



Promoting Interdisciplinary Conversations

## 2023 Western Research Day Schedule

**Friday, May 5th, 2023**

**8:30 am -9:30 am** – Poster Set Up- White Hall Room

**9:30 am- 10:30 am** – Opening Remarks and Keynote Speaker -Ives Concert Hall

**10:30 am- 12:00 pm** – Poster Session I- White Hall Room 122/127

**12:00 pm- 1:00 pm** – Lunch (self-provided)

**1:00 pm- 2:30 pm** – Poster Session II-White Hall Room 122/127

**2:30 pm - 3:00 pm** – Afternoon break (snacks provided)

**3:00 pm - 4:30 pm** – Closing Remarks, Awards & Alumni Speaker -Ives Concert Hall

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## 2023 Keynote Speaker



### Gil Simmons

A native of Foster, Rhode Island and Killingly, Connecticut, Simmons is a graduate of Western Connecticut State University and a member of the American Meteorological Society. He is one of a very limited number of meteorologists with the prestigious Certified Broadcast Meteorologist seal of approval from the American Meteorological Society.

**Keynote lecture title:** Humanizing the science of weather

**Abstract:** Meteorology has a significant daily impact on most humans. The decisions we make from dining outside, bringing our umbrella to work, or changing a flight rely on accurate weather forecasts. Meteorologists are individuals who have the expertise and specialty training to compare, analyze, and interpret weather model data. Yet, with the accessibility of online model data, we see untrained individuals providing forecasts to the masses. Moreover, many people rely on their native smartphone application to provide them with their daily weather. This talk will focus on the critical training meteorologists complete to allow for accurate prediction. Specifically, the interpretation and messaging of the weather data to create an accurate, comprehensible, and functional forecast for the public will be outlined. Lastly, the potential pitfalls of amateur weather forecasting will also be discussed.

## 2023 Alumni Keynote Speaker



### Brittany Baisch, '08

Dr. Brittany Baisch is the Regulatory Toxicology Lead at Enko, a crop protection company that designs safe and sustainable solutions to farmers' biggest crop threats from pest resistance to new diseases. She is also an adjunct professor at Western Connecticut State University in the Chemistry Department. Prior to her role at Enko, Brittany was the Research Fellow for Toxicology at the Henkel Corporation where she developed and lead the North American Laundry and Home Care Product Safety program. She evaluated

hundreds of new ingredients, formulas, and unique product formats. She was previously the Principal Toxicologist for laundry and dish products at Sun Products Corporation where she worked with retail customers and brand teams to ensure products were evaluated for safety and appropriately labeled. Brittany started her career as the toxicologist of Kraft Foods, where she lead programs to monitor and evaluate contaminants in the supply chain, worked on assessments for novel food ingredients and food allergy management policies, and developed a packaging safety program. Brittany holds bachelor's degrees from Western Connecticut State University in Chemistry, Biochemistry and Spanish and an MS and PhD in Molecular Toxicology and Environmental Medicine from the University of Rochester School of Medicine and Dentistry. Brittany is a board-certified toxicologist as a Diplomat of the American Board of Toxicology (DABT). She is also on the Board of Directors for both the Connecticut State Colleges and Universities Foundation and the American Board of Toxicology. She has held several leadership positions within the Society of Toxicology, including President of Women in Toxicology, Vice President of Sustainability through Contemporary Chemicals, Councilor for Ethical, Legal, Forensic and Societal Issues, and had been Secretary/Treasurer of the Exposures Section. Brittany has a passion for ensuring that the consumer products we use every day and for growing the world's food supply are safe for humans and the environment.

**Keynote lecture title:** The art of horizon scanning to inform safety decisions

**Abstract:** Scientific rigor has been the cornerstone for evaluating chemicals hazards and exposures, and then determining risks to human and environmental health. As society has become more technologically advanced, the consumers and public are more savvy and more critical of whether or not the products they use and the food they eat are truly safe. Toxicologists aim to serve as the source of the truth – where industry standard and state-of-the-art scientific studies to assess hazards, advanced computational models, and tools to predict or measure exposures, and methods for calculating and interpreting the risks are all rapidly evolving and improving. Scientific rigor is simply no longer enough for toxicologists to provide assurance of safety. It is now required to scan the horizons of the regulatory climate, gain input from experts, retailers, non-profits, and understand consumer opinions to address safety concerns that are both perceived and real. As such, a new approach has emerged that is proactive, which is the integration of scientific rigor with scientific affairs to assess, communicate, and manage human and environmental health risks. Case studies of how scientific affairs information is garnered and integrated to evaluate risks, and who is involved, will be highlighted with examples from the household products, food, and crop protection industries.

## Faculty Participants

Dr. Maya Aloni

Dr. Hasan Arslan

Dr. Galina Bakhtiarova

Dr. Ethan Balk

Dr. Daniel Baluha

Dr. Carina Bandhauer

Dr. James Boyle

Dr. Bernard Gee

Dr. Rainer Kroll

Dr. Rotua Lumbantobing

Dr. Michelle Monette

Dr. Theodora Pinou

Dr. Judith Prieto

Dr. Shouhua Qi

Dr. Hannah Reynolds

Dr. Carlos Santibanez-Lopez

Dr. Tricia Stewart

Dr. Xiaodi Wang

Dr. Robert Whitemore

Dr. Edwin Wong

## Judges

<b><u>Name</u></b>	<b><u>Department</u></b>
Gloster Aaron	Neurobiology, Wesleyan
Katherine Allocco	History
Hasan Arslan	JLA
Pauline Assenza	Management
Galina Bakhtiarova	Languages
Ethan Balk	HPX
Diane Bennett	Nursing
Kimberlee-Ann Bridges	Nursing
Kevin Burnard	Management
Eileen Campbell	Nursing
Stavros Christofi	Math
Neeta Connally	Biology
Patricia Cumella	Nursing
Marcia Delcourt	Graduate Office
Patrick Finneran	Biochemist (alumni)
Jennifer Flynn	MIS
Pauline Goolkasian	Education-Ed. Psych.
Nick Greco	Chemistry
Alba Hawkins	World Languages
Krista Heybruck	HPX
Rayda Krell	Biology
Stephanie Kuhn	Education
Bryan Lewis	Danbury Hospital

<b><u>Name</u></b>	<b><u>Department</u></b>
Leslie Lindenhauer	History
Aura Lippincott	Instructional Design
Rotua Lumbantobing	Social Sciences
Jeanette Lupinacci	Nursing
Ron Mason	Residence Life
Julia Mazurak	Nursing
Tassio Mcfarlane	Health and safety
Karen McLean	Social work
Lorrie-Anne Monte	Education-Ed. Psych.
Diane Naddeo	Education-Ed. Psych.
Bradley Nolan	Hospital
Jennifer O'Brien	Library
Jennifer Ort	Library
Bozena Padykula	Nursing
Amy Parent	Biology, Staples High School
William Petkanas	Communication
Dora Pinou	Biology
Helena Prieto	Chemistry
Teresa Pucknaber	Nursing
Shouhua Qi	English
Forest Robertson	Chemistry
Karen Thompson	Biology, Staples High School

<u>Name</u>	<u>Department</u>
Jack Tom	Art
Mitch Wagener	Biology
Linda Warren	Nursing



## Student Participants

*Listed in alphabetical order by first author*

The poster number is in the first column and the time indicates if the poster is slated for the AM or the PM session.

6	<p><b>The New England Patriots: Are They Worth It?</b></p> <p><b><i>Abba Abrams</i></b> with: Maia Quirk</p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Rotua Lumbantobing, Social Sciences</i></p> <p>In this research project we evaluate the net present value of the New England Patriots considering factors such as brand, stadium, game history, etc. We will also quantify the dynasty effect using a comparative analysis against the Denver Broncos. Finally, we compute an evaluation of two star players based on their marginal revenue product against their current salaries. The research is expected to show a significant increase in the value of the Patriots from their last change in ownership in 1994.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/abrams.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/abrams.pdf</a> </p>
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35	<p><b>Real Madrid's Endless Value</b> <i>Rómulo Aguillaume</i> with: Franz Muhaj</p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Rotua Lumbantobing, Social Sciences</i></p> <p>In this research project we measure the value of Real Madrid soccer club, one of the premiere teams in Spanish soccer, by looking into different variables such as player value, annual revenues, brand recognition, financial performance and on-field performance. In addition, we will show the offstream revenues of the stadium, and how this asset has provided value to the institution by not only hosting soccer games. Lastly, one part of our research project is the evaluation of two star players of the team, Karim Benzema and Vinicius Jr., and how these two players provide value to the team.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/aguillaume.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/aguillaume.pdf</a></p>
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36	<p><b>Expression and Purification of Glutathione Reductase</b>  <b>Taylor Albert</b></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Judith Prieto, Chemistry</i></p> <p><i>Plasmodium falciparum</i> is a human malaria causing parasite with known drug resistance. It is theorized that Methylene Blue (MB) has been able to selectively inhibit <i>Plasmodium falciparum</i> glutathione reductase (PfGR). PfGR plays a key role in this drug target because in the antioxidant pathway, when inhibited, the parasite cannot repair any cell damage caused by radical oxygen species (ROS) and cannot survive. The exact binding site of the Methylene Blue glutathione reductase (GR) is currently unknown, but theorized to be an allosteric site in the intersubunit of the homodimeric protein. The goal is to use hydrogen deuterium exchange mass spectrometry to locate where the ligand binds by mapping the protein with and without the presence of MB in a deuterated solution. We will report on the progress of the expression and purification of PfGR. In addition the results of pepsin digestion conditions will be presented.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/albert.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/albert.pdf</a></p>
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37	<p><b>Food for Thought: An Ethnographic Study of Nonprofit Volunteers Addressing Food Insecurity</b> <i>Brynn Alvord</i></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Robert Whittemore, Department of Social Sciences</i></p> <p>Food insecurity is one of the most prominent issues afflicting households across the United States. This research focuses on an individual nonprofit that targets food insecurity through free resource marketplaces, as well as community pantries and refrigerators. The aim of this research is to gain a better understanding of the volunteer/staff member perspective of fighting local food insecurity. Participant observation and semi-structured, open-ended interviews were used for data collection, which were then analyzed for thematic patterns regarding: involvement motivation, responsibilities, challenges faced, and benefits experienced. After analysis, I will be exploring the nonprofit's volunteer and staff members' experience of building community through service.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/alvord.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/alvord.pdf</a></p>
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1	<p><b>Effects of Urbanized Roads on Northern Diamondback Terrapins</b></p> <p><b>John Arnett</b>  with: Neeta P. Connally, Michael Ravesi, Theodora Pinou</p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Theodora Pinou, Biology</i></p> <p>Roads are considered ecological traps for turtles therefore roads can compromise the demographic structure of turtle populations. To test this, we sampled nine populations of <i>M. terrapin</i> representing diverse roads along the Connecticut coast. We used a Probability of Occurrence Model to assign road mortality ranking, ranging from Rank 1 (high road mortality) to Rank 3 (Low to no road mortality). Baited hoop traps and intermittent seine net surveys were used for <i>M. terrapin</i> mark and recapture sampling in the Summer of 2022. We recorded location, sex, estimated age, and morphological data for 1073 <i>M. terrapin</i>. After one-year, preliminary data suggest that high road mortality sites have statistically smaller <i>M. terrapin</i> compared to moderate and low road mortality sites. The results of our study suggest that road mortality may be eliminating the large adult female <i>M. terrapin</i> from Connecticut populations, eventually impacting the reproductive success of the species in Connecticut.</p> <p>Interdisciplinary: No   Graduate</p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/arnett.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/arnett.pdf</a></p>
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7

**Mental rotation learning with task-specific interventions****Sara Azzi**

with: Skylar Bartush, Jade Carriero

Time: AM

**Advisor:** *Bernard Gee, Psychology*

Spatial reasoning is a cognitive skill that is critical for our understanding of our physical environment. Mental rotation, in particular, refers to our ability to imagine objects rotated at different angles. Prior research has indicated that intentional hand movements can enhance mental rotation performance due to the theory of embodied cognition. We further explored this theory by designing an intervention in which subjects "played" with a set of 3-dimensional toy blocks similar to those found on a standard mental rotation test. The control group simply watched videos of the task being completed by others. We hypothesized that the hands-on interaction used by the intervention group would facilitate both higher accuracy and processing speed on the mental rotation post-test. Our data showed that both groups significantly improved their test scores; however, no significant improvement in reaction time was found.

Interdisciplinary: No | Undergraduate

**Poster Presentation**

URL for poster:

<https://archives.library.wcsu.edu/relatedObjects/wrd/2023/azzi.pdf>

8	<p><b>The Role of Effective Lecture Note-Taking in Facilitating Academic Performance</b></p> <p><b><i>Skylar Bartush</i></b> with: Margaridha Ribeiro</p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Bernard Gee, Psychology</i></p> <p>The quality of lecture note-taking has been shown to be related to academic performance, but organizing features are often overlooked. Undergraduate students in a biological psychology class submitted their lecture notes for an entire semester, allowing for a long-term analysis of notes taken in a natural setting. Results revealed that several note-taking metrics were positively correlated to course grades. Metrics involving the organization and clarity of notes were just as significant as those related to the content of notes. Students also responded to a 24-item questionnaire about their perceptions of their note-taking skills and its contribution to academic performance. We saw that students exhibited a disconnect between perceptions of their note-taking abilities versus their true abilities. This study offers a more comprehensive approach to the note-taking techniques that facilitate effective notes. To improve learning outcomes, the development of note-taking skills should be considered.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/bartush.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/bartush.pdf</a></p>
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2	<p><b>Wavelet Decomposition Based Stock Forecast using Machine Learning Algorithm</b> <i>Peter Bigica</i></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Xiaodi Wang, Mathematics</i></p> <p>One of the most sought-after goals in the financial world is a reliable method by which investors can predict a stock price movement consistently. Accurate stock price predictions can provide insights into future market trends, which can help to minimize risk and maximize profits. Advancements in stock prediction via the use of machine learning have improved the accuracy of such predictions and yielded better ideas about value investments in the stock market. However, with the addition of wavelet decomposition, our data set (prior stock prices) can be refined to make the forecast even more accurate. This research aims to perform a stock forecast of Amazon stock using a discrete wavelet transform-based machine learning algorithm that incorporates the use of LSTM to denoise prior stock history and perform an accurate short-term forecast for amazon stock. This algorithm will be further supported with an MSE to measure the error of forecasting.</p> <p>Interdisciplinary: No   Graduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/bigica.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/bigica.pdf</a></p>
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9	<p><b>Go Pack Go: A Valuation of the NFL's Green Bay Packers</b> <i>Samantha Burns</i> with: Kari Richardson</p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Rotua Lumbantobing, Social Sciences</i></p> <p>With this research, we aim to provide a detailed valuation of the National Football League's Green Bay Packers team along with two of their star players, Aaron Rodgers and AJ Dillon. Utilizing past data on the team's revenue, expenses, profit and net income, we plan to calculate the team's potential earnings 20 years in the future. As of 2022, the Green Bay Packers were valued at \$4.25 billion, representing a 22% value change from the previous year. Sufficient value changes signify the need for financial valuations to assess the economic viability of the team.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/burns.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/burns.pdf</a></p>
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10	<p><b>Salt Stress: The Effect of Salt on Ammonification in Local Sediment Over Time</b></p> <p><b><i>Madeleine Burt</i></b> with: Emily Jennings, Maria Silva</p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Hannah Reynolds, Biology</i></p> <p>Road salts are known to have an effect on soil processes. The nitrogen cycle is a complex series of processes that convert nitrogen into various forms, allowing it to continuously cycle through the atmosphere and into soil. At the end of the cycle, in a process called denitrification, bacteria decompose ammonia, nitrate, and nitrite into nitrogen gas to re-enter the atmosphere. Little research has been done to monitor ammonia levels in freshwater sediment environments. We hypothesized that there would be an increase in ammonia in freshwater sediment due to the inhibition of denitrification from salt stress. Using incubated microcosms, we found a decrease in ammonia over time and a slower decrease in ammonia in higher salinity. Future research should look at bacterial communities and ammonia in salt-stressed ecosystems.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/burt.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/burt.pdf</a></p>
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11	<p><b>Undergraduate Student Perspectives on Teaching Assistants</b> <i>Jade Carriero</i></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Bernard Gee, Psychology</i></p> <p>Previous research has found that having teaching assistants (TAs) in the college classroom is beneficial for student performance. Most research on this topic either used surveys or observed student interactions with the TAs, focusing primarily on graduate TAs. This research differs from the current literature as it is designed to gain insight into how students perceive and utilize their undergraduate TAs. Additionally, it examines TA responsibilities outside the classroom that previous research does not address. To conduct this study, undergraduate students were asked to complete an online survey on their experiences with a TA. The results revealed that students are not utilizing their TAs as much as they could be. However, students who do utilize their TAs find them to be very beneficial. Specific activities, such as exam reviews and individual help, were most attractive to students. These findings could provide insight into optimizing TA effectiveness.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Oral Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/carriero.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/carriero.pdf</a></p>
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31	<p><b>Trauma-Informed Teaching Practices: A Case Study Of Formal And Informal Teacher Experiences</b></p> <p><i>Kara Mia Colon</i></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Tricia Stewart, Education</i></p> <p>This exploratory qualitative study will analyze the implementation of trauma-informed teaching practices (TITP) by educators in Connecticut High Schools that have not yet formally implemented TITP programs into their school's pedagogical expectations. In addition, this study seeks to understand the extent to which TITP instruction is effective in classrooms where it is observed. While the TITP framework supports all students, it is meant to sustain students who are experiencing or have experienced adverse childhood experiences (ACE). In this study, secondary teachers will be selected based on their willingness to be a part of this study. Participants will be engaged in various ways to assess their knowledge and implementation of TITP within their classrooms. Preferably, at least one teacher from each content area will be included as a participant in this study. The data will be used to investigate the teachers' perspectives regarding TITP in schools.</p> <p>Interdisciplinary: No   Graduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/colon.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/colon.pdf</a></p>
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12	<p><b>Arbuscular mycorrhizal fungi (AMF) Symbiosis: a Mitigation Strategy For Turf Grass Against Salt Stress</b></p> <p><b>Charlee Cordle</b>  with: Jenny Nguyen, Kevin Remache, Rija Arbab</p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Hannah Reynolds, Biology</i></p> <p>Many human driven environmental stressors affect plant growth. Salt runoff during the winter is an environmental threat because high salt concentrations are toxic to cells. Salt stress affects osmolality, ion balance, and mineral acquisition of plant cells and overall plant development. Arbuscular mycorrhizal fungi (AMF) are fungi that form symbiotic relationships with plants that help facilitate nutrient uptake, absorption of phosphorus, circulate nitrogen in the environment, and help increase tolerance to metals and various salinities. However, the extent that AMF protects plants against salt shock is unknown. To investigate this question, we grew 50 pots of grass, treated half with AMF, and exposed the pots to a range of salinities. We measured root and shoot growth and mass and found that the mass of the AMF roots was significantly higher in low salt stress conditions. Our experiment can be used as a reference for salt tolerance in mutualistic AMF relationships.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/cordle.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/cordle.pdf</a></p>
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13	<p><b>The Progressive Nature of Theatre Arts With Regard to Racial Diversity and Representation</b> <i>Abby Cunningham</i></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Robert Whittemore, Social Sciences</i></p> <p>The focus of my research is the progressive nature of theatre arts and how this both assists in and hinders progress being made towards racial justice. Previous literature, which focuses primarily on Black Americans, suggests white people throughout the history of the United States, some well-intentioned, some not, have failed to create a space for people of color within the theatre. Still today, people of color are forced into stereotypical roles, often written or directed by white people. I am analyzing the mission statements of professional regional theatres in Connecticut and New York, interviewing collegiate theatre students, and taking participant observation notes on WCSU's production of <i>Fairview</i> by Jackie Sibbles Drury. In doing so I hope to bring to light the negative impact of inadequate representation in theatre and reveal that sometimes an "inclusive" environment is just as culpable of perpetuating racist systems as an obviously exclusive one.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/cunningham.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/cunningham.pdf</a></p>
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14	<p><b>Acclimation Temperature Effects Thermal and Freshwater Tolerance in Atlantic Killifish (<i>Fundulus heteroclitus macrolepidotus</i>)</b></p> <p><b>Jean-Pierre Delaugere</b> with: Susana L. Almeida</p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Michelle Monette, Biology</i></p> <p>Human-induced climate change is subjecting marine organisms to stressful environmental conditions including fluctuations in temperature and salinity. Previous studies have examined the effect of acclimation to constant warm temperatures on the thermal tolerance of Atlantic killifish; however, the effects of fluctuating temperature on thermal and freshwater tolerance remain unknown. To examine this, killifish were acclimated to three temperature conditions: control, 20°C; constant warm, 28°C; and variable warm alternating between 20 and 28°C every two days. Critical Thermal Maxima (CTMax), plasma osmolality, and gene expression of gill Na-Cl cotransporter (NCC2) were measured. Results showed that CTMax increased relative to controls in both the constant and variable warm groups. Plasma osmolality and NCC2 gene expression were reduced in these groups after transfer of killifish to freshwater. It was concluded that there is a physiological trade-off between thermal and freshwater tolerance which limits the ability of the killifish to acclimate to combined stressors.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/delaugere.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/delaugere.pdf</a></p>
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38	<p><b>Amanda Wingfield and Linda Loman as Paradigms of Patriarchy in Tennessee Williams' The Glass Menagerie (1944) and Arthur Miller's Death of a Salesman (1949)</b></p> <p><i>Giovanna Diniz</i></p> <p>Time: PM</p> <p><b>Advisor:</b> Shouhua Qi, Professor of English</p> <p>This project studies Amanda Wingfield and Linda Loman as Paradigms of Patriarchy in Tennessee Williams' The Glass Menagerie (1944) and Arthur Miller's Death of a Salesman (1949). Williams and Miller draw attention to the patriarchy deeply rooted in society through their character portrayals. This project places focus upon Linda and Amanda, women who are conditioned by systemic patriarchy as seen through their identities as both mothers and wives, seeing the two women as people who both have fallen victim to patriarchy yet have been conditioned to uphold the dominance of patriarchy, proving the persistence of the ideology through generations. The authors demonstrate the impact of patriarchy by revealing double standards within gender. Willy Loman and the absent Mr. Wingfield "get away with" their betrayals towards their families, while the two women are expected to unconditionally support the families, regardless of how they have been personally damaged by their children/spouses.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/diniz.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/diniz.pdf</a></p>
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3 **AN EXPLORATORY CASE STUDY OF EDUCATORS' EXPERIENCES IN THE TIME OF COVID-19: COMPASSION FATIGUE AS AN UNINTENDED CONSEQUENCE OF A GLOBAL PANDEMIC**

*Peter Dittmar*

Time: AM

**Advisor:** *Tricia Stewart, Education and Educational Psychology*

This exploratory qualitative case study will be used to analyze educator perceptions and the extent to which they experienced compassion fatigue during the Covid-19 pandemic. Educators and administrators will be interviewed utilizing semi-structured interview protocols. The interviews will be recorded, transcribed, and analyzed utilizing NVivo. There will be deductive and inductive codes utilized in this research design. Each transcript will be analyzed through First Cycle, Second Cycle, and Pattern Coding to identify major themes within the data. The researcher will be exploring educators' experiences during the Covid-19 pandemic, educator responsibilities during the pandemic, to what extent educators experienced compassion fatigue, and educator perceptions of what is needed to support them based on their Covid-19 pandemic experiences. Secondary traumatic stress or compassion fatigue can play a major role in educators' well-being and effectiveness. The pandemic compounded the difficulties educators faced and this study seeks to better understand educators' experiences.

Interdisciplinary: No | Graduate

**Poster Presentation**

URL for poster:

<https://archives.library.wcsu.edu/relatedObjects/wrd/2023/dittmar.pdf>

15	<p><b>The Impact of Involvement in a Biblically Based Faith Community on the Integration of First-Generation Immigrants</b>  <b><i>Claire Eastwood</i></b></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Carina Bandhauer, Social Sciences</i></p> <p>Through a series of interviews of church leaders and first-generation immigrant church attendees, the question of how a Biblically based church encourages or discourages immigrants' integration into the United States is explored. Full integration includes one's political involvement, ability to navigate society, and system of social networks. My expected results show that the church in this study encourages social integration, both in a community and navigation sense, but discourages political integration. This does not occur because of active efforts by the church leadership to aid in immigrants' integration, but rather because of a goal to integrate church attendees into a spiritual group of Christians consisting of all followers of Jesus throughout the world, regardless of borders. This interconnection between Christians results in strong social networks that aid in social navigation but discourage political involvement because political identity is viewed as a polarizing trait rather than a unifying trait.</p> <p>Interdisciplinary: No   Undergraduate  <b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/eastwood.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/eastwood.pdf</a></p>
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39	<p><b>Paid Family Leave and Gender Equity</b>  <b><i>Jodian Ennis</i></b></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Robert Whittemore, Department of Social Sciences</i></p> <p>Over the years the traditional family dynamics has shifted, resulting in significant changes in the ways in which a family operates. I will be exploring the impact of paid family leave and gender equity in the workplace while discussing how it impacts a family on a whole. I will collect data from a sample size of 15-20 low to middle income women within my community. In addition, this study will discuss the paid family leave system within the United States, both federal and state programs, while making comparisons to other countries that offer paid family leave.</p> <p>Interdisciplinary: No   Undergraduate  <b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/ennis.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/ennis.pdf</a></p>
40	<p><b>Brutality of Nature and Women as Portrayed in The Handmaid's Tale</b>  <b><i>Kira Fontaine</i></b></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Shouhua Qi, English Department</i></p> <p>One of Margaret Atwood's most famous novels, <i>The Handmaid's Tale</i>, published in 1982, is a near-future dystopian representation of a society that has been destroyed due to violence against nature as well as the oppression of women. Atwood tells a tale of repeated disregard for nature, which leads to severe damage to the human body, such as infertility. My research project uses ecofeminism to study brutality towards both nature and women as portrayed in <i>The Handmaid's Tale</i>.</p> <p>Interdisciplinary: No   Undergraduate  <b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/fontaine.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/fontaine.pdf</a></p>

41	<p><b>El Pase del Niño Viajero in Azuay, Ecuador: A Celebration of Heritage and Culture</b>  <b><i>Britney Guachun</i></b></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Galina Bakhtiarova, (203)-837-8734</i></p> <p>This project explores the popular celebration titled El Pase del Nino Viajero in the province of Azuay, Ecuador. Born as part of the Christmas celebrations in the 1960s by a grassroots movement of local parishioners, over the years, this event has evolved into a massive cultural manifestation with thousands of participants in colorful costumes marching and performing for hours on Christmas Eve in several towns in the Azuay region. The event includes a parade accompanying baby Jesus, with multiple individuals, children and adults, dressed in religious or ethnic costumes. Of special interest is the participation and sponsorship of the event by successful emigrants who return to their native towns to participate in this annual event. This project is based on sociological research by Ecuadorian scholars as well as the author's participation with her own family in the festivities in 2022 in the city of Gualaceo, Ecuador.</p> <p>Interdisciplinary: No   Undergraduate  <b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/guachun.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/guachun.pdf</a></p>
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42	<p><b>The Effect of Increased Salinity on Soil Organic Matter and Fungal Community Diversity in Ives Pond</b></p> <p><b><i>Shafaq Hashmi</i></b>  with: Haley Oko, Rachel Stenton, and Shania Mirza</p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Hannah Reynolds, Biology</i></p> <p>During the winter months, the increased use of road salts has a negative impact on the soil microbe community. Although some soil fungi have features that allow them to withstand higher salinity, little is known about precise changes in soil organic matter and fungal diversity across different salinity levels. Hence, we compared the soil organic matter quantities and microbial communities in microcosms made with Ives Pond sediment at 300 ppm NaCl versus deionized water. These microcosms were incubated for a three-week period, during which samples were removed and frozen every seven days for organic carbon analysis and DNA extraction. We hypothesized that increased salinity would result in higher amounts of soil organic matter due to less decomposition, as well as decreased fungal diversity due to salt intolerance. As fungi play diverse roles in soil ecosystems, understanding how salinity affects their communities and processes is important for understanding ecosystem function.</p> <p>Interdisciplinary: No   Undergraduate  <b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/hashmi.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/hashmi.pdf</a></p>
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4

## **Understanding Early Childhood Education Programming and the COVID -19 Pandemic: The Role of Structured Play in Early Childhood Programming**

*Jennifer Hengen*

Time: AM

**Advisor:** *Tricia Stewart, Education*

The focus of the American education system has been primarily on student growth and data measures to assess student achievement. With the COVID-19 pandemic, many early childhood educators and administrations have recognized the need for structured play as a best teaching practice to include school reading readiness skills and important social aspects with peers. The effects of the COVID-19 pandemic created a need for learning to take place at home using technological devices, leaving many young children lacking peer interactions and the ability to navigate social situations. Once learning could return to in-person, young childhood educators were having to decide whether the priority should be focused on academics or would it be beneficial to incorporate more opportunities for structured play so that the lack of social skills could be addressed. Does structured play offer both the academic components as well as the opportunity for social skills to be practiced in a structured environment?

Interdisciplinary: No | Graduate

**Poster Presentation**

URL for poster:

<https://archives.library.wcsu.edu/relatedObjects/wrd/2023/hengen.pdf>

43	<p><b>Subjugation, Isolation, and Madness: Female Oppression in “The Yellow Wallpaper” and “A Rose for Emily”</b></p> <p><i>Rina Hernandez</i></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Shouhua Qi, English</i></p> <p>“The Yellow Wallpaper” (1892) by Charlotte Perkins Gilman and “A Rose for Emily” (1930) by William Faulkner are two classic texts that reveal so much about the subjugation and isolation that women have had to experience. Two critical theories, psychoanalytic and feminist criticism, were used to analyze “The Yellow Wallpaper” and “A Rose for Emily.” These two stories provide a compelling narrative of women being driven to madness by patriarchal subjugation. Perkins’ story is told from a first-hand account, while Faulkner’s is told from an outsider’s point of view. The difference in point of view allows for different voices to be heard and serve different literary and sociopolitical agendas. Gilman, a women’s rights activist, wrote the story based on her own personal experiences and therefore intended her story to produce real social change. In contrast, Faulkner, a male author of the South, only offers readers a limited glimpse from the outside looking in. Regardless, both stories portray the detrimental effects of subjugation, isolation, and madness.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/hernandez.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/hernandez.pdf</a></p>
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44	<p><b>An Analysis of Youth Voting Patterns &amp; Root Legislative Issues</b> <i>Marquet Humphrey</i></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Robert Whittemore, Department of Social Sciences</i></p> <p>For many voting cycles the youth demographic has been key to swaying elections and shaping the contemporary political landscape. Data suggest that in recent times this group has been more politically engaged than ever. My research seeks to analyze potential variables that may be contributing to this surge in political engagement both in voting, and beyond, in a demographic that is right in our backyard. Through survey, my research asks respondents what political activities they engage in? How high is their confidence in modern political institutions? And what are their thoughts on the political landscape as it stands. These variables will then be analyzed and put into context in terms of their relationship with each-other in terms of gaining a greater understanding of the political profile of the youth demographic in Connecticut.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/humphrey.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/humphrey.pdf</a></p>
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5	<p><b>The Impact of Ultra-Processed Foods on Mental Health Disorders : A Review of the Literature</b></p> <p><i>Kristina Korin</i></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Ethan Balk, Nutrition</i></p> <p>More than 60% of Americans obtain their caloric intake from ultra-processed foods. Ultra-processed foods have greatly increased in the past decade creating 73% of the United States food industry which has impacted the healthcare system with diseases such as obesity, type 2 diabetes and cancer. In most recent studies, ultra-processed foods can contribute to the nation's growing mental health crisis causing depression and anxiety. The purpose of this review was to analyze the correlation between ultra-processed foods and how it impacts the human brain neurologically when consumed. Findings indicate that ultra-processed foods can affect dopamine and serotonin receptors due to its impact of gut-microbiome influencing the central nervous system yet more research needs to be addressed in direct correlation.</p> <p>Interdisciplinary: No   Graduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/korin.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/korin.pdf</a></p>
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58	<p><b>Antibiotic Induced Permeability of the Blood Brain Barrier</b></p> <p><i>David Lawrence</i></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Joshua Cordeira, Biology</i></p> <p>Prior research into blood brain barrier permeability after antibiotic treatment has shown that small molecular indicators like sodium fluorescein were able to pass through. To test the alternative, leptin was chosen as an indicator for this experiment. Leptin is a large molecule, measured in kilodaltons, versus fluorescent tracers which are an order of magnitude smaller. It is expected that after antibiotic treatment, there is an increase in blood brain barrier permeability in mice, which allows for increased leptin transport into key areas of the brain. In this experiment mice were given an antibiotic cocktail in their drinking water to facilitate this. These results will be presented following dissection homogenization of the brain tissue, and spectroscopic analysis. The connection between gut bacteria and the blood brain barrier is fundamental in understanding the role played by these commensals.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/lawrence.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/lawrence.pdf</a></p>
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16	<p><b>Summer and Winter: Venom composition comparative analyses of two scorpion species</b></p> <p><b><i>Barbara Machado</i></b> with: Yes, Gabrielle Velepucha</p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Carlos Santibanez-Lopez, Biology</i></p> <p>In the last decade, the study of scorpion venom component diversity has benefited from Next-Generation Sequencing. Despite these advances, not all scorpion families have been studied. Among them, the family Bothriuridae is poorly studied. Here, venom transcriptome analyses were performed to investigate the venom components of two bothriurid species. Additionally, comparative analyses, including the transcriptomes of five related species, were conducted to further elucidate the evolutionary relationships within this family. This study provides genomic data for a poorly studied scorpion species for the first time.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/machado.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/machado.pdf</a></p>
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17	<p><b>From Innocence to Experience: Child Development through William Blake's Songs of Innocence</b>  <i>Andreia Marques</i></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Shouhua Qi, English</i></p> <p>Childhood is an experience that unites all of us, regardless of gender, ethnicity, or socio-economic background. However, childhood experiences can be vastly different depending on these factors. Historically, childhood has been shaped by societal norms and cultural beliefs, and these have often been divisive. This research project examines the implications of childhood in William Blake's Songs of Innocence (1789) through the prism of the developmental theories of Jean Piaget and Erik Erikson. Piaget's theory emphasizes the role of play and imagination in cognitive development, whereas Erikson's theory highlights the importance of social experiences in shaping a child's sense of identity. By examining the implications of childhood in Blake's work through these lenses of developmental theories, we better understand how the Romantic period's broader societal and cultural context impacted the childhood experience, confirming how childhood experiences are shaped by the cultural and historical context of their time.</p> <p>Interdisciplinary: No   Undergraduate  <b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/marques.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/marques.pdf</a></p>
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45	<p><b>Depiction of Greek Mythological Female: Wicked, Weak, or Willing Wife</b></p> <p><i>Caleigh Mcallister</i></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Shouhua Qi, English</i></p> <p>The depiction of women in Greek mythologies tends to be demeaning. This research project examines Homer's <i>The Iliad</i> &amp; <i>The Odyssey</i> and Aeschylus' <i>Agamemnon</i> using contemporary critical lenses, which shows three archetypal roles women characters may fall into: weak, wicked, or willing wife. The vilification of these female characters ties distinctly into the suffering they endure, whether through physical violence, sexual assault, or subjugation under patriarchal forces. Comparing these characters to their male counterparts is crucial in understanding the male-driven hierarchy of Greek mythos. This research project tackles how characters such as Circe, Helen of Troy, Cassandra, and Penelope are each portrayed within the contexts of their stories to better understand the machinations of a misogynistic ancient society.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/mcallister.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/mcallister.pdf</a></p>
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18	<p><b>Expression and Purification of Malaria's Cytochrome C</b>  <b><i>Humayra Meem</i></b></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Judith Prieto, Chemistry</i></p> <p><i>Plasmodium falciparum</i> is the single-celled organism behind Malaria, a serious disease responsible for over 600,000 deaths in 2021. The highly adaptable <i>P. falciparum</i> parasite is rapidly developing resistance to antimalarial therapies such as Chloroquine and Artemisinin. Therefore, new pathways such as apoptosis, must be explored. Unicellular organisms have been observed in “crisis forms” by displaying cellular stress signals similar to higher multicellular organisms undergoing apoptosis. It is hypothesized that this programmed cell death pathway involves proteins such as Cytochrome C and a downstream protease. To properly investigate this pathway, first recombinant Cytochrome C must be isolated from E. Coli to test its involvement in a downstream proteolytic cascade using an established fluorogenic assay. A maltose binding protein that is tagged to the protein of interest has been used to purify the Cytochrome C using an amylose affinity column. We will report on the protein yield with various conditions.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/meem.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/meem.pdf</a></p>
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46

## **The Son of a Chinese Emperor and an Indian Queen: The Casting of Heathcliff from Emily Brontë's Novel Wuthering Heights in the 1939, 1992, and 2011 Film Adaptations**

*Mariana Miller*

Time: PM

**Advisor:** *Shouhua Qi, English Department*

Emily Brontë's *Wuthering Heights* is the inspiration behind a variety of film adaptations. But in what ways do these films differ from the novel? What artistic decisions were made and how did they affect the plot? What impact did society have on the making of each of these films? Perhaps the most significant difference between *Wuthering Heights* adaptations is Heathcliff's casting. In each film adaptation the casting of Heathcliff results in different portrayals of the character and thematic signification. This research studies three film adaptations of *Wuthering Heights*, *Wuthering Heights* (1939) directed by William Wyler, featuring a white Heathcliff, *Wuthering Heights* (1992) directed by Peter Kosminsky, also featuring a white Heathcliff, and *Wuthering Heights* (2011) directed by Andrea Arnold, audaciously casting a black actor for Heathcliff, which reflects the filmmaker's artistic visions as well as social political agendas and results in dramatically different cinematic experiences for viewers.

Interdisciplinary: No | Undergraduate

**Poster Presentation**

URL for poster:

<https://archives.library.wcsu.edu/relatedObjects/wrd/2023/miller.pdf>

47	<p><b>Development of a Perceptions of Vegans Scale</b>  <b>Keira Mohan</b></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Maya Aloni, Psychology</i></p> <p>Previous research has shown that meat-eaters have both positive and negative stereotypes of vegans, however, no scale currently exists to measure these stereotypes. In two studies we developed a reliable and valid scale to measure stereotypes of vegans. In Study 1, 956 participants (recruited through Prolific) rated the extent to which 72 traits described vegans. These traits assorted into positive and negative subscales. Study 2 replicated the scale structure found in Study 1 in two samples, which consisted of 656 community participants (recruited through Prolific) and 724 university students. The final scale consisted of 38 traits which assorted into higher order positive (Compassionate, Healthy, and Self-Disciplined) and negative (Unconventional, Condescending, and Unhealthy) subscales. The resulting Perceptions of Vegans Scale is a comprehensive measure of stereotypes of vegans. Future research can use this scale to evaluate stereotype reduction interventions and to better understand the barriers to adopting sustainable diets.</p> <p>Interdisciplinary: No   Undergraduate  <b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/mohan.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/mohan.pdf</a></p>
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48	<p><b>What's at the End of the Rainbow for the Celtics?</b> <i>George Mohigel</i> with: Nicholas Troy</p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Rotua Lumbantobing, Social Sciences</i></p> <p>The objective of this research project is to analyze the value of the Boston Celtics franchise from the National Basketball Association as well as two star players from the team. The star players used will be Jason Tatum and Al Horford. The valuation process for these two players will differ from each other due to differences in skill set and potential career length. This study will examine various factors that contribute to the team's value, including its financial performance, brand recognition, fanbase, and player personnel.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/mohigel.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/mohigel.pdf</a></p>
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49	<p><b>Determination of the isotopic ratios of lead through direct injection ESI-MS</b> <i>Christopher Murphy</i></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Daniel Baluha, Chemistry</i></p> <p>There are few factors affecting the isotopic ratios of atoms, but in some cases the geographic location may have an effect. Lead in particular is interesting in regard to archaeological and historical findings due to its use in ammunition during world wars. Traditionally, an expensive and niche ICP-MS is used for analysis; however, it is possible to compound the lead with a crown ether, in this case 18C6, to accurately assess these ratios through a much cheaper and more available ESI-MS. This research is being performed upon the request of Connecticut high school students to assist them in analyzing bullets recovered from World War 1 trenches in France for their own academic projects.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/murphy.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/murphy.pdf</a></p>
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19	<p><b>Can You Afford the Minnesota Vikings?</b> <i>Nicholas Nalbatian</i> with: Logan Scribner</p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Rotua Lumbantobing, Social Sciences - Economics</i></p> <p>The objective of our analysis is to determine the valuation of the NFL's Minnesota Vikings. This is done by examining the given data on the team's revenues and expenses over a period of around 20 years, with focus on the history of the team's ownership and corresponding purchase values. We account for variables such as gate receipts, operating costs, agreements, etc. We distinguish between the payments of the Minnesota Vikings and the payments of the state in our analysis, as ownership of the stadium belongs to the Minnesota Sports Authority (a fact that complicates our findings). This distinction is key to understanding the valuation of this team. We will also produce a valuation of star players relative to the data and our conclusions.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/nalbatian.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/nalbatian.pdf</a></p>
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20	<p><b>Housing Inequality in Greater Danbury</b> <i>Ryan Nason</i></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Robert Whitemore, Social Sciences</i></p> <p>Combining quantitative and qualitative analyses, this research explores the extent of housing inequality within the greater Danbury area over the course of the last 2 years. The statistical side of research offers a picture of Danbury's rapid increase in rent, eviction, and lack of housing affordability. The qualitative side of research involves in depth interviewing with tenants, homeowners, state legislators, and city officials. The thesis additionally provides a comprehensive analysis of current zoning and housing policy that contributes to housing inequality, as well as potential state and local policy implementations that can ease the crisis.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/nason.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/nason.pdf</a></p>
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21	<p><b>Media, Law and Human Trafficking: An Analysis of the Human Trafficking Reports in the Tri-state Area</b></p> <p><i>Nicole Peralta</i></p> <p>Time: Am</p> <p><b>Advisor:</b> <i>Hasan Arslan, 9144147945</i></p> <p>The U.S. has become a "source, transit, and destination country for men, women, and children subjected to trafficking in persons, specifically forced labor, debt bondage, and forced prostitution." But how prevalent is such news on human trafficking in the US media? This study solely focuses on the "forced labor" news reported in the media in the tri-state area (CT-NY-NJ) between 2000 and 2022. Using the Access World News and the criminal statutes of the three states, the explorative study examines the frequency of human trafficking news reporting "forced labor" cases. The issue evaluated is how much media coverage exists on "forced labor" in the heart of the US economy.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/peralta.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/peralta.pdf</a></p>
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22	<p><b>Walkability and Community Cohesion in Danbury, CT</b> <i>George Pintado</i></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Robert Whittemore, Department of Social Sciences</i></p> <p>The driving question of this study is: "What is the connection between walkable built environments and social interaction/cohesion in Danbury, CT?". The literature suggests that neighborhoods that are more walkable have higher levels of social interaction, physical activity, and economic productivity. The methodology used to gather data was a qualitative method involving informants participating in surveys and interviews. My project will explore whether low walkability of a neighborhood correlates with low social cohesion.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/pintado.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/pintado.pdf</a></p>
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32	<p><b>A Preliminary Census of Copperheads (<i>Agkistrodon contortrix</i>) in Connecticut, USA.</b></p> <p><b>Andrew Powers</b> with: Dr. Theodora Pinou</p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Theodora Pinou, Biology</i></p> <p>The eastern copperhead (<i>Agkistrodon contortrix</i>) is a medium-sized viper native to the eastern coast of the United States of America. Within New England, the copperhead has experienced land-use changes within their range and is considered a sensitive species in Connecticut in need of study (Klemens et al. 2021). Within the last three decades there has been an increase in urbanization and land-use change in central Connecticut resulting in the destruction of copperhead habitat. Our study uses mark-and-recapture data to revisit known dens, and record population demographics for a documented population (Smith et al. 2009) in Meriden, CT living in 1,2000 acres of a town protected land parcel. Our study examines if demographic change has occurred in this copperhead population over 22 years. This study is the only current long-term monitoring project on Connecticut copperheads that may inform future management of the species.</p> <p>Interdisciplinary: No   Graduate</p> <p><b>Oral Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/powers.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/powers.pdf</a></p>
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23	<p><b>Classification of Scorpion Toxins by A.I.</b> <i>Adam Psenicnik</i></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Carlos Santibanez-Lopez, Biology</i></p> <p>The goal of this project is to create a portion of a pipeline, then to finalize and to publish the pipeline, for the preliminary classification of scorpion venom transcriptomes. Using an artificial neural network, amino acid sequences of potential venoms are first sorted out by species, in case the venom species other than scorpions are accidentally retrieved. Then, the sequences classified as coming from scorpions are put through a second network identifying what component of venom it is, and if it's a toxin, what channel it affects. A secondary objective of this project is to demonstrate that the largely varying length of amino acid sequences is not an issue for general classification and that incomplete amino acid sequences still retain valuable information.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/psenicnik.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/psenicnik.pdf</a></p>
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50	<p><b>The Value of Education in Immigrant Communities</b> <i>Maia Quirk</i></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Carina Bandhauer, Social Sciences</i></p> <p>This study evaluates the relationship between the value of and access to education in immigrant communities as well as student performance and test scores. Various studies highlight the educational experiences on test scores among immigrants compared to U.S.- born students. This study examines experiences of immigrant children and families and assesses their values of education. One-on-one interviews were conducted with migrants and their adult children. I hypothesize that people within immigrant communities place immense value on education and student performance.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/quirk.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/quirk.pdf</a></p>
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51	<p><b>Devastation of Deportation on Loved Ones in the United States</b> <i>Madeline Ressa</i></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Carina Bandhauer, Social Sciences</i></p> <p>Rhetoric criminalizing undocumented migrants is pervasive and thus very little thought is given to the expulsion of immigrants from the United States through deportation. The rhetoric and this process fail to capture the impact on family members of deportees left behind in the US. This research project explores the lives of family members of those deported from the United States.. Most deported migrants leave behind family and friends who are devastated by their deportation and may be affected emotionally, and financially. This project will utilize qualitative and quantitative data to analyze the effects of the deportation of migrants on their remaining family members in the United States Through interviews and literary analysis I will obtain research to support the devastating effects of deportation on family members of those deported.. I hypothesize that family members go through anguish and emotional distress due to their family members' deportation.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/ressa.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/ressa.pdf</a></p>
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34	<p><b>Immigration Effects On Mental Health</b></p> <p><i>Zanaya Ritter</i></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Carina Bandhauer, Social Sciences</i></p> <p>International migrants experience a variety of challenges in everyday life and with regard to their overall mental health. Interviews were conducted among migrants in Connecticut in order to discern the nature of experiences common among migrant populations. I believe that this will help inform many people about the strains that international immigration puts on migrants' mental health.</p> <p>Interdisciplinary: Yes, Psychology and Sociology   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster:</p> <p><a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/ritter.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/ritter.pdf</a></p>
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24

## **The Lizard King and the Lord: The Sexual, Melancholic, and Defiant Byronic Hero in Jim Morrison's Poetry**

*Thomas Roche*

Time: AM

**Advisor:** *Shouhua Qi, Department of Writing and Literature*

Lord Byron crafted characters in "Childe Harold's Pilgrimage" (1812), "Don Juan" (1819), and "Manfred" (1817), which would be defined as Byronic heroes. They were sexual, melancholic, and defiant. These traits characterized the rock star, Jim Morrison, of the Doors. He was a living embodiment of the Byronic hero. Morrison was a sexual icon with an air of mystery as he took the stage in defiance against authority during the mid to late 1960s. However, Morrison's true passion was poetry, and music was a mode to deliver his poems to large audiences. His published written poetry and Byronic themes are present in numerous poems he wrote. Therefore, a cross-comparison of Lord Byron's poems, "Manfred" (1812), "Don Juan" (1819), "Childe Harold's Pilgrimage" (1812), and Jim Morrison's poems, "American Prayer" (1970), "The Long Sweep" (1971) and "If Only I" (1967) reveal that Morrison's poetry contains the Byronic themes of sexuality, melancholy, and defiance.

Interdisciplinary: No | Undergraduate

**Poster Presentation**

URL for poster:

<https://archives.library.wcsu.edu/relatedObjects/wrd/2023/roche.pdf>

52

**Cyanobacteria Toxin Genes in Connecticut Lakes****Keyner Rojas**

with: Aileen Perez and Mariana Alpizar

Time: PM

**Advisor:** *Edwin Wong, Biology*

Cyanobacteria have inhabited the earth for approximately 3.5 billion years. They are credited with the creation of Earth's oxygen atmosphere, as they were one of the earliest photosynthetic organisms to evolve. Cyanobacteria are extremely resilient organisms; they can produce energy via photosynthesis and the fixation of atmospheric nitrogen. Unfortunately, they present an ongoing danger to human and animal well-being. Through their metabolic processes, some cyanobacteria produce a variety of toxins, including neurotoxins and hepatotoxins. Some have even been linked to the development of diseases such as amyotrophic lateral sclerosis (ALS), while others such as microcystin are suspected carcinogens. We are currently performing various studies to gain a better understanding of trends in cyanobacterial populations, such as investigating the toxic potential of cyanobacteria through qPCR and PCR, as well as utilizing genus-specific PCR primers to determine which genera are the most common carriers of toxin genes.

Interdisciplinary: No | Undergraduate

**Poster Presentation**

URL for poster:

<https://archives.library.wcsu.edu/relatedObjects/wrd/2023/rojas.pdf>

25	<p><b>Male and Female Madness in Shakespeare's Hamlet and Madness in the Patriarchal Elizabethan Society</b></p> <p><i>Charlotte Rothen</i></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Shouhua Qi, English</i></p> <p>The Tragedy of Hamlet, Prince of Denmark by William Shakespeare gives us a look into Elizabethan society's thoughts and beliefs on mental health and mental illness. My research project studies how Shakespeare "holds the mirror" to the patriarchal beliefs of this society through the difference in depiction of the male main character Hamlet's relationship with madness and his love interest, Ophelia's. Through such a study we will gain a fuller understanding of not only Hamlet and Ophelia as portrayed in the play, but also, more importantly, how the dominant patriarchal ideologies have conditioned our perceptions and experiences in mental health.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/rothen.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/rothen.pdf</a></p>
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26	<p><b>Response of Arctic Sea-Ice to Changes in Driving Forces</b> <i>Brigid Rubel</i></p> <p>Time: AM</p> <p><b>Advisor:</b> <i>James Boyle, Physics, Astronomy, and Meteorology</i></p> <p>The purpose of this project is to investigate the Arctic sea-ice decline and the possible causes and effects of the loss. The sea ice area has decreased since 1979, with the largest losses being in the summer and early autumn. The change in the Arctic sea-ice area is due to a combination of changes in external and anthropogenic forcing—the global mean temperature, CO2 concentration, and the collective anthropogenic CO2 emissions—and internal variability and cycles. These factors cause thinner ice and sea ice cover that is more vulnerable to melt during the summer and prevents the reflection of solar radiation and, therefore, prevents the cooling of the Arctic and increases sea surface temperatures. Our results are demonstrated by a one-dimensional vertical air sea ice ocean model. This simulation model considers the physical mechanisms with sea ice growth and melt, including feedback mechanisms.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/rubel.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/rubel.pdf</a></p>
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53	<p><b>Thermal Tolerance in Atlantic Killifish</b></p> <p><b><i>Matt Ruegg</i></b></p> <p>with: Alan Villon</p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Michelle Monette, Biology Department</i></p> <p>Climate change is increasing temperatures in estuarine environments. We studied the effects of increased water temperatures on Atlantic killifish to determine: What effect does acclimation to variable temperature have on thermal tolerance? What molecular mechanisms underlie this effect? We exposed killifish to three treatments: a control tank at 20°C, a constant warm tank at 28°C, and a variable tank cycling between 20°C and 28°C, every two days. Critical thermal maximum was used to assess thermal tolerance. Hematocrit and gill heat shock protein 70-1 (HSP70-1) gene expression were examined as potential underlying mechanisms. Our results indicate that acclimation to variable warm temperature increases thermal tolerance to the same degree as acclimation to constant warm temperature; however, changes in hematocrit and gill HSP70-1 gene expression do not appear to be mechanisms underlying this effect. Our data suggest that killifish have the ability to acclimate to fluctuