears and concerns which generally go unspoken. This talk will discuss graphic novels which do confront these ideals set by society and the reactions of these works in undergraduate settings. In addition to this core outline, this talk will also work to grapple major concepts such as sexism and age-related beliefs centering around the concept of failure and lack of forward movement in life.

O1A.5 *Keeping a Distance to Create a Closeness: Keeping Bias in the Background in “Everything is Flammable”*

**Author(s):** Lori Dube

**Mentor:** Charles Baraw, Associate Professor

**Department:** English

**Abstract:** “The interactive nature of comics, as described by Scott McCloud (1993) in *Understanding Comics*, can help develop a sympathetic connection between reader and subject, enhancing the intense experience of trauma or the humor of the mundane.” Difficult subject matter can seem abstract in text, but tangible in comics because of its visual aspect. This paper addresses how the form, structure, and graphics the author presents allows them to convey difficult, dense subject matter in a high impact way that words alone cannot achieve. To understand what comics have become and how they work, one must first understand where they started: In the early to mid-1900’s, comics only presented “safe” subject matter, such as Captain America of the 1940’s. However, by the 1950’s, Fredric Wertham, an influential psychiatrist, would object to the violence and latent sexuality found in comics ultimately driving comics to be the face and voice of rebellion. As the content of comics expanded, so did the malleability, or the capability of the comic to be shaped; no longer were comics simple square frames reading left to right, but anything the author could imagine and put on paper. The author Gabrielle Bell and her work “Everything is Flammable” is one author to exemplify the malleability and lack of censorship in comics through her artistic choices in composition. For instance, Bell addresses the social issue of reintegration of prisoners, suicide, climate change and drug addiction. Though Bell’s word choice contributed to the ease in which a reader can “pass through” the dialogue and commentary in these instances, the steady rhythm created by regular panels contributed to the illusion of normalcy, smoothly propelling the reader through the text and images. This is only one of many ways Bell shows us how the malleability of comics contributes to their success; she also shows the reader how content density, thoughtful panel placement, and the size of gutter space, or thinking space, contributes to the successful narrative of comics. Still, it is important to consider whether or not the conversation that comic narratives start with the reader will continue on into the real world.

O1A.6 *Wordless Comics and the Art of Storytelling*

**Author(s):** Emily Hartnett

**Mentor:** Charles Baraw, Associate Professor

**Department:** English

**Abstract:** Comic books combine the world of visual art with the imagination of writing and storytelling. Comic authors can take an image and use it in succession with other images, combined with the elements of a story, to create a multi-media format that transcends both the worlds of writing and visual art. However, comics can take the world of storytelling one step further and are in some cases able to create a story without the use of words. Using the elements of storytelling as a guide, the writer can create a story that flows and is understood without the need for background text or filler dialogue.

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

*Ballroom B*

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O1B.1 *Creating Emotional, Intellectual, and Psychological Safety for Students in Secondary English Classrooms: An Autoethnography*

**Author(s):** Jerica Olson

**Mentor:** Laura Bower-Phipps, Ph.D.

**Department:** Curriculum and Learning

**Abstract:** In fall of 2018 I wrote an autoethnography for my honors college thesis. My autoethnography explores my experiences with safety and a lack of safety in school and in the classroom, as well as how these experiences shaped my beliefs as a preservice educator. I began my research by examining literature that studies emotional, intellectual, and psychological safety for students in school and in the classroom. I separated this literature into two separate categories: “Research on Safety of All Students” and “Research on Safety of Marginalized Groups of Students.” Then, I defined “safety” based upon the research I have reviewed. I then argued for why autoethnography is an appropriate form of research for me to utilize. Next, I presented historical context about my life so that readers can better understand why autoethnography was the most appropriate form of research for me to use, as my experiences are simultaneously unique and relatable. I then reflected on my experiences in school by analyzing four journals that I wrote from fourth grade through eighth grade. I also examined my professional writing throughout my time in college as a preservice educator in order to determine how my notions of emotional, intellectual, and psychological safety influence the teacher I will become. Ultimately, my findings have shaped my beliefs and future practices as an educator. My goal is that this project will influence the practices of other educators wanting to create an emotionally, intellectually, and psychologically safe classroom environment for students as well.

O1B.2 *Exploring the Gender Gap in Tech Companies: Where Are the Women?*

**Author(s):** Haroon Chaudhry, Bryan Mera, Cedil Onivogui

**Mentor:** Alison Wall, D.B.A.

**Department:** Management

**Abstract:** Managing diversity is a hot topic among technology companies, all of which have started to display transparency by publishing their diversity profiles. Despite the fact that the world is so modernized now, women working in the tech companies are still experiencing/facing many difficulties based on their gender. It is very heartbreaking news that women are still being underrepresented in tech companies, mainly in engineering, executive, and investor roles. Google, Apple, Facebook, Intel, Pinterest, and all other big Silicon Valley companies have adopted the habits of releasing their diversity stats. According to the Organizational Behavior book, Google Diversity reports indicates that their workforce consists of 70 percent males and 30 percent females. Moreover, its workforce comprises “61 percent White, 30 percent Asian...2 percent black” (171). This presentation will discuss some of the causes and provide some recommendations and an opportunity for some companies to advance in future.

O1B.3 *The Role of Clothing in the Salem Witch Hysteria*

**Author(s):** Angela Buckley

**Mentor:** William A. Farley, Ph.D.

**Department:** Anthropology

**Abstract:** Despite the vast research done on the Salem Witch Hysteria, little thought has been put into the role clothing played in the epidemic. This study is an investigation into the aforementioned relationship through the examination of historical books and original documents of the event, as well as the conduction of on location interviews and the review of film documentaries. Analysis finds that one's style of dress was used as character evidence against the accused while specific articles of clothing were used as proof of witchcraft, placing them at the scene. Research also shows clothing being used as a tool of witchcraft (ex: poppets) as well as witchcraft effecting clothing production. This inquiry is part of a growing interest in the impact clothing has on history and historical events, as well as its impact on culture as a whole. This project will contribute to future research and perspective on the topic and those like it.

O1B.4 *Reshaping the American Electoral College: Identifying What Causes the Adoption of Electoral Reform Legislation*

**Author(s):** Megan Baker

**Mentor:** Dr. Jennifer Hopper

**Department:** Political Science

**Abstract:** This study explores what causes states to adopt electoral college reform, and how these factors/outcomes have changed over time. This research draws upon a mixture of secondary sources discussing what influenced Maine and Nebraska to enact the district system, as well as the primary sources of floor hearing discourses when Connecticut and Washington D.C. decided to sign onto the National Popular Vote Interstate Compact (NPVIC). After I examined these documents, it became clear that the political party holding a majority in the state legislature when electoral reform is voted on, the prevalence of contested elections, and if a state predominantly supports one political party or if its support tends to oscillate between both parties (a concept known in politics as “swing” and “safe” states) majorly affect if electoral reform will pass. With the finding of these factors, I gathered quantitative data to run a statistical analysis of the variables using SPSS software in order to see if my qualitative findings were reinforced numerically. Through the identification of what causes states to adopt electoral college reform and the transformation of these motives and ways of changing the electoral college over time, this research highlights useful predicting patterns that extend beyond the scope of the district system and the NPVIC to other types of electoral reform efforts.

O1B.5 *Point of View: Exploring Multiple Perspectives in Fiction*

**Author(s):** Steff Sirois

**Mentor:** Dr. Rachel Furey

**Department:** English

**Abstract:** Last summer, I had the pleasure of working with Dr. Rachel Furey on a project for which I explored aspects of crafting fiction, using fiction writing exercises in classrooms, and strengthening my own writing. I became especially interested in different points of view in my writing as well as how exploring different perspectives can actually help us writers when fictionalizing the experiences, we decide to write about. Although it might not seem that writing from a perspective differing from the writers would make for a more emotionally accurate story, I've found in my own writing that this is exactly the case. Most of it has to do with distancing oneself from one's own personal experiences and, as humans with naturally invasive egos, casting aside one's identity—whether it have to do with gender, age, class, or culture—I've found that replacing oneself in a story with a character who differs in at least one of these categories can make the writing process smoother and more seamless. When we are able to take ourselves out of the equation, we can more genuinely reflect on that experience we so badly want to write about. If granted a slot at the creativity conference, I would love to discuss my experience in exploring point of view in fiction writing and I would also love to read a short story of mine in which I do exactly this: write from a perspective differing vastly from my own.

O1B.6 *Technology and Its Connection to Teen Mental Health*

**Author(s):** Morgan Kane

**Mentor:** Shelley Stoehr-McCarthy

**Department:** English

**Abstract:** This is a paper I wrote for my English 112 class this semester, about the effects of digital technology on teenagers' mental health. The mental health of teens would change for the better without smartphones by taking away their main source of insecurities, limiting their ability to bully, and forcing person-to-person interactions at a young age, thus decreasing social anxiety.

O1B.7 *A Moment Before and a Moment After*

**Author(s):** Molly Flanagan

**Mentor:** Dr. Rachel Furey

**Department:** English

**Abstract:** This is a presentation of two pieces of creative writing, one from a moment in the perspective of a child, and the other from the perspective of a teenager at a high school party. Both pieces relate to the experiences of women and how they interact with their families, and later with their peers.

O1B.8 *Smartphones Gone Forever: Utopia or Dystopia?*

**Author(s):** Sarai Genua

**Mentor:** Shelley Stoehr-McCarthy

**Department:** English

**Abstract:** I will read a paper I wrote in my English 112 class this semester about a world without smartphones. For some people, this would be utopia, but for others it would be awful. In my paper, I examine the effects of portable digital technology on society, both positive and negative in the areas of education, social interaction, personal aspirations, and more.

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**9:45 a.m. – 12:00 p.m. | Art Installations and Presentations – Session 1C**

*Buley Library Art Gallery*

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A1C.1 *Life's Still Beautiful*

**Author(s):** Samantha DeMarco

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** Starting at a young age, my life always revolved around art in some form or another. Intrigued by the way that cameras work in capturing the world around me, I took my first photography class in high school. As I learned the basics, I paid closer attention to the subtle beauties in life that are such important components to the art of photography. My most recent work focuses on still-life photography, which is completely different from the documentary work I am used to producing. In setting up these still lives that I then photograph, I make sure to place the objects on a table top with a window nearby. Doing so allows me to combine my appreciation for natural light with the artificial light that I also use to cast shadows within the frame. Arranging the objects in a unique, sculptural way adds interest to my images which contain average household items. My project consists of a series of still-life photographs that use objects found around the house, some of which may be loosely associated with each of my family members' characteristics. Still-life paintings that contain traditional still-life objects, such as fruits and flowers, in addition to a choice of moody lighting is the influence behind this series. Through my arrangement of the objects and my conscious decision to cast shadows in my images with both natural and artificial light sources, my intent is to accentuate the beauty within these still-lives which showcase household items that may, otherwise, look rather boring.

A1C.2 *Memoire of a Flower*

**Author(s):** Ashley Pavelko

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** This body of work is a mixed media installation of floral representation, consisting of oil pastel drawings on black paper and hand-built ceramic pieces. I study the formal aspects of these flowers and present them in a larger scale. This series will consist of ceramic flowers such as a Daisy, a series of Sacred Lotuses and Sunflowers. For my oil pastel works I will include these three flowers, a Plumeria, a Dahlia, and a Magnolia. The selection is based off of picking fully bloomed flowers because they are at their most outstretched point where you can see the color variation within every petal of the flower.

A1C.3 *What is a Mexican to You?*

**Author(s):** Azucena Rojas

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** My project is a set of satirical photographic self-portraits based off of stereotypes that the American culture have created and have defined what a Mexican person is. My color palette represents the colors of the Mexican flag, but also colors that are typical for Mexicans. It is very important to me to show both empowerment and intimidation through my facial expression in order for my audience to understand that there is fear in being Mexican. When Trump became president, he started to label Mexicans as criminals for being undocumented. My community is mostly Mexican people, both documented and undocumented. There was fear put into my community with the racism created against us by a powerful person. Therefore, I am using Frida Kahlo, Eugenio Derbez and others as my references in order to show that we, Mexicans, come to this country for the American Dream. Mexicans should not be scared to be proud of their roots that is why I am embracing my culture in the images. I am using the satirical stereotypes in order to show the bright side of being a Mexican.

A1C.4 *Journey To...*

**Author(s):** Denise Garner

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** My project consists of six portrait style images that touch on the essence of African-American identity. My journey has opened my eyes to a new source of self-confidence, strength, and empowerment. With the use of color and patterns representing the complexity of heritage, tradition, culture, and identity. It's almost like controlled chaos that yields a beautiful outcome.

A1C.5 *Mark on Nature*

**Author(s):** Daniel Taylor

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** I have always been attracted to the forest. Through my photography I've expressed my love of nature; walking through the forest and documenting what I see, both natural and un-natural. My project will consist of a series of photographs that will depict a sort of relationship we as humans have with nature. The photos are an archive of what objects and markings people leave behind in the environmental landscape. The images represent how the objects left behind show a sense of remembrance and marking where people have been. Documenting them makes it possible to show others how we interact with our natural environment leaving things behind in forest. I will shoot the photos all around the area of Lake Wintergreen in Hamden. I want my work to show the forest in a different way than most would think of when they think of the wilderness. For instance, what we leave behind can sometimes affect nature in a negative way but also bring out a sense of interest in the landscape because of what is left behind.

A1C.6 *"A Guinness a day"*

**Author(s):** Kelsey Doran

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** Animals have always been my go-to for photography, I believe this is because I have a diverse background with animals, as both a care-taker at a dog daycare and also from working in the Veterinary field, most recently. This project isn't just about Courtney, and it's not just about Guinness. It's about the dedication that the two have to each other, respectively, and the diverse relationship that the two share, having given so much to each other. This work portrays the hard work, the dedication and the love that the two share for each other, day in and day out.

A1C.7 *Mirrorless*

**Author(s):** Georgenie Lherisson

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** My body of work is a series of mixed media artworks consisting of figurative ceramics sculptures, oil pastels, and functional pottery. My artwork is influenced by my cultural background as a Haitian immigrant. These five beautifully dressed figures are hand sculpted using a stoneware clay which creates a brown tone to emphasize the natural skin tone of African descent. The abstraction of the figures portrays the lack of artistic resources that hinder young aspired artists to pursue art. The pottery pieces are functional pieces in the hope that each form will allow the user to develop a connection with the piece beyond its intended purposes. The oil pastel drawings are portraits of men representing black men on black Arches paper. The drawings display the emotional response of the male due to the lack of educational resources. The mixing of the different color of oil pastels creates unique variations in the underlying structure of the brown skin tone that gives the illusion of reality.

A1C.8 *Saturday Morning*

**Author(s):** Meghan Olson

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** I relish sifting through the old, quotidian photo albums my dad made for my sister and I when we were just babies. They preserve the moments I no longer remember, stopping time just for a moment, allowing me to reminisce the simplicities of late summer afternoons rolling down the grassy hill in my dad's backyard or being bundled up to pose in front of white, snowy landscapes with lifelong family friends. With my work, I continue to celebrate what may seem like minuscule moments by archiving the people and things around me. I enjoy the challenge posed by the limitations of the ordinary day-to-day life and use photography as a way to preserve the aspects of life that matter to me. Friendship has always been very important to me and I think because of that, my friends have time and time again become a main focus in my photos. With that, I decided to embrace my desire to celebrate my friendship by designing a project that focuses on a specific aspect of my friend group; in order to push myself to archive the quotidian moments we spend together. Using a medium format, film camera I plan to photograph our morning breakfasts in which we gather early in the morning and make breakfast together before we part ways and return to our busy and hectic lives. This has become a staple to our relationship because as we are getting older we are finding it harder to find time to spend with one another and this is our way of lulling our busy lives for a couple of hours to reconnect.

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**10:30 a.m. – 12:00 p.m. | Poster Presentations – Session 1**

*3<sup>rd</sup> floor walkway, Adanti Student Center*

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P1.1 *Protein Characterization of Glioblastoma Multiforme Tumor Microvesicles*

**Author(s):** Brooks Blausler

**Mentor:** Sarah Crawford, Ph.D.

**Department:** Biology

**Abstract:** Cancer cells manipulate the immune system to evade targeting and destruction by cytotoxic T cells [1]. In normal physiology immune system checkpoints provide a regulatory function for T cells. One such checkpoint is the PD-1/PD-L1 pathway, which prevents an over-response from T cells during immune system activation. Cancer cells manipulate this checkpoint by increasing PD-L1 expression which reduces T cell response to the cancer [2]. A normal function of human cells is the production of nano-sized capsules of plasma membrane and proteins known as extracellular vesicles (EV). These vesicles are used to communicate with and influence other cells in the body by transporting a variety of biological molecules including proteins, RNAs, and lipids. Cancer cells as well as normal cells send and receive EVs for various functions. Research suggests that EVs produced by glioblastoma multiforme (GBM) cancer influence the tumor's microenvironment in a way to promote tumor health and progression [3]. I posit that Glioblastoma multiforme may use EVs as carriers of PD-L1, allowing manipulation of the PD-1/PD-L1 pathway outside of the immediate surface of the tumor itself. If tumor secreted microvesicles carry this T cell repressor protein, this might represent a mechanism associated with tumor progression. This study tests for the presence/absence of PD-L1 protein in GBM derived microvesicles (a type of EV). Production of the large quantity of GBM cells needed for the experiment is near completion. Microvesicle isolation and preparation will commence in 1-2 weeks with results following thereafter. Contact brooksblausler@gmail.com for references.

P1.2 *Are Probiotics Pro-Life for Seahorses? A deeper look at the impact of probiotics on seahorse development.*

**Author(s):** Chevon Rumble

**Mentor:** Meghan Barboza, Ph.D.

**Department:** Biology

**Abstract:** At a local lab in SUNY Morrisville, seahorses are being bred. There have been issues with the breeding program as seahorses are dying before reaching maturity signifying some sort of hindrance to growth and development. One suggestion to improve lifespan is to add probiotics to the breeding tanks in which the seahorses develop, as early death could be due to issues with development of the digestive tract. Probiotics are thought to be a solution to this issue as probiotics may be beneficial to the micro-flora of the gut. Therefore, this experiment aims to take a deeper look at the influence of probiotics on the morphological development of seahorses over various life stages. The experiment has a control group and experimental group with the manipulating variable being the addition of probiotics to the seahorse's growth tank. The experiment examines the microanatomy of the seahorses, this includes using histochemistry to study the development of the epithelium and muscle makeup to note any difference in the morphology of the seahorses. Initially, a batch of seahorses from the control group were sectioned and stained. From this it was determined that tissues should be cut at 8 microns and staining should include: H & E, trichrome, and toluidine blue stains. Preliminary results from breeding indicate that a lower mortality is observed within the experimental group. Research using the above method to compare development of the seahorses within the experimental group to control will continue in hopes of explaining the reason for the observed lower mortality.

- P1.3 *Immunostaining and Image Analysis Pipeline for Drosophila Motor Neurons*  
**Author(s):** Chanpasith Phongthachit, Jeremy Brown, Mikolaj Sulkowski  
**Mentor:** Mikolaj J Sulkowski, Ph.D.  
**Department:** Biology  
**Abstract:** Immunofluorescence is a widely-used and versatile method for examining the distribution of molecules in the nervous tissue. However, extracting numerical data from immunofluorescence images can be difficult and time consuming. We have developed an open source program with user-friendly interface that automatically identifies regions-of-interest (ROIs) from a subsection of an image, selects the area outside of the ROIs as background, and compiles quantitative data in a spreadsheet format for further analysis. This computer program is partnered with our streamlined protocol for dissection and immunostaining of the *Drosophila* neuromuscular junction and central nervous system. Together, this simplified staining protocol and automated image-analysis program constitute a scientific data pipeline that simplifies the process of obtaining quantitative results from immunohistochemistry for the research community
- P1.4 *Investigation on the Cytotoxicity Effect and Cellular Uptake of DBTRG- 05MG Glioblastoma Microvesicles*  
**Author(s):** Darani Thammavongsa  
**Mentor:** Sarah Crawford, Ph.D.  
**Department:** Biology  
**Abstract:** The purpose of this study was to examine the intracellular uptake of Doxorubicin (DOX) and its cytotoxicity effect in microvesicles (MVs) from a specific brain cancer cell line, DBTRG- 05MG Glioblastoma Multiforme (GBM). The microvesicles derived from GBM tumor cells are extracellular vesicles that bleb off of the cancer cell's plasma membrane. These vesicles participate in intercellular communication and in previous studies, they were effective as drug delivery devices for in vivo chemotherapy. This study focuses on the novelty of using GBM MVs as mediated drug delivery devices to therapeutically treat brain cancer at a nanoscopic scale which in return reduces traditional chemotherapy side-effects.
- P1.5 *Gross and Microscopic Anatomy of the Olfactory Turbinates and Vomeronasal Organ of a Grey Seal, Halichorus Grypus*  
**Author(s):** Gabriella Restrepo, Meghan Barboza, Ph.D.  
**Mentor:** Meghan Barboza, Ph.D.  
**Department:** Biology  
**Abstract:** Pinnipeds include seals, sea lions, and walruses, a group of aquatic mammals that evolved during the Oligocene period. Pinnipeds, such as the grey seal, *Halichorus grypus*, are an exceptional combination of predator and prey and are able to utilize terrestrial and aquatic environments. Seals use these environments to hunt and reproduce which requires several physiologic systems, including the chemosensory. This system supports the seal while locating food, in finding receptive mates, and identifying their pups. This project examines the olfactory system of seals which are closely related to the domesticated dog, *Canis lupus familiaris*. Similarities of the vomeronasal organ and olfactory epithelium are expected. This project uses gross dissection and histologic staining to document the anatomy of a grey seal and compare it to the literature on the domestic dog which will allow for a better understanding of the seals use of odor processing.
- P1.6 *The Effect of Temperature on the Rate of Photosynthesis of Intertidal Astrangia Poculata (Ellis and Solander 1786)*  
**Author(s):** Julia Honan  
**Mentor:** Sean Patrick Grace, Ph.D.  
**Department:** Biology  
**Abstract:** *Astrangia poculata* is a scleractinian coral with a far distribution in the Atlantic including the Long Island Sound and throughout the Southern New England coast. This coral, like its tropical relatives, feeds both heterotrophically capturing prey and autotrophically through a symbiotic relationship with the dinoflagellate zooxanthellae, which is present within the gastrodermal tissue of the coral. This coral, unlike its' tropical relatives, can survive with and without zooxanthellae present and thus can exist in a 'bleached' state. This coral is also unique in that it experiences a dormant state called quiescence, during colder months characterized by polyps no longer responding to touch. This study examined the in situ photosynthetic yield of zooxanthellae present in brown and white colonies over the course of 10 months, including the time the corals were dormant. Results demonstrated that the photosynthetic yield from zooxanthellate colonies was consistently greater than the azooxanthellate colonies on every visit to the site. Results also demonstrated that the yield from summer months (July, August and September) was significantly greater than the yield from winter months (December and February) and that corals, when quiescent, continue to photosynthesize. These results conclude that *Astrangia poculata* continues to photosynthesize throughout quiescence and bleaching, and that there is a difference between the photosynthetic yield of zooxanthellate and azooxanthellate corals.

- P1.7 *Targeting the LasR Family of Quorum Sensing Regulators: Rationally Designed Small Molecule Inhibitors of Bacterial Virulence*  
**Author(s):** Amber Domond  
**Mentor:** Candy Hwang, Ph.D.  
**Department:** Chemistry  
**Abstract:** Antibiotics were first developed in 1930s and were not widely available until the 1940s for the treatment of bacterial infections. Currently, there are very few new antibiotics being developed. In addition, there is a rapid, growing global threat of antibiotic-resistant bacteria. An antibiotic-resistant bacterium is a bacterium that mutates and renders traditional antibiotics used to treat them ineffective. This is especially alarming because the bacterium may severely damage their hosts and spread to other victims. Due to the rising threat of antibiotic resistant-bacteria, there are efforts to create alternatives to antibiotics. Bacteria can communicate with each other by using quorum sensing. Quorum sensing is a cell to cell communication process that detects and responds to chemical signals called autoinducers. When bacterial populations grow, they monitor the accumulation of autoinducers to collectively grow or stop growing in response to them. Quorum sensing is significant to antibiotic resistance because if the bacterial populations continue to grow in a host, they can negatively affect the host and form antibiotic resistant biofilms. Our approach to counteract antibiotic resistant bacteria is to disrupt quorum sensing by using small molecules to attenuate the effects of the bacterial populations using a combination of organic chemistry and biochemistry.
- P1.8 *The Chemistry of Brewing: Exploring the Synergistic Relationship Between Science Education and Beer*  
**Author(s):** Rachel Kelsall, Dr. Jeffrey A. Webb  
**Mentor:** Dr. Jeffrey A. Webb  
**Department:** Chemistry  
**Abstract:** This research will analyze a variety of characteristics used in the classification of craft beers in order to create a standard database of values. The results of this project will be publicly accessible and adopted to science courses where the experiments performed can be used to teach in local state universities. The testing parameters will provide values regarding two primary data points studied in beer, color, based on The Standard Reference Method (SRM) and bitterness, measured in International Bitterness Units (IBU). Other distinct markers that will also be determined include: pH, alcohol by volume (ABV), and protein content (% w/w). A previous student of Southern Connecticut University, Asher Brandt, has collected values on 57 beers from 17 Connecticut microbreweries thus far. With further analysis, additional types of Connecticut beers can be added to the existing database, providing a larger population of samples as well as additional characteristics of craft brews. This will increase the confidence of results and prove the experiments' reliability so that it may ultimately be ran as a standard lab in university chemistry courses. The experiments performed will allow students to relate chemistry and biochemistry to the ever-expanding brewing industry, while giving insight to plant physiology, microbiology, chemical synthesis, and sensory analysis. Using UV spectroscopy, hydrogen ion concentration, and gravimetric distillation techniques students will be able to identify unknowns and classify a range of local brews by comparing experimental results to the given table of values produced by this research.
- P1.9 *Preparation and Screening of 5-Bismuth (III)-1,4 Disubstitued Triazoles as Anticancer Agents*  
**Author(s):** Therese Ziaks  
**Mentor:** Candy Hwang, Ph.D.  
**Department:** Chemistry  
**Abstract:** The goal of our study is to successfully make various bismuth triazoles to determine if these compounds demonstrate anticancer properties similar to common metal chemotherapies, such as platinum in cisplatin. Bismuth is a nontoxic heavy metal, where our proposed compounds containing bismuth will potentially reduce and/or eliminate the toxic side effects associated with chemotherapies, as well as exhibit anticancer activity. The successful preparation and synthesis of these compounds is the first goal of the project. Once the compounds have been prepared, they can be tested for anticancer properties, which is the second goal of the project. Various applications of chemistry will be applied such as synthesis, nuclear magnetic resonance spectroscopy (NMR), infrared spectroscopy, mass spectroscopy, thin layer chromatography, column chromatography, and extraction. This research will contribute to new research questions and hypotheses posed regarding bismuth as an anticancer agent. One goal is to determine whether the compounds can stand alone as anticancer agents or whether they can work in conjugation with common chemotherapies to reduce the toxicity. Expected outcomes for research in chemistry include an understanding of organic chemistry skills and techniques, planning and implementation of advanced organic reactions, how to predict the reactivity of a compound based on structure and functional groups present in the molecule, quantitative data analysis, and the application of chemical software programs and a greater understanding of scientific writing.

P1.10 *The Suzuki-Miyaura Reaction and Biological Activity of Oxoazaboranes*

**Author(s):** Thomas Poirier III

**Mentor:** Dr. Adiel Coca

**Department:** Chemistry

**Abstract:** The Suzuki-Miyaura reaction has produced many important organic compounds and it is critical to expand the scope as the products may have anti-bacterial properties. The first goal will be to successfully synthesize oxoazaborane compounds. This project will first focus on the synthesis of several oxoazaborane compounds. First hypodiboric acid,  $(\text{OH})_2\text{BB}(\text{OH})_2$ , and an amino alcohol will be used to synthesize a diborane (more specifically dioxazaborolidines) of this compound. The Suzuki-Miyaura reaction will be attempted with these diborane compounds, along with an arylhalide, and a nickel catalyst, in order to synthesize several aryl oxoazaborane (oxazaborolidine) compounds. There will be a focus on improving reaction yield as well as studying changing reaction conditions and how they affect the yields. The project will then test the reaction involving oxoazaborane compounds in an attempt to synthesize bi-aryl derivatives. The final goal would be to test successfully the synthesized compounds for their biological activity. The antibiotic potential of these compounds could directly contribute to curing bacterial diseases. The emergence of antimicrobial resistance raises the importance of discovering new antibiotics for overall public health.

P1.11 *Suzuki Research Thesis*

**Author(s):** Noel Womack

**Mentor:** Dr. Adiel Coca

**Department:** Chemistry

**Abstract:** The Suzuki-Miyaura reaction is important to organic chemistry because it creates C-C bonds. Forming carbon bonds is extremely important for organic synthesis for the pharmaceutical and industrial fields. The major focus of my thesis, with Dr. Coca, is to improve the yields of the Suzuki-Miyaura reaction using an oxazaborolidine derivative. Oxazaborolidine compounds have recently been found to be suitable substitutes for boronic acids and esters in the Suzuki-Miyaura cross coupling reaction, as demonstrated by Dr. Coca's research group. By adjusting the amount of reactants, type of catalyst, temperature of reaction, and time allowed for reacting, we hope to find a set of variables that optimizes the yield. If the right conditions are found to promote high yields for the Suzuki-Miyaura reaction using an oxazaborolidine compound, then, we will have expanded the scope of this widely used reaction.

P1.12 *Quantitative Analysis of GMOs in Food*

**Author(s):** Marisa Rowe

**Mentor:** JiongDong Pang, Ph.D.

**Department:** Chemistry

**Abstract:** The increased use of genetically modified organisms (GMO) has been a constant conversation in the food and agriculture world. The information on the abundance of genetically modified organisms or foods in Connecticut is lacking, which is consistent with the rest of the United States. The public opinion on the use of the GMOs, especially for human consumption, is mixed. The tide has turned to moving forward with better regulations for GMO products among the United States and the world. The current research quantitatively analyzed the GMO content in food available for consumer purchase in New Haven County, Connecticut and therefore added to the body of scientific data on the abundance of GMOs in consumer products in CT and beyond.

P1.13 *Synthesis and Antibacterial Testing of 1H 5-Aryl Substituted Tetrazoles*

**Author(s):** Melissa Palma

**Mentor:** Dr. Adiel Coca

**Department:** Chemistry

**Abstract:** Bacterial resistance occurs naturally. However, the misuse of antibiotics has made bacterial resistance occur at a much faster rate. Sometimes they are misprescribed and some people keep their leftover antibiotics and use it incorrectly. Bacterial resistance has caused 23,000 deaths in the U.S annually, therefore, new antibiotics must be developed. One compound that has shown to have antibacterial properties are tetrazoles. Tetrazoles are aromatic rings made up of 4 nitrogen atoms and 1 carbon atom. Carboxylic acids are used in many drugs. They have a physiological pH of 7.4, ionize, and are planar, and so are tetrazoles making it a bioisostere of carboxylic acids. With different substituents, tetrazoles antibacterial activity can be increased. Dr. Coca and his student researchers have found antibacterial properties in 1H 5-aryl substituted tetrazole derivatives. Tetrazole esters and aldehydes have been attempted to be synthesized to increase the antibacterial properties against *Staphylococcus aureus*, *Escherichia coli* and *Pseudomonas aeruginosa*.

- P1.14 *The Impact of Land Use Practice and History on the Physical and Hydrologic Properties of Some Connecticut Soils, Salisbury, CT*  
**Author(s):** Lawrence Grannan  
**Mentor:** Dushmantha Jayawickreme, Ph.D.  
**Department:** Earth Science  
**Abstract:** A study was designed to explore changes in soil physical and hydrologic properties across different land-uses. These land-uses include a cornfield(CF), a wooded area(WA), and a hay/pasture field(HP); each located on the floodplain of the Housatonic River in Salisbury, Connecticut. Soils in each land-use were investigated using two to three replicate 5x5 meter plots from which, soil samples and cores were requisitioned for soil moisture(SM), texture, bulk density, soil organic carbon(SOC), and other qualitative (aggregates, roots etc.) analysis. Soil infiltration rates and surface penetration resistance tests were also performed in the field to better characterize in-situ hydrologic and strength attributes of these soils. Our results show that decades of agricultural use substantially altered soil properties in corn and hay/pasture soils when compared to undisturbed wooded area soils. Furthermore, the data shows noticeable differences in soil water infiltration rates and soil moisture contents between corn and hay/pasture soils, potentially due to physiological differences between these crops, as well as associated crop and soil management practices. Except at very shallow depths, we found no significant difference in SOC between the three land-uses, which we attribute to typically low SOC accumulation rates in sandy soils. Broadly, our research suggests that long-term use of soils, even for low-impact small-scale farming leads to notable soil physical and hydrological changes. Awareness of these changes may help farmers and policy makers make sensible soil management and land-use decisions in the region.
- P1.15 *Are the Marine Animals of the Maritime Aquarium Being Exposed to Microplastics Through Their Diets?*  
**Author(s):** Sierra Mayerson  
**Mentor:** Vincent T. Breslin, Ph.D.  
**Department:** Environment, Geography and Marine Science  
**Abstract:** Herring (*Clupea harengus*) are an important commercial fishery species in New England and are used as a food source for various fish and mammals at marine aquariums around the nation. Herring filter feed on phytoplankton which may expose them to the ingestion of microplastic particles suspended in coastal waters. Microplastics may adsorb various chemicals from seawaters and the ingestion of microplastics may transfer contaminants to organisms that consume them. Microplastics are a growing problem in the world's oceans and this study will determine the presence of microplastics within these pelagic fish. Stomachs and digestive tracts from twenty wild-caught herring were analyzed in this study for microplastics. The gut contents of herring harvested from the North Atlantic Ocean near Nova Scotia were analyzed using an acid digestion process followed by the identification of microplastics using an Omano dissecting microscope. Results showed all the herring gut contents examined contained microfibrils and/or microbeads. These findings suggest that captive aquarium animals including seals and sharks are likely exposed to plastic particles through their diet. Long-term exposure to microplastic consumption may ultimately pose a threat to their health and their well-being.
- P1.16 *Long-Term Water Quality Monitoring at Long Wharf, New Haven (2012-2019)*  
**Author(s):** Renee Chabot, Cassandra Bhageloo, Mallory Breban  
**Mentor:** Vincent T. Breslin, Ph.D.  
**Department:** Environment, Geography and Marine Sciences  
**Abstract:** Long Island Sound is an ecologically diverse environment, rich with varied marine ecosystems that provide important environmental and recreational services for Connecticut residents. However, despite its ecological and environmental importance, water quality throughout the Sound is vastly under-monitored, particularly in the vulnerable, densely populated coastal embayments. The Long Island Sound Unified Water Study recently highlighted the importance of expanding and integrating water quality monitoring efforts throughout the Sound to provide uniform, reliable near-shore monitoring data to watershed managers and the broader scientific/technical community. Students and faculty of the Werth Center for Coastal and Marine Studies established a long-term water quality monitoring program at Long Wharf Pier, New Haven harbor in January 2012. Water quality testing at this location occurs once per week coinciding with high tide. Water quality and meteorological parameters measured include salinity (ppt), specific conductance (mS/cm), dissolved oxygen (mg/L), air and water temperature (°C), wind speed (m/s), relative humidity (%), light intensity (lux), secchi disk depth (m), and pH. The results of the six-year continuous water quality monitoring program will be presented and examined for violations of water quality criteria and overall trends in water quality parameters. Where appropriate, comparisons will be made to similar water quality results from other regional water quality monitoring programs (LISICOS buoy data; CT DEEP water quality monitoring).

P1.17 *Macroalgae as Bioindicators for Mercury Contamination in Long Island Sound*

**Author(s):** Cassandra Bhageloo Vincent T. Breslin, Ph.D. Sean P. Grace, Ph.D.

**Mentor:** Vincent T. Breslin, Ph.D.

**Department:** Environment, Geography and Marine Sciences

**Abstract:** The objective of this study was to determine the effectiveness of macroalgae as bioindicators for mercury contamination in Long Island Sound. The presence of a west to east decreasing trend of mercury in the Sound proportional to anthropogenic sources of contamination was also examined. Characteristics that make macroalgae good bioindicators for metal contamination include wide distribution and abundance, ease of collection and identification, year-round availability, and tolerance of a wide variety of temperatures and salinities. This study focused on determining the mercury content of seven species of macroalgae including green (*Ulva lactuca*, *Codium fragile*), brown (*Fucus vesiculosus*, *Fucus distichus*) and red (*Chondrus crispus*, *Grateloupia turutura*, *Gracilaria tikvahiae*) algae sampled from seven locations (Stamford to Westbrook) in fall 2017 along the Connecticut shoreline. Freeze-dried algae tissue samples (0.100-0.250 g) were analyzed directly for mercury by thermal decomposition amalgamation and atomic absorption spectrophotometry using a Milestone DMA-80 direct mercury analyzer. Good agreement was achieved for measured and certified mercury concentrations (18.6 µg/kg) from European Reference Material (ERM) CD200 Bladderwrack (*Fucus vesiculosus*). Results showed that macroalgal tissue mercury concentrations in Long Island Sound varied by species. *Codium fragile* tissue mercury contents were lowest and ranged from 3.5 µg/kg in Norwalk to 8.1 µg/kg in Milford. Highest measured mercury concentrations were measured in *Fucus vesiculosus* with concentrations ranging from 28.3 µg/kg in New Haven to 42.4 µg/kg in Norwalk. In general, mercury concentrations were lowest in green algae species, intermediate in red algae species and highest in brown algae species.

P1.18 *Coastal Management on an Eroding Shoreline: An Alternative Restoration Technique*

**Author(s):** Lauren Brideau

**Mentor:** James F. Tait, Ph.D.

**Department:** Environment, Geography and Marine Sciences

**Abstract:** One million people annually visit Connecticut's largest coastal park, and with over two miles of oceanfront property, Hammonasset State Beach in Madison, Connecticut, is ecologically, socially, and economically imperative to local and global communities. The Hammonasset beaches are ecosystems with terrestrial and aquatic species who rely on them as a spawning location, migration site, and home. A main concern is that Hammonasset beach is characteristically erosive, and natural preserves and development located immediately north leave nowhere for beach recession. In December 2017, the Army Corps of Engineers completed a \$9 million beach replenishment project to address the erosion by installing a 200 foot berm, that stretches .7 miles along the beach with dredged sediment from the Housatonic River. Beach replenishment, however is only a temporary solution as waves, wind and currents from Long Island Sound have the power to destroy the project. Due to a lack of fair weather waves in the Sound, the sediment is not put back onto the beach once it erodes. Results after 1 year of the replenishment completion reveal that beach width relative to the MHHW intercept was diminished on average by 17 meters. A more sustainable, cost-effective coastal management technique can be sourced through sediment reclamation which involves recycling eroded sediment from offshore sandbars back onto the beach.

P1.19 *Testing for Seasonal Beach Profiles Along the Connecticut Coast*

**Author(s):** Brooke Mercaldi

**Mentor:** James F. Tait, Ph.D.

**Department:** Environment, Geography, and Marine Sciences

**Abstract:** One of the important ecological services beaches provide is the formation of buffers against storm wave damage for coastal structures and infrastructure. Observations of the impacts of storm waves in the wake of Irene and Sandy include that wider and higher beaches provide greater protection for the communities located behind them. There is a common perspective that the presence of Long Island protects the Connecticut coast from storm damage. However, the effects of Irene and Sandy on coastal structures have revealed the possibility that Connecticut's coast operates significantly differently from open-ocean beaches. Such beaches are typically characterized by seasonal profiles. In winter months, when there tend to be more storms, large waves with short periods erode sand from beaches and deposit the sediments in offshore sand bars. In summer months, fair-weather waves with longer periods transport these sediments back onto the beaches resulting in natural replenishment and seasonal equilibrium. However, since the Long Island Sound does not have a large enough fetch to allow for sufficiently energetic fair-weather waves, the sand that is eroded by the increasingly intense and frequent storms is abandoned offshore. This research displays how the state's coastal dynamics may leave the shoreline exceptionally vulnerable to storm damage through the measurement of seasonal beach profiles. Residents along the Connecticut shoreline are faced with the increasing threat of property loss and damage. This research indicates that managing coastal sand to maintain beaches is increasingly necessary and the most sustainable and cost-effective method is likely regular sediment reclamation projects.

- P1.20 *Rapid Measurement of Meat Spoilage Using Fluorescence Spectroscopy and Signal Decomposition*  
**Author(s):** Kenneth Jimenez, Binlin Wu  
**Mentor:** Dr. Binlin Wu  
**Department:** Physics  
**Abstract:** Meat food spoilage is an ever-increasing concern in the United States, posing health risks to consumers and liabilities to meat food traders. In this study, fluorescence spectroscopy is used to study meat spoilage longitudinally for chicken meat, held near a constant room temperature at (~19°C) and in a freezer at (~-12°C). The spectral data were decomposed to uncover basis spectra which correspond to the relative concentrations of the chicken meat fluorophores tryptophan, collagen, nicotinamide adenine dinucleotide (NADH) and flavin adenine dinucleotide (FAD). This was achieved by using principal component analysis (PCA) and nonnegative matrix factorization (NMF). Changes in the relative concentrations of these fluorophores correspond to bacteria microbial metabolism. Understanding how to uncover and interpret these changes may be useful in designing a device that can show what stage of spoilage a sample of meat food is on, accurately and quickly. This device could prevent consumers from suffering food poisoning and decrease liabilities within meat trade.
- P1.21 *Cellulose Fiber Characterization: an Application of Machine Learning and Image Analysis Techniques*  
**Author(s):** Matthew Andersen, B. Ellen Scanley, T. Sadowski  
**Mentor:** B. Ellen Scanley, MD, Ph.D.  
**Department:** Physics  
**Abstract:** The availability of free, open-source software has greatly reduced the effort required in analyzing large amounts of data. This is proving to be particularly useful in the field of image processing where images have more or less been analyzed by hand. The introduction of such software allows for the possibility of more accurate analysis and increased efficiency by limiting the potential for human error. Furthermore, the ability to access and edit such software allows for the creation of algorithms better suited to one's own project. In this study we utilize freely available, open-source machine learning and image analysis software to analyze cellulose fiber images captured by a scanning electron microscope (SEM). The goal is to obtain accurate, objective, and repeatable measurements of fiber length and diameter. This is significantly complicated due to the nature of the SEM image and the geometry of the fibers. However, we show that the utilization and modification of freely available, open-source software better addresses these issues than traditional image analysis techniques.
- P1.22 *Complimentary Methods of Electron Microscopy in the Characterization of Catalytic Nanoparticles*  
**Author(s):** Patrick Murphy  
**Mentor:** Christine Caragianis Broadbridge, Ph.D.  
**Department:** Physics  
**Abstract:** In recent years, noble-metal nanoparticles have garnered significant attention for catalytic applications due to high surface-to-volume ratios afforded by reduced dimensionality. Minimizing the activation energy in a reaction involving such catalysts requires detailed knowledge of the nanoparticle size. Traditionally transmission electron microscopy is used to determine nanoparticle sizes; however, edges between different elemental nanoparticles can be hard to determine in multilayered samples. Scanning electron microscopy offers an alternate means of characterizing dense samples, providing topographical information by the emission and collection of secondary and backscattered electrons. In this study, rhodium nanoparticles on alumina supports are used as a test case to investigate complementary scanning electron and transmission electron microscopy techniques which, when combined with computational image analysis, yield more accurate, objective nanoparticle sizes and morphologies.
- P1.23 *Assessing the Impact of Implementing a Nutritional Intervention on Nursing Student Knowledge Regarding Nutrition*  
**Author(s):** Haley Townsend  
**Mentor:** Dr. Bernadette Madara  
**Department:** Nursing  
**Abstract:** Nutrition is an integral part of human existence. During the college years, increased freedom, crunched time spans, and more decision-making capabilities serve as a crucial time when dietary habits are established (Schwartz & Richardson, 2015). Appropriate distribution and understanding of nutritional information is needed amongst this vulnerable population. College students have a particularly high susceptibility for receiving inadequate and possibly inappropriate nutritional intake. The purpose of this study was to assess nursing students' knowledge pertaining to the nutritional content of selected food items and to determine if providing an educational intervention of displaying accurate nutritional content of the selected food items would influence participants' future food purchasing intentions. This quasi-experimental pre and post-test design explored the current baseline nutritional knowledge of undergraduate baccalaureate junior and senior nursing students. Nutritional knowledge and future purchasing intentions were both measured using the Caloric Knowledge and Food Purchasing Intention Survey tool developed by Dr. Victoria Zigmont (2015). Overall, students' nutritional knowledge was low regarding nutritional content. Despite being exposed to the educational intervention of displaying accurate nutritional information for the selected food items, students indicated that they were unlikely to change their future purchasing decisions.

P1.24 *Staying Healthy Through Hand Washing: First Graders*

**Author(s):** Ioanna Lemonas, Daniele White, Chelsea Armstrong

**Mentor:** Maria D. Krol, DNP, RNC-NIC, Associate Professor

**Department:** Nursing

**Abstract:** SCSU encourages students to participate in the delivery of care within a variety of environments with the goal of reducing health disparities. CT NAHN is committed to improving the health of the Hispanic community. The SCSU-CT NAHN student group with the support of CT NAHN provided health promotion and demonstrated proper hand hygiene among first graders, enhancing their skills to prevent the spread of bacteria. This project is a NAHN educational program designed to reduce the spread of bacteria and promote proper personal hygiene. Students presented the program to the first graders of Savin Rock Community School in West Haven, CT.

P1.25 *Assessing the Relationship between Exercise and Stress on Nursing Students*

**Author(s):** Evangeline Jenkins

**Mentor:** Dr. Bernadette Madara

**Department:** Nursing

**Abstract:** Stress is a normal response to change and life events. Stress affects all individuals to varying degrees and can be positive, such as eustress, or negative, such as distress (Chipas et al., 2012). Nursing students are constantly under various stressors such as maintaining high GPAs, long clinical hours, weekly exams, irregular meal times, clinical performance evaluation, finances, maintaining patient safety, dealing with pain and death, and upholding expectations from self and others. If these stressors are not managed properly, they can have an effect on the physical and psychological health of nursing students (Sang Dol, 2014). Studies have demonstrated the beneficial effects that physical activity has on health maintenance, longevity, well-being, health-related quality of life, and disease prevention (Blake, McGill, & Stanulewicz, 2017). This descriptive correlational study analyzed the effect of exercise on junior and senior undergraduate baccalaureate nursing students' stress levels. The College Student Stress Scale created by PsycTESTS was used to measure how frequently students feel distressed or anxious or question their ability. The second research tool used was the Cognitive Behavioral Physical Activity Questionnaire created by PsycTESTS to measure physical activity levels in college students. Both junior and senior nursing students were voluntarily surveyed during the Spring 2019 semester. An educational intervention entitled Exercise Changed this Neuroscientists Life and Now She Wants to Change Yours by Dr. Wendy Suzuki, was shown to the participants at the completion of the study to encourage exercise. A total of 118 nursing students participated in this study (72 juniors and 46 seniors). Data is currently being analyzed.

P1.26 *Assessing The Knowledge and Attitudes Toward Human Papillomavirus Vaccination Among College Students*

**Author(s):** Emory Farb

**Mentor:** Dr. Bernadette Madara

**Department:** Nursing

**Abstract:** Across the college population lies an increased susceptibility to sexually transmitted infections (Charyk and Sutherland, 2014). Of the possible infections that are spread through sexual contact, human papillomavirus (HPV) is the only one that can be vaccinated against. With no current treatment or cure for HPV infection, HPV vaccination serves as a primary preventative measure, therefore, being one of two preventative vaccinations to prevent cancer (Prevent Cancer Institute, 2017). Despite success rates and efficacy of this cutting-edge medical innovation, vaccination uptake against HPV remains low when compared with other recommended vaccines. This study evaluates the knowledge and attitudes towards HPV infection and vaccination, and prospect of HPV vaccine uptake amongst the undergraduate population at Southern Connecticut State University. The convenience sample of 53 undergraduates was surveyed using an online questionnaire in December 2018 and January 2019. The population studied was targeted with the incentive of appraising and educating the "catch-up" culture, or, the population of people which HPV vaccination is often offered for the last time (under age 26). While 100% of participants indicated not ever having a diagnosis of HPV or genital warts, only 47.2% identified with receiving vaccination; this poses a serious threat to health. In assessment of knowledge related to HPV, participants had a mean knowledge score of 73%, suggesting to the researcher that while less than half of the population has been vaccinated, the population is moderately informed. This study serves to promote campus health centers to provide vaccination opportunities and prompt health education.

P1.27 *Assessing The Knowledge of Nursing Students About Sexual Assault Nurse Examiners and Sexual Assault with the Implementation of a Survey Tool*

**Author(s):** Lauren Picarelli

**Mentor:** Dr. Bernadette Madara

**Department:** Nursing

**Abstract:** The initial knowledge that both undergraduate and accelerated career entry nursing students possess about the role of a Sexual Assault Nurse Examiner (SANE), and the importance of collecting evidence for a rape kit was examined. The survey tool, "Nursing Forensic Science Knowledge Exam" developed by Drake, Langford, and Young (2016) was utilized to test the knowledge of nursing students, about sexual assault and wounds sustained during sexual violence. For the purpose of this thesis, the original 50 question examination was abbreviated to 19 questions after consultation with the tool's authors, and distributed to both undergraduate junior nursing students and accelerated career entry nursing students. Statistical analyses including box plots and standardized t-tests were used to evaluate if there was a correlation in higher scores based on either gender or grade level. T-test analyses found that the scores were relatively similar across both genders and both grade levels. Although there was no statistically significant difference between genders and grade level it was apparent that students did not have a strong knowledge base of SANE as demonstrated by the survey scores. Out of a possible score of 100%, the highest score attained was under a 50%. The scores ranged from 10%-49%. The results of this study indicates that nursing students need theoretical content related to trauma care and the role of a hospital based sexual assault nurse examiner.

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

### Ballroom A

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O2A.1 *The Impact of a Proton Pump Inhibitor on the Growth and Shell Aragonite/Organic Ratio of the Invasive Clam *Corbicula fluminea* (Müller)*

**Author(s):** Stephanie Richard

**Mentor:** Robert S. Prezant, Ph.D.

**Department:** Biology

**Abstract:** Pharmaceutical pollution is a major issue impacting freshwater ecosystems. Most municipal water treatment plants are relatively ineffective in removing pharmaceutical compounds from wastewater and humans rarely metabolize all of the pharmaceutical drugs they ingest. Excreted residual pharmaceutical drugs and the drug's metabolites find their way through the treatment plants and back into the environment. Many studies have demonstrated how these drugs are impacting animals of affected ecosystems. Proton pump inhibitors are a class of pharmaceuticals that are used by an estimated 15 million Americans (2013) to reduce stomach acid secretion and treat GERD symptoms. The presence of proton pump inhibitors in natural waterways has been noted. Since acid secretion plays an important role in shell biomineralization and calcification, we sought to determine how the proton pump inhibitor known as omeprazole might impact shell development and overall growth rates of the invasive clam *Corbicula fluminea*. One hundred seventy-one clams were collected from the Wepawaug River in Milford, CT. In groups of 18 and with lengths ranging from 6.7 mm to 17 mm, clams were exposed to omeprazole concentrations of either 0.0 ng/L, 5 ng/L, 10 ng/L, or 15 ng/L. Pre- and post-experimental mass, length, width, and breadth measurements were taken in a 32-day experiment. The data suggest that higher concentrations of omeprazole increase rate of growth in terms of length, but not mass nor percent organics. A trend was seen with decreasing mass/length inversely correlated with percent shell organics.

O2A.2 *In vivo Diagnosis of Mouse Skin Carcinoma using Stokes-Shift Fluorescence Spectroscopy and Machine Learning*

**Author(s):** Kenneth Jimenez, Binlin Wu

**Mentor:** Dr. Binlin Wu

**Department:** Physics

**Abstract:** The purpose of this study is to develop an in vivo optical biopsy technique for early detection of skin cancer based on stokes shift spectroscopy (SSS) technique. Dimethylbenz(a)anthracene (DMBA) treated mouse skin tumor model was used in this study. Thirty-three (33) DMBA treated animals and six (6) control animals were used in the study. The DMBA treated animals included 10 cases of hyperplasia, 10 cases of dysplasia, and 13 well-differentiated SCC (WDSKC) skin cancer, where hyperplasia and dysplasia are both early stages of skin cancer. Synchronous scan spectra were measured by scanning both excitation and emission wavelength simultaneously with a fixed wavelength interval (i.e.  $\Delta\lambda = 20$  nm in this study) in vivo from the 39 animals. The spectral data are analyzed using multivariate data analysis techniques such as Principal component analysis (PCA) and nonnegative-matrix factorization (NMF). The abundances of basis spectra retrieved by PCA or NMF were considered as features for classification. Support vector machines (SVM) were used to classify the samples. The analysis suggests that tryptophan, collagen, and NADH may be the key fluorophores that undergo changes during tissue transformation process and hence can be targeted as tumor markers for early neoplastic changes.

### O2A.3 *MoRPi (Mobile Raspberry Pi)*

**Author(s):** Eric Barbin

**Mentor:** Dr. Imad Antonios

**Department:** Computer Science

**Abstract:** The Raspberry Pi is an extremely popular computing device commonly used by computer scientists, electronics hobbyists, and students of various technology-based disciplines. The Pi is often used in student projects such as robotic cars and in practical applications such as web servers and home security systems. While developing a project with the Pi is a great way to learn about electronics and computer programming, it may be intimidating for individuals who possess little to no knowledge in these areas. Therefore, the purpose of the MoRPi (Mobile Raspberry Pi) Application is to simplify the Raspberry Pi project development process. MoRPi is an Android application which allows a user to develop and run a Raspberry Pi project directly from their smartphone. From within the application, the user can open and run a predefined project template or develop a custom project by creating the wiring configuration, adding hardware components, and changing the state of the GPIO pins, all on an intuitive interface representing the Pi breadboard. The behavior of each hardware component can be modified either through a list of modification options, or by editing the project source code directly. Once the user has developed the project configuration from within the application, they can simply add the wires and hardware components to the physical Pi breadboard and run the project from their smartphone. This application greatly simplifies the project development process and serves as a gentle introduction to electronics and computer programming for individuals with limited knowledge of these topics.

### O2A.4 *Application of Block Chain Technology in a Web Application*

**Author(s):** Jason Ponce

**Mentor:** Dr. Imad Antonios

**Department:** Computer Science

**Abstract:** Block chain technology is a series of blocks with information, connected together in a link with each block pointing to the prior block. Data stored in the block chain would be rendered immutable, for each block chronically set after the block would need to be recalculated and updated. This creates a public ledger, of which IBM utilizes for their Food Trust block chain technology. Food Trust provides users in food supply chains, access to data of the complete history of the products. Allowing for trends on food safety to be predicted, data on the growth of the products, and trust to be built. The purpose of this project is show case a use-case scenario of block chaining in a client-server web application. Modern web apps store their user's information on one central database with possible backups. My project, a digital donation website HeroesDonate.org (pending), aims to decentralize our digital codes and upload them into the block chain. By incorporating block chain technology, the digital codes can be encrypted and publically kept in a ledger allowing for trust in the website admin and the public that the codes are being donated for their intended use.

### O2A.5 *Deep Learning for Serial Fusion Based Smartphone User Authentication*

**Author(s):** Tiffanie Edwards

**Mentor:** MD Shafaeat Hossain, Ph.D.

**Department:** Computer Science

**Abstract:** Biometric security systems are taking over the role of traditional verification and authentication methods. In order to increase the security and performance of biometric systems, the fusion of multiple biometric modalities was introduced. Usually the fusion of multi-modal biometrics is performed with parallel fusion, meaning each biometric modality must be submitted by a user before a verification decision is made. However, multi-modal parallel fusion has demonstrated some drawbacks, such as increased verification time, decreased user convenience. To combat these drawbacks, serial fusion was introduced, which sequentially takes the user's biometric modalities fuses them together. After each modality is taken, a verification decision is either made or an additional biometric is requested. Multi-modal serial fusion has been thoroughly investigated using traditional machine learning techniques. This research study proposes to develop a biometric system that utilizes deep learning techniques to extract features and implements serial fusion at the score level in smartphone user authentication. This multi-modal classification will be done with the iris, facial, and fingerprint biometrics because a smartphone already has the three sensors needed for each. Scores will be generated from each biometric trait sequentially and also fused sequentially. Due to the use of serial fusion instead of parallel fusion, this system still offers a more user convenient biometric system. Also, because a verification decision is made once the system has sufficient proof of the identity of the user, it is expected the security measures of the system still perform better than biometrics systems that do not use fusion.

O2A.6 *Socio-Spatial Impacts and Legacy of the 2010 FIFA World Cup in Cape Town, South Africa*

**Author(s):** Philip Sarrazin

**Mentor:** C. Patrick Heidkamp, Ph.D.

**Department:** Geography

**Abstract:** In 2010 South Africa hosted the FIFA World Cup and as a result the city of Cape Town—one of the host cities—underwent massive redevelopment of the city including the construction of the new Cape Town Stadium and other related infrastructure projects such as the N2 Gateway. Both the construction of Cape Town Stadium in the Green point neighborhood and along the N2 Gateway have had major impacts on the city and its FIFA World Cup Legacy. The overall research project aims to analyze the socio-spatial impacts of these developments and their legacy using a mixed-methods approach involving mapping and field observation. This paper will outline the results of my research conducted during a SCSU lead class trip to Cape Town, South Africa in December-January 2018-2019.

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**1:30 p.m. – 3:30 p.m. | Art Installations and Presentations – Session 2B**

*Buley Library Art Gallery*

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A2B.1 *An Artistic Representation of the Realities of Mental Health*

**Author(s):** Madison Caruso

**Mentor:** Camille Serchuk, Professor of Art & Assistant Director, Honors College

**Department:** Art

**Abstract:** My work - An Artistic Representation of the Realities of Mental Health - is both an analysis of mental health disorders and a personal exploration of the disorders that are representative of myself and my family. I currently have diagnoses of ADD and Anxiety which are both represented in this show. However, of the nine disorders present, family members of mine suffer with eight of them. I have grown up around different extremes of these disorders and have had varying understandings of all of them. I am sure that my personal fascination with mental health disorders comes from a deeper desire to understand those closest to me, including myself. My show has been influenced by artist like Yayoi Kusama, Mark Rothko, and Jean-Michel Basquiat. All of these artists, like many others, have struggled with one or more mental health disorders. Kusama has been creating works from a mental institution in Japan since 1977 and has been quoted many times explaining that if it weren't for art she would have killed herself. Rothko committed suicide in 1970 after struggling with alcohol and prescription drug addiction. Basquiat died of a heroin overdose at the early age of 27. All of these artist chose art to produce an abstracted view of their surroundings, helping those around them better understand their view of the world. An Artistic Representation of the Realities of Mental Health uses a combination of both paintings and prints to bring more awareness to a topic that until recent years was considered taboo. Many people struggle with their perception of mental health and how it affects the individual. Filling an entire space with mental health information makes viewer unable to shy away from the discomfort people often feel towards the topic. The use of primary colors is an intentional nod to the belief that mental health disorders are an unavoidable part of life. Abstracted form is used to disguise serious information as a pleasurable viewing experience, therefore coercing the viewer in to interact with the works further.

A2B.2 *On a Dive*

**Author(s):** Arianna Alamo

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** As an artist, I often find myself returning to imagery that I clung to as a child. While I indulged in cartoons like all other kids, I spent an equal amount of time watching nature programs on TV, flipping through National Geographic magazines or nature encyclopedias. I've allowed myself to return to a state of childlike curiosity when looking for inspiration, rather than continuing to go through the motions of collegiate research. I've always been intrigued by the animal kingdom, with a special connection to ocean life; always wanting to know more about the things that come out of the water. My project is a series of linocut and etching prints of the ocean dwellers that have peaked my intrigue throughout my life. I have decided to represent the lesser known and more curious creatures, like the spanner crab and the chambered nautilus, as well as the more commonly known animals like clown fish or an octopus. My goal with this series is to remind people that we are not the only beings on this planet. The ocean makes up over seventy percent of the planet, yet we cast so much disregard to it. I hope that they remember how hard the ocean and it's creatures work to maintain a balance for us, reminding us that we should do the same for them. "

A2B.3 *Healthcare Systems and Patient Outcomes in Several Countries*

**Author(s):** Chelsea Armstrong

**Mentor:** Camille Serchuk, Professor of Art & Assistant Director, Honors College

**Department:** Art History

**Abstract:** I chose this topic because I am interested in international health policy. My project consists of a video presentation, a blog, and a reflection paper about my experience. The countries studied are the Netherlands, Italy, France, Greece, and Peru. My blog features a diary with photos, recounting my time abroad. The purpose of the blog is to share my experiences with others and highlight the valuable lessons I have learned. My video presentation examines the differences in opinions among members of the public regarding their own healthcare system and health outcomes in their native country. During my study abroad program, I took an independent study course which covered each of my host countries' healthcare systems in detail. After reading about the countries, I set about to learn more apropos their healthcare systems, in an interactive manner. In each country, I interviewed one or two locals and asked them a similar set of questions about their healthcare system and health outcomes. Additionally, I incorporated video footage of everyday life in each country to give the audience some context to the interviews.

A2B.4 *Road to restore*

**Author(s):** Amber Pindulic

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** I use photography as my inspiration for little things in life and photographing them is my way of holding on to memories or creating them. Being the only child my parents would photograph me growing up, and now my role in life is to photograph them. One of the most inspired memories growing up was being around my father and watching him fix cars. I have been thinking and talking about cars ever since my first memories. The conceptual process of my project consist of old junk cars and repaired classic cars. These once pristine and beautiful machines were once running and now rotting in junk yards or a field. Ever since my father became ill, I had more drive to pursue my passion for photographing restored classic cars. As a photographer, cars and car related events are without question great material for photographic imagery. The metaphorical symbol of the engine is my father's heart, even though it stopped running at one point, he still consist on making himself stronger. The strength of an engine is what makes the car run, time and time again taking care of the engine will make the car run longer. A collection of medium format film photography of junk and classic automobiles, exploring the line, form and sensuality of design of classic cars.

A2B.5 *Aches and Pains*

**Author(s):** Kevin Scotton

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** For my current project, I am taking a deeper look at myself and staging honest self-portraits. I will be emphasizing body posture, motion, and facial expressions to show the "Aches & Pains" I have been experiencing. My intention is to leave the photos ambiguous, and ominous at the same time, a feeling that I have felt about my own body for quite some time. The chiropractor has been a friend of mine since age 13, and I'm not convinced he has helped much, if at all. Bone cracking has become more common than drinking coffee in my life, and it's not going away anytime soon.

A2B.6 *Meditations*

**Author(s):** Maya Dunn

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** Meditations is a collection of teapots for two. The process of making pottery can be as much a form of meditation as the act of pouring and drinking tea. The collection of these vessels is a celebration of the harmony of the four elements. Earth: unavoidable as the pottery is born from the Earth. Water: suspended in the clay, the glaze, and the tea itself. Fire: used to fire pottery and heat the tea. Air: an element that makes firing possible; a breath blown across a hot tea cup before taking a sip. These tea sets should evoke a sense a peace and connection to nature, as this is the mindset they are created in. Their forms are simple, thoughtful, architectural and minimalistic. The glazes used give these vessels the sense of having been born from the earth, strongly connected to their origins. These vessels are fully functional and meant for personal ceremonial use to celebrate the mundane and beauty in everyday life.

A2B.7 *Self Conflict*

**Author(s):** Angela Byrd

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** This series of oil paintings focuses on portraiture. I'm interested in the human face and how everyone's face is custom to them. Being able to capture peoples' emotions in a moment of time and translating their expressions to canvas with the addition of color allows me to create an eye-catching piece. My goal for this project is to be able to communicate the

importance of expression through portraiture. Without expression, we would have no sense of emotion. By painting faces, while including specific details, and paying close attention to fine lines it allows me to engage with them more intimately. It is a reminder to people that everyone is unique in their own way from the faces they make, to their behavior, to the colors associated with that mood, and beyond. When it comes to facial expression and emotion, everyone is different, and so I paint this series to keep these characteristics in mind.

A2B.8 *Little Boxes*

**Author(s):** Reena Yu

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Department:** Art

**Abstract:** "Little Boxes" is a series of paintings of suburban neighborhoods with houses that are made up of cardboard boxes. Inspired by the song "Little Boxes" by Malvina Reynolds, the theme of the series is conformity, specifically in a society where all citizens are expected to live the same lives and live in the same type of houses. The houses are identical and made up of cardboard to represent the idea of living in an artificial and perfect world that we are pushed to believe is the right way of livelihood. A model was built out of cardboard and painted with acrylic paints for reference, and the paintings are done with oil paints.

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## 2:00 p.m. – 3:30 p.m. | Poster Presentations – Session 2

*3<sup>rd</sup> floor walkway, Adanti Student Center*

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P2.1 *Using Volunteer Experiences to Enhance Clinical Learning in the Medical Setting: Outcomes and Benefits for the Undergraduate Student*

**Author(s):** Katherine Adams

**Mentor:** Heather Warner, Ph.D., CCC-SLP

**Department:** Communication Disorders

**Abstract:** The Neuro Speech Program at Yale New Haven Hospital is a volunteer program developed as an opportunity for undergraduate students to gain experience within a medical setting. This program introduces volunteers to the expectations and demands of a medically-based speech-language pathologist (SLP) and provides an opportunity for the volunteer to interact with patients who have a variety of communication disorders. This study investigated the clinical learning outcomes of 17 Communication Disorders students from Southern Connecticut State University who volunteered for at least 20 hours with the Neuro Speech Program at Yale New Haven Hospital. Results from volunteer responses were compared to 17 students from Southern Connecticut State University who are at the same academic level within the Communication Disorders Department, serving as the non-volunteer control group. A mixed method approach of both qualitative and quantitative data, via pre- and post-assessment and report of tasks, was used to analyze participant responses. The study aimed to determine if this experience targeted clinical learning outcomes which include comfort, understanding, working knowledge and confidence interacting with patients and professionals in the medical setting. Analysis of pre- and post-assessment surveys found that volunteers gained: comfort assisting the SLP and other professionals, an understanding of the types of activities within the medical setting, and working knowledge of demands and expectations of a SLP.

P2.2 *Increasing Language for Communication in Children with ASD Using Sign Language*

**Author(s):** Rachel Iassogna

**Mentor:** Barbara Cook, Ed.D., CCC-SLP

**Department:** Communication Disorders

**Abstract:** Individuals with ASD may struggle to develop spoken language. Given that children with ASD typically have strong visual processing skills, the use of a visually presented system of language may support both their receptive and expressive skills. Signed Exact English (SEE) is a visual form of language that directly matches spoken English. Exposing a child with ASD to spoken language with a direct correlate of visual language is likely to increase receptive language skills, ultimately leading to increased expressive language skills. Limited research has been conducted on the use of visual language systems for children with ASD and language delays. However, research has concluded that sign language can have positive impacts on typically developing children's language and academic skills, resulting in significant increases in both. It is therefore reasonable to believe that sign language could have the same benefit for children with ASD. Adhering to a single subject alternating treatment research design, the research is investigating whether SEE has the potential to increase receptive and expressive language vocabulary for children with Autism Spectrum Disorder (ASD). The alternating treatments are SEE and pictorially developed visuals delivered during planned Speech-Language Therapy sessions. Participants are exposed alternatively to sessions using SEE and to sessions that use pictorially developed visuals, both paired with spoken language, to teach vocabulary. The data gathered will be analyzed to determine which language intervention method has the greater benefit towards increasing the child's vocabulary.

P2.3 *“There will be more of us”: Influences on African American Teachers Retention in Public Schools*

**Author(s):** Victoria Louis

**Mentor:** Jessica Powell, Ph.D.

**Department:** Curriculum and Learning

**Abstract:** This qualitative research study explores the experiences of three African American teachers who have taught for over four years in a public school in a medium size city in New England. This study responds to a gap in the literature on Black teachers by seeking to understand the key factors that influence their retention and allow them to continue in the field of education. Findings suggest Black teachers face many barriers within the field such as racism towards themselves and the racism that they believe students of color face in a broken educational system, but there are factors such as a strong sense of community and influential mentors or leaders in their life that African American teachers can attribute to their retention.

P2.4 *The Theory and Practice of a 21st Century Civics Curriculum*

**Author(s):** Alexandra Takacs

**Mentor:** Elizabeth Kalbfleisch, Ph.D., Associate Professor of English

**Department:** English

**Abstract:** I developed a detailed unit plan for teaching the Second Amendment and gun control by building a “knowledge-rich, carefully sequenced” reading list and guided reading tasks to go along with each reading. I chose articles or excerpts from reliable sources because they offer multiple diverse perspectives and are current and relevant events happening today. I emphasize the importance of using current reading because these updated events happening right now are essential for students to understand the world in which they live and will vote, helping to generate meaningful learning. Updated content creates a connection for the student to the material which can be strengthened through the use of social media. Using social media as a platform for delivery is essential in the 21st century United States, and I incorporate social media as a necessary tool in Civic Education. Not only will students be more engaged, but they will enjoy learning and researching civics, which will create a positive self-image as a future citizen. Knowing the information, rights, and responsibilities needed to be an informed citizen is essential for civic education, so if social media is used as an opportunity to find that information, students will have a better outlook on their contribution to the government—or that they actually contribute at all. My curriculum incorporates different in-class activities that will promote good civic habits in students.

P2.5 *The Lost Story of the African American Experience*

**Author(s):** Jamil Harp

**Mentor:** Dr. Cynthia Stretch

**Department:** English

**Abstract:** This project is a current work in progress to document and better understand the relationship between my family genealogy and the U.S African American experience past 1860. Prior to 1860, millions of African American families are lost in the legacy of slavery without knowing what actually occurred before, thus losing years of unheard stories. Completing this research provides a lens into millions of the lives of black families in the south including my family during those times. My family is from Newberry, South Carolina, and I have been tracing their lives, the history of Newberry, and the eventual migration to the northeast. These results will assist in explaining race relations, generational problems, and communication issues to hopefully help understand inequity of the black community and to heal the wounds of the past.

P2.6 *Situation Analysis in the Business Writing Classroom*

**Author(s):** Ariana Bengtson

**Mentor:** Jason Lawrence, Ph.D.

**Department:** English

**Abstract:** This research project will evaluate the impact a document’s audience has on the writer’s voice, style, and tone. In professional communication, writers must constantly make choices based on the rhetorical situation they are in. These choices can make or break the effectiveness of an argument or the clarity of a communication. Teaching students how to make these rhetorical decisions is at the heart of business writing courses. In order to communicate effectively, students must learn to appropriately address their audience, but business writing students are caught in a bind. They must write to fulfill an assignment’s requirements while simultaneously learning how to address a professional audience outside the classroom. My group and I worked on our drafts, we had to make choices about our argument and voice based on our audience. As a group, we had never written to an administrative audience before, so we were still wired in the mindset of writing for a professor and a grade rather than for a professional audience and a professional purpose. We struggled with balancing our different tones into a coherent, singular voice. Sometimes, our writing was reflective and conversational, while other times, it was expository and formal. The reflective pieces were characteristic of a student writer, while the expository pieces were characteristic of a professional writer. The ability to communicate effectively both within and outside the classroom is imperative for academic and professional success. Finding where this balance is struck is at the core of this research.

- P2.7 *Dante Alighieri / Dante's Inferno*  
**Author(s):** Tommi Crowley  
**Mentor:** Prof. Giuseppina (Pina) Palma  
**Department:** Italian  
**Abstract:** My poster is based on La Divina Commedia by Dante Alighieri. I will focus on the levels of Inferno. Each level is unique, in which offer different experiences. My poster will individually explore what they entail and represent
- P2.8 *A Cross-cultural Study of Women's Role in Advertisements in the US and France*  
**Author(s):** Christine Stackhouse  
**Mentor:** Yue (Christine) Liu, Assistant Professor, Department of Marketing, School of Business  
**Department:** Marketing  
**Abstract:** This cross-cultural research analyzes the portrayal of women in advertisements in the United States and France. In the United States, advertisements portray women in a degrading and submissive way. France, on the other hand, tends to have more sexual cues in ads due to their open and causal relationship with their bodies. The paper discusses the progression of women's rights in both countries and how it played a part in their portrayal in print advertisements over the years. The paper then assess the impact portrayal of women have on consumer behavior including attitudes towards advertisements and brand and purchase consideration. A series of print advertisements will be included.
- P2.9 *Non-Medical Opioid Use and Self-Concept Among College Students*  
**Author(s):** Jillian Chambers  
**Mentor:** Dr. Kenneth S. Walters, Ph.D.  
**Department:** Psychology  
**Abstract:** This study examined the association between opioid misuse and self-concept among college students. It was anticipated that students engaging in opioid misuse would report poorer global self-worth and self-perceived competence in various domains of life functioning. A total of 1444 undergraduate students (484 men, 960 women) participated and ranged in age from 18 to 24 years. Opioid use was assessed with the Drinking and Drug Habits Questionnaire (DDHQ; Hammers & Suhr, 2010), by which students reported whether they had ever misused opioid pain medications (e.g., oxycodone, hydrocodone, etc.) without a prescription since entering college. Self-concept was assessed using the Self-Perception Profile for College Students (SPPCS; Neemann & Harter, 1986). It includes 9 scales assessing self-perceived competence across multiple areas of college student functioning. The final sample consisted of 1444 participants, including 1206 non-users and 238 opioid misusers. Results indicated that students misusing opioids reported significantly lower global self-worth scores compared to peers, as well as poorer parental relations and behavioral conduct. They did not differ from non-using students in any of the other areas of self-concept that were assessed. Current findings suggest that opioid misuse in the college setting is likely associated with conduct problems, rule violations and poorer self-regulation. Secondary to that, however, it makes sense that their relationships with their parents also tends to be compromised. These findings have implications for college student personnel and others working with this population.
- P2.10 *Non-medical Opioid Use and Conduct Problems Among College Students*  
**Author(s):** Amanda Jurgens  
**Mentor:** Dr. Kenneth S. Walters, Ph.D.  
**Department:** Psychology  
**Abstract:** The purpose of this study was: (a) to extend the association between substance misuse and conduct problems to college students, and also (b) to extend those findings to the non-medical use of opioid medications. It was expected that students misusing opioids would have higher rates of various conduct problems and rule violations in the college setting. Participants included 1458 college students, aged 18-24 years. Students completed the Drinking and Drug Habits Questionnaire (DDHQ; Hammers & Suhr, 2010), by which they reported whether they had ever misused opioid medications without a prescription since entering college. The final sample consisted of 239 opioid misusers and 1219 non-users. Students also anonymously reported whether they had ever committed any of 12 conduct problem offenses since entering college. Those included: stealing, physical fighting, speeding, reckless driving, DUI, selling illegal drugs, giving away illegal drugs, selling prescription medications, giving away prescription medications, cheating, plagiarism, and receiving college disciplinary action. Results indicated that opioid misusers were broadly more prone to all conduct problems assessed, compared to non-users. A majority of students opioid misusers reported stealing, giving away illegal drugs, and cheating. Over one-third reported a history of physical fighting and selling illegal drugs in college. Elevated rates of the following offences were also reported by students in the "opioid misuser" group: speeding, plagiarism, selling, and giving away prescription medications, and receiving college disciplinary action. Finally, those having misused opioids also reported higher rates of reckless driving and DUI, although to a lesser degree to other offences.

P2.11 *Successful Aging and Inter-Generational Experience*

**Author(s):** Allison Butwill, Lauren Brady, Shantele Avila, Hannah Amabile, Angela Bozzi

**Mentor:** Dr. Patricia Kahlbaugh

**Department:** Psychology

**Abstract:** The well-being of senior citizens is a pressing issue as the population of those over 65 is projected to nearly double by 2060. Because of the growth in this sector there will be increased need for seniors to be helped with tasks associated with daily living and therefore greater demands for young adults to enter into professions related to gerontology. The present study investigates if participating in a seven week long shared activity program called SAGE will result in positive outcomes for older individuals and college students alike. At the end of the seven-week experience, compared to the control group, we hypothesized that older participants will have increases in memory, subjective well-being, wisdom, positive emotions, identity coherence, and decreases in aging stereotypes. We hypothesized that college students will experience fewer age related stereotypes and a greater interest in working with older people. The project is ongoing; however, we will be presenting a qualitative analysis of weekly journals kept by five students. These journals record students' observations of their interactions with the older person. In particular, we will be highlighting evidence of increased positive emotion between the dyads, increased identity coherence and wisdom within the older person and decreased age related stereotypes over the 7-week period.

P2.12 *Non-Medical Opioid Use and Antisocial and Aggressive Traits Among College Students*

**Author(s):** Michael Chernesky

**Mentor:** Dr. Kenneth S. Walters, Ph.D.

**Department:** Psychology

**Abstract:** The purpose of this study was: (a) to extend research on the misuse of opioid pain medications among college students, and also (b) to examine how such opioid misuse is related to both antisocial traits and aggressive behavior in college. It was expected that students prone to opioid misuse would demonstrate greater antisocial traits, as well as greater aggressive behavior. Participants included 1456 college students, aged 18-24 years. Students completed the Drinking and Drug Habits Questionnaire (DDHQ; Hammers & Suhr, 2010), by which they reported whether they had ever misused opioid medications without a prescription since entering college. The final groups included 239 opioid misusers and 1217 non-users. Antisocial behavior and aggression were assessed using scales from the Personality Assessment Inventory (PAI; Morey, 2007). The antisocial behavior scale included subscales reflecting antisocial behavior, egocentricity, and stimulus-seeking. The aggression scale included subscales for aggressive attitude, verbal aggression, and physical aggression. Students misusing opioids scored higher on both scales and all subscales, compared to non-using peers. They reported greater antisocial behavior, egocentricity, and stimulus-seeking, as well as greater aggressive attitude, verbal aggression, and physical aggression. These findings demonstrated that college students misusing opioids are more prone to engage in antisocial behavior, especially rule violations. To a lesser degree, they are also more prone to display aggression, especially physical aggression. College campuses should provide better screening for both opioid misuse and conduct problems among college students. Intervention and treatment programs should be individualized, with emphasis on behavioral self-regulation and reduction in aggressive behavior.

P2.13 *Non-Medical Opioid Use and Other Substance Use and Abuse Among College Students*

**Author(s):** Paul McKee

**Mentor:** Dr. Kenneth S. Walters, Ph.D.

**Department:** Psychology

**Abstract:** The purpose of this study was: (a) to extend prior research on college student prescription medication misuse specifically to the opioids; and (b) to assess the association between opioid misuse and alcohol and drug abuse symptoms, as well as the use of other substances. Participants included 1458 college students, aged 18-24 years. Students completed the Personality Assessment Inventory (PAI; Morey, 2007), to assess symptoms of alcohol abuse and drug abuse. They also completed the Drinking and Drug Habits Questionnaire (DDHQ; Hammers & Suhr, 2010), by which they reported whether they had ever used each of 13 separate classes of substance since entering college. The final groups in this study included 239 opioid misusers and 1219 non-users. Results indicated that students misusing opioids reported higher rates of alcohol abuse and drug abuse symptoms compared to non-using peers. They also reported significantly higher rates of use of all but three of the drug classes assessed. Exceptions included tobacco, alcohol, and cannabis. The largest differences were for the barbiturates, opiates (e.g., heroin, morphine, codeine), and amphetamines. These findings suggest that students misusing opioids are also prone to use the "harder" drugs of abuse. It seems likely, from these results, that students misusing opioids are much more interested in using more powerful substances with higher abuse potential, compared to their non-using peers. They also appear prone to the use of a broader variety of substances. Finally, this is consistent with their substantially higher drug abuse symptom scores on the PAI.

P2.14 *The Prevalence Of Unconditioned Anxiety In Offspring Of Alcoholic Sires*

**Author(s):** Brooke Lotto

**Mentor:** Dr. Michael Nizhnikov

**Department:** Psychology

**Abstract:** Countless research findings have been published concerning the consumption of alcohol during pregnancy, while little research has been conducted indicating the implications of alcohol consumption, specifically in the severity of alcoholism, prior to pregnancy from both the mother and the father. While alcoholism contains a genetic factor in some circumstances, it is proposed that alcoholism may also cause transgenerational inheritance of cognitive defects. With the prevalence of alcoholism in today's society, as well as anxiety, this research project proposes to determine if a possible correlation exists between paternal alcoholism and the prevalence and severity of unconditioned anxiety in offspring in a rodent model. Anxiety was measured by a light-dark box test, while alcohol consumption was measured by percent body weight gain. Significant findings were determined with an increase in alcohol preference in those born to sires exposed to alcohol compared to water and control. Significant findings were also determined with a decrease in anxiety in those born to sires exposed to alcohol compared to water or control. The results were analyzed using an ANOVA, with significant findings examined through a post hoc analysis.

P2.15 *Understanding Metaperceptions Within Interviews: A Study Of Self-Esteem, Paranoia, And Performance Anxiety*

**Author(s):** Brian Petrucci, Pete McEachern

**Mentor:** Christopher J. Budnick, Ph.D.

**Department:** Psychology

**Abstract:** Interviews are prerequisite for most jobs and interviewees must firmly understand what is expected during this process. Specifically, interviewing "involves the interviewee engaging in some level of conversation, interpreting the type of information being requested by the interviewer, recalling relevant information, choosing among the options in memory, and clearly communicating this information" (p.355). Interviewees must quickly internalize and adapt based on metaperceptions; that is, what they believe the interviewer thinks of them. We suspect that there is a relationship between feedback and metaperceptions that depends on pre-existing self-esteem or paranoia levels. Specifically, we predicted that high self-esteem (low paranoia) weakens the relationship between negative feedback and negative metaperceptions. Undergraduate participants (n = 130) completed simulated interviews after random assignment to receive negative, ambiguous, or positive nonverbal feedback from a white, male confederate posing as a career counselor. Participants completed pre-measures of trait self-esteem and paranoia. Following the interview, the confederate interviewer assessed participant interview performance, while the participant completed a measure of meta-perceptions of the interviewer. Hierarchical linear regression will test whether self-esteem, paranoia, and feedback conditions interact to significantly predict metaperceptions and performance. Specifically, we expect that those low in self-esteem and high in paranoia will have more negative metaperceptions in the two non-neutral conditions. However, those higher in self-esteem and lower in paranoia will have metaperceptions more reflective of the feedback condition, with the most positive metaperceptions coming in the positive feedback condition. This research will help inform future research and interventions to improve interview performance.

P2.16 *Analyzing The Effectiveness of an Indirect-Contact Intervention on Reducing Mental Health Stigma in College Students*

**Author(s):** Madison Feshler

**Mentor:** Dr. Jessica A. Suckle-Nelson

**Department:** Psychology

**Abstract:** Mental illness is a common stigmatized condition (Stout, Villegas, & Jennings, 2004), and many people suffering from mental illnesses not only have to cope with their illness, but also experience shame, exclusion, and negativity in response to their diagnosis (Thornicraft, Mehta, Clement, Evans-Lacko, Doherty, Rose, Koschorke, Shidhaye, O'Reilly, & Henderson, 2016). Previous, but limited, research shows that indirect-contact intervention can help to reduce mental health stigma. Therefore, I looked at the effectiveness of an indirect-contact intervention on reducing mental health stigma in college students. Participants are PSY 100 students (n = 83) from Southern CT State University. Because mental health stigma has shown to be a barrier to treatment and to lead to negative effects for those living with mental illness (Dickerson, et al., 2002; Link, et al., 1999), I chose to focus globally on mental illness. I will use a two-way, mixed-methods analysis of variance to analyze my data. I expect that after watching the experimental video, participants will have reduced levels of mental health stigma compared to those in the control condition. I also expect that prior exposure to mental illness will moderate the change in the level of mental health stigma. If this research study is effective in reducing mental health stigma, it will add to the current literature about the effectiveness of indirect contact interventions, and it can be support for possibly implementing mental health advocacy videos in classes or workshops to bring awareness to the topic and reduce the negative stigmas attached to mental illness.

P2.17 *Examining the Diagnostic Utility of CELF-5 Sentence Comprehension*

**Author(s):** Dayana Lituma-Solis

**Mentor:** Cheryl C. Durwin, Ph.D.

**Department:** Psychology

**Abstract:** At a Title 1 school, SCSU READS Lab Undergraduate Research Assistants administered the Clinical Evaluation of Language Fundamentals (CELF-5) Sentence Comprehension subtest as part of a larger literacy-based intervention, to 50 kindergarten students within three classrooms. The CELF-5 is an individually administered clinical assessment designed to screen school-aged students for language disorders. Children are shown four pictures, while an examinee reads a 4-sentence proctor and then asks the child to select which picture matches the sentence provided. I am examining frequencies of errors in the categories of language (e.g. negation, relative clause, passive sentence, etc.), both overall frequencies and separately by classroom. I am also looking at how diagnostic the CELF is in regard to the distinct language categories being assessed. Implications of data will be used to inform teachers on what content areas may require further instruction, and will be utilized to select students for a larger intervention study.

P2.18 *A Mini-Meta-Analysis of the Efficacy of Dialogic Reading on Silent Reading Efficiency and Comprehension in First Graders*

**Author(s):** Garret Masocco, Mary Spodnick, Joshua Fraser

**Mentor:** Deborah A. Carroll, Ph.D.

**Department:** Psychology

**Abstract:** The SCSU R.E.A.D.S. (Reading Evaluation and Development of Skills) laboratory has been conducting research on the efficacy of a reading intervention known as Dialogic Reading, in local elementary schools since 2013. Dialogic Reading is a shared-book reading technique developed by Zevenbergen and Whitehurst (2003). In the SCSU R.E.A.D.S. lab version of the technique, SCSU undergraduate student interns are trained to conduct one-on-one dialogic reading interventions with children in grades Kindergarten through 2nd grade, in local elementary schools. Interns stop frequently throughout the story to ask questions, not in an evaluative way such as a teacher asking a question and looking for a correct answer, but in a conversational way. Dialogic reading involves asking “less-structured,” open-ended questions, which are questions that require more than a one-word answer or yes/no answer. The technique is scaffolded and employs the following procedures described by the acronym EMPOWERED: Encourage vocabulary; Make it fun; Prompt frequently; Open-ended questions; Wh-Questions; Expand the child’s responses; Encourage Repetition; Evaluate the child’s responses; and Distancing prompts. The challenges in working in local elementary schools and training SCSU undergraduate interns to conduct standardized reading assessments and reading interventions include: small sample sizes, diverse and potentially non-normal samples, and variable testing and intervention conditions. Despite the challenges, significant improvements in silent reading efficiency in comprehension and a narrowing of the gap between skilled and non-skilled readers has been reported (Carroll et al. 2015, 2016; Durwin, Moore, & Carroll, 2016; Jones Robinson, Duclos, & Carroll, 2017; Moore, D., Durwin, C., & Carroll, D.A., 2018) The purpose of the present study was to conduct a mini-meta-analysis on the efficacy of dialogic reading on silent reading comprehension and efficiency, in multiple samples of first graders in 3 different schools between 2013 and 2018.

P2.19 *Prenatal Exposure to a Cannabinoid Agonist during Critical Periods of Neural Development*

**Author(s):** Mary Spodnick, Neil Mascola, Gianna Mendes, Jordan Thompson, Sophia Whipple

**Mentor:** Kelly Bordner, Ph.D.

**Department:** Psychology

**Abstract:** Due to increased instances of cannabis use among pregnant women (Brown et al., 2016) and early evidence suggesting neuroteratogenic effects of the drug (Campolongo et al., 2011), it is vital to public health that we further examine the potential adverse effects of cannabis use during pregnancy on offspring. WIN 55,212-2, a synthetic CB1R agonist, has been used previously to model the neurological effects of cannabis use, acting as a substitute for delta-9-tetrahydrocannabinol (THC) (Mereu et al., 2002; Bernard et al., 2005; Vargish et al., 2017). Our study examines on the effects of prenatal exposure to WIN 55,212-2 on neurological and behavioral development, with a focus on the hippocampus and hippocampal-dependent tasks of Sprague-Dawley rat offspring. Pregnant dams were administered subcutaneous injections of the substance during early development (GD 0-6), late development (GD 15-21), or not at all. The offspring of each group was subjected to a number of assessments, including body weight, gross brain weight, hippocampal weight, immunohistochemistry and western blotting for hippocampal proteins, a voluntary alcohol intake test, and a Morris water maze task. The results of this study will provide insight into the effects of altering the endocannabinoid system during prenatal development, which will lead us to a more informed picture of the risks of using cannabis while pregnant.

- P2.20 *Romantic Relationships in the LGBTQ+ Community: Does Social Support and Interdependence Theory Play a Role?*  
**Author(s):** Emily Velidow  
**Mentor:** Dr. Gayle R. Bessenoff  
**Department:** Psychology  
**Abstract:** The current study investigates the roles of social support and interdependence in relationship satisfaction among different affectual orientations. A link to an anonymous online survey was distributed to organizations and departments of the Southern Connecticut State University community, as well as on social media. Of the 77 respondents, 39 were heterosexual, 14 bisexual, 11 gay, 5 lesbian, 6 pansexual, and 2 asexual. The survey included the Relationship Assessment Scale (RAS), the Gay and Lesbian Relationship Satisfaction Scale (GLRSS) with a social support subscale, and the Situational Interdependence Scale (SIS). Results found that although social support was reported to be high for all groups, it was statistically significantly lower for non-traditional LGBT individuals (asexuals, bisexuals, demisexuals, and pansexuals as compared to both heterosexuals and gay people (gays and lesbians). Further, a statistically significant correlation was found between social support and relationship satisfaction, such that as one has more social supports, one will be likely to report greater relationship satisfaction, regardless of affectual orientation.
- P2.21 *The Effects of Rearing Conditions and Social Behavior of Rats*  
**Author(s):** Neil Mascola, Gianna Mendes, Mary Spodnick, Jordan Thompson, Sophia Whipple  
**Mentor:** Kelly Bordner, Ph.D.  
**Department:** Psychology  
**Abstract:** Rodents, like humans, are a highly social species. When housed in groups, rats are known to engage in a variety of behaviors, both prosocial and asocial. Our study is designed to understand the effects of different rearing conditions on the development of social behavior. Young, adolescent rats, were placed in 1 of 4 different living conditions: standard environment (2 animals/cage with no enrichment), environmental enrichment (2 animals/cage with toys), social enrichment (4 animals/cage with no enrichment), and both environmental and social enrichment (4 animals/cage with toys). Animal behavior was recorded daily for 4 weeks and behaviors including sleeping, play fighting, eating, cleaning, and interacting with toys, if present, were recorded. Following 5 weeks of the housing manipulation, animals were given a test of social approach in which they had the opportunity to interact with a social “stranger”. We anticipate differences between the environmentally enriched rats and the rats housed in a standard environment, specifically regarding their prosocial behaviors. Additionally, we expect to see differences in social approach as a function of social vs environmental enrichment. The results of this study will help us understand the effects of social interaction and environmental enrichment on both daily behavior and the willingness of an animal to interact with a social stranger.
- P2.22 *Investigating Gender Differences in Emotion Regulation during Gender-Stereotyped Elementary School Subjects*  
**Author(s):** Tessa McNaboe  
**Mentor:** Cheryl C. Durwin, Ph.D.  
**Department:** Psychology  
**Abstract:** I am interested in investigating gender differences in emotions in gender-stereotyped subjects (mathematics and English Language Arts, i.e., reading/writing) during lessons and before a test. It is documented that girls have more negative views of their ability in math (which is considered a stereotypically male domain) but not in English. So, one aim of my study is to examine whether there are gender differences in mood in these subjects. A second aim is to examine whether classroom environment (testing v. non-testing) differentially affects gender differences in mood. Girls may show more negative mood before a math test than compared to boys because of the stereotype threat (cognitive assumption that boys are better at math). They may also show more negative mood in math classes before instruction (without being tested). I will use the RULER mood meter method (a four-color grid developed at Yale) to assess students’ moods during these conditions, as well as two surveys. One survey will ask about students’ energy levels and pleasantness levels (these are two dimensions that comprise the mood meter grid). The second survey asks background information, including questions about which subjects students enjoy and value (because enjoyment and valuing the subject may affect mood). I am interested in examining whether there is a significant difference between boys’ moods during math and before math and tests, in comparison to girls’ moods, and likewise for reading/writing.
- P2.23 *Examining Continuity Between Human and Animal in the Modern Day*  
**Author(s):** Caitlyn Koster  
**Mentor:** Dr. Patricia Kahlbaugh  
**Department:** Psychology  
**Abstract:** Understanding the history of psychological systems is important because it allows those who study psychology to appreciate how the subject has grown from the time of Ancient Greece to today. A famous debate within psychology’s history is whether man differs from animal. Aristotle and Rene Descartes did believe that a distinction existed. However, the results of a modern research study suggest that if primates are exposed to language, they show evidence of rational thought.

P2.24 *A Study Examining the Validity of LASSI for Predicting College Readiness*

**Author(s):** Sarah Carter

**Mentor:** Cheryl C. Durwin, Ph.D.

**Department:** Psychology

**Abstract:** The present study examined the relationship between the Learning and Study Strategies Inventory (LASSI-2) and various demographic and outcome measures in college students. The LASSI is a self-report survey that measures study strategies, motivation, time management, information processing skills, attitude and anxiety, among other attributes. Students enrolled in an Introduction to Psychology course in the spring semester completed the LASSI-2 and a demographics survey containing both pre- and post- college entry academic characteristics, such as high school GPA, SAT/ACT, and number of advanced placement courses taken during high school. Data are currently being collected. Results will be analyzed to evaluate whether the LASSI is related to overall GPA. Additionally, data will be analyzed to examine whether there are differences among first generation and non first generation college students' LASSI profiles. Additionally, data will be examined to explore whether college students from poorer high school districts have lower LASSI scores than those from wealthier districts. These research questions are exploratory and could have implications for practice at post-secondary institutions.

P2.25 *Search strategy differences as seen in the spatial memory of rats*

**Author(s):** Sophia Whipple, Mary Spodnick, Gianna Mendes, Jordan Thompson, Neil Mascola

**Mentor:** Kelly Bordner, Ph.D.

**Department:** Psychology

**Abstract:** In this experiment, we examined whether search strategy differed between two Morris water-maze (MWM) paradigms. The MWM is a frequently used procedure to test spatial memory in rodents. To complete the task, animals must swim and locate a platform submerged beneath the water surface. In doing so, the animal must create a spatial map of the pool in order to remember the location of a hidden platform. In the current experiment, proximal cues were set up around the maze denoting the cardinal points north, south, east, and west. Animals were divided into two groups: Standard MWM procedure group, in which the platform stayed in between the same two cues, or in the same quadrant, throughout the entire experiment, and a Working Memory MWM group, in which the platform location varied each day of the experiment. Young adult Sprague-dawley rats were subject to 4 trials per day over the course of 8 days. Swim path was recorded from above. We hypothesize that animals will engage in differential search strategies as a function of group. Using video recordings of the animal's behavior, within-quadrant latency will be used to examine the differing search strategies between the standard and working memory groups.

P2.26 *FoMO Predicting Poor Boundary Setting*

**Author(s):** Tyler Franco, Kaylee Roux, Shawn Morris

**Mentor:** Christopher J. Budnick, Ph.D.

**Department:** Psychology

**Abstract:** Research supports that problematic smartphone use and fear of missing out (FoMO; Elhair et al., 2016) significantly associate. Telepressure – the urge to immediately respond to electronic communications (Barber & Santuzzi, 2015) also associates with FoMO. Consistent with that work, we expected work-specific FoMO to also predict telepressure as well as increased ICT usage. Research also suggests that women have higher levels of work overload and interference than men do (Duxbury et al., 1996). Therefore, gender should also moderate relationships between workplace FoMO, telepressure, and ICT use. Additionally, individuals who are more agreeable tend to seek to please others. Thus, we also expected agreeableness to moderate the above relationships. We used a cross sectional survey designed to test the relationships between FoMO (Budnick et. al., 2018), telepressure (Barber and Santuzzi, 2015), ICT use (Barber and Santuzzi, 2015), agreeableness (Donnellen, Oswald, Baird, & Lucas, 2006) and gender. Participants (n = 300) represented the population in terms of race (62% white), gender (50% male), and age (M=57.58, SD=10.89). Their average hours spent on work are 44.74 hours (SD=11.4). Hierarchical linear regressions will examine interactions between workplace FoMO as our independent variable and telepressure as well as ICT use at home as our dependent variables, with gender and agreeableness as moderators. We anticipate that workplace FoMO will be related with telepressure and ICT use, but this relationship will be stronger for females and those high in agreeableness. This research will provide vital information about the factors influencing individuals' telepressure and ICT use.

P2.27 *Lyrical Changes in Music from 1989-2017*

**Author(s):** Tessa McNaboe, Chelsea Abreu, Zachary Peck

**Mentor:** Dr. Patricia Kahlbaugh

**Department:** Psychology

**Abstract:** Given the ubiquity and influence of music, it is important to understand the messages promoted and how these messages may differ across time. The following hypotheses are that compared to 1989, popular music from 2017 will contain: more sexually explicit lyrics more alcohol and drug references, and fewer references to “love”. Song lyrics were coded for themes having to do with: Sex, love, drugs, materialism, empowerment, swearing in popular songs from Rap, Pop and Country music. Researchers coded lyric sheets of the 10 best and worst songs from the genres of interest from 1989 and 2017. The top and bottom ten from the list of 100 were used for data collection and labeled as best and worst under song status. A total of 120 songs were analyzed through listening and reading the song lyrics. The method for coding the categories was using tally marks whenever specific words or tones pertaining our focus points were used. A main effect of song year was found on sex,  $F(1, 108) = 13.42, p$

P2.28 *Reactions To News Stories On Social Media*

**Author(s):** Zachary Peck, Melanie Defrank

**Mentor:** Dr. Patricia Kahlbaugh

**Department:** Psychology

**Abstract:** The spread of misinformation and propaganda has been at the forefront of conversation since the 2016 presidential election. Missing from research on the spread of fake news is an understanding of the role of emotion and popularity in how likely news is to be believed and shared. Study 1 looks at how emotion and popularity impact the spread of fake news through social media by using a 2 (news type: fake, real) x 2 (emotional content: high, low) x 2 (popularity: high, low) between-subjects design. A mock Twitter feed with tweets about immigration were created. Tweets were either true or false, either emotional or neutral, and either popular or not popular (number of retweets). The tweets were given to 162 participants to rate the degree to which they believed the tweet to be true and how likely they were to share it on a scale of 1 to 4. Contrary to previous research, true news was found more likely to be shared and believed, especially if the tweet had been retweeted. Study 2 investigates the role of emotion on the believability and shareability of fake news, without politically charged elements. This study uses a 2 (fake/true) x 3 (emotional context: negative, neutral, positive) within-subjects design. Mock tweets were created which mimicked headlines reporting on news stories. The tweets were then compiled and randomized for each participant. The tweets were either true or false and one of three emotional levels (negative, neutral, positive). Participants are currently being gathered.

P2.29 *Analyzing the Effects of the Prescription Drug Monitoring Program*

**Author(s):** Elizabeth Raber

**Mentor:** Dr. Aukje Lamonica

**Department:** Public Health

**Abstract:** In light of the ongoing opioid crisis, the Prescription Drug Monitoring Program (PDMP), which started a few years ago, has been strictly enforced in the U.S. While this program encourages fewer prescriptions, we know very little about the lived experiences of those who have had legitimate opioid prescriptions and who have been cut off from their medical providers. In this presentation, we will focus on opioid drug transitions of users. For this presentation, we use data from a qualitative study on suburban opioid use which triangulates ethnographic field research and in-depth interviews conducted in two suburban field sites (New Haven and Boston suburbs) We use targeted, snowball, and theoretical sampling methods. A total of approximately 50 qualitative interviews are used for the analysis. After the PDMP's were enforced, some patients were completely cut off from the prescriptions they had been receiving for months and sometimes years. While purchasing drugs on the streets illegally is a much more dangerous option, they had little choice, and many later turned to heroin when pills were too expensive opening up other risk factors that are associated with intravenous drug use. Some of the risks that come with purchasing illegal substances include getting involved with the law, crimes associated with drug acquisition such as prostitution and stealing, and sharing needles. So, while the PDMP is a great resource for physicians and pharmacies thousands of people will find other ways to get what they need continuing the cycle of this epidemic

- P2.30 *A study of college students previous experience with suicidal ideation or suicide of a loved one while attending middle or high school and its correlation to the lack of suicide prevention programs.*  
**Author(s):** Ashley Catala  
**Mentor:** Loida Reyes, Ph.D., MSW., Assistant Professor  
**Department:** Social Work  
**Abstract:** In our society today, we are facing a suicide epidemic. Many of the individuals that are taking their own lives are members of our adolescent and young adult population. The specific section of the population that this study is interested in are college students from Southern Connecticut State University who have experienced suicidal ideation, attempted suicide, or have had loved ones who have struggled with suicidal ideations, attempted suicide or have died by suicide. Researching this population will help to give insight on what preventative measures work as well as which ones do not. In addition to this we can learn more about the root causes of what leads an individual to even consider suicide as an option. Because suicide is a preventable cause of death, it is important that effective methods of prevention and intervention are identified.
- P2.31 *Examining the Effects of Stress on the Lives of Corrections Officers*  
**Author(s):** Gina Connolly  
**Mentor:** Amy B. Smoyer, Ph.D.  
**Department:** Social Work  
**Abstract:** This paper presents a systematic review of existing literature about correctional officers and stress. While much is known, there is a lack of qualitative data. For the most part, this literature is quantitative, identifying numerical rates of stress and burnout without any richness or context. The voices of correctional officers are not heard, instead the literature presents numbers that are far removed from the daily lived experiences of these public servants. Several autobiographic books were identified for inclusion in this review in order to address this gap in the peer-reviewed literature. Working as a correctional officer is a very stressful job. Given the lack of support that exists for this population from the general public, and social workers, there is a need to center the voices of these COs. Perhaps by hearing more narratives about their lives, social workers and other helping professionals will be more willing to develop interventions and reach out to this vulnerable population.
- P2.32 *A Biopsychosocial Approach to Understanding the Impact of Domestic Violence Among Children*  
**Author(s):** Abby Rodrigue  
**Mentor:** Kyle H. O'Brien, Ph.D., DHSC, MSW, MSOT, LCSW, OTR/L  
**Department:** Social Work  
**Abstract:** Domestic violence is a coercive and life-threatening crime that is much more prevalent in communities than society is aware of. In recent years, there has been an increased focus on understanding children witnesses, often referred to as "invisible victims." Varying in definition across state statutes, the term child witness includes biological or non-biological children who are exposed to domestic violence in their homes. The witnessing of domestic violence can include visual, auditory, or inferred exposure, in cases where the child witnesses the aftermath of a dispute, such as bruises or damaged property. Using the biopsychosocial model, this thesis sought to understand the multidimensional impact domestic violence has on early childhood development. This systematic literature review examined and synthesized the existing literature to determine the impact on development. This study found a significant increase of biological, psychological, and social-cultural delays after children were exposed to various types of domestic violence. The research identifies potential gaps in the literature, directions for further research, and elucidates implications for the social work practice.
- P2.33 *Schizophrenia in the Medieval Times*  
**Author(s):** Tracy Boyer  
**Mentor:** Dr. Nichole Gleisner  
**Department:** World Languages  
**Abstract:** For my project, I plan to do a poster presentation on schizophrenia in France in the medieval time period. This illness to me is very severe and dangerous. I watched videos about this illness in one of my psychology classes and I found it to be fascinating. I want to learn more about it and how it was treated centuries ago. In the video I watched, some symptoms of this illness are hallucinations, delusions, disorganized thinking (speech), and extremely disorganized or abnormal motor behavior. Learning about medieval culture in class and their strong belief in religion, I believe that they probably thought that people experiencing these symptoms were possessed. As a result, this could explain the occurrence of people burned at the stake or those who received some type of exorcism. For this project, I want to focus on famous people that were possibly victims of this illness and how they were dealt with such as Joan of Arc, a famous French woman who lived from 1412--1431.

P2.34 *Italian Neorealism Through 21st Century Eyes*

**Author(s):** Nicholas Talarico

**Mentor:** Dr. Erin Larkin

**Department:** World Languages and Literature

**Abstract:** This research focuses on 20th century Italy, in particular the political and social context of the Fascist ventennio through the post-World War II era as context for an in-depth study of Italian Neorealism. This project analyzes founding works—primary sources, both literary and filmic—representative of Italian Neorealism, as well as contemporary works that are in dialogue with the two. The research investigates perspectives on and notions that complicate traditional views of Italian Neorealism, as well as how the tendency has shaped modern Italian cultural production. The latter responds to and reflects a vibrant and complex society with a multitude of perspectives and identities, and the project investigates how such cultural production reflects this “New Italy”. In particular, it critically examines texts that depict the everyday lives of a diverse cross-section of the population; specifically, men, women, children, representing ethnic, religious and sexual minorities, including depictions of the role of African Americans in Italy. This project ultimately argues that the depiction of the lives and condition of everyday citizens who personified the hardships and struggles of the Neorealist moment, are not confined to the borders of Italy, nor to that particular moment in time; that instead, the tendency represents an ethical impulse that continues to engage artists of the present day, as they seek to confront the most pressing issues of their time.

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*Little Boxes*

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**Author(s):** Yu, Reena

**Mentor:** Jeremy Chandler, Associate Professor of Art

**Format:** Art Installation

*Preparation and Screening of 5-Bismuth (III)-1,4 Disubstitued Triazoles as Anticancer Agents*

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**Author(s):** Ziaks, Therese

**Mentor:** Candy Hwang, Ph.D.

**Format:** Poster Presentation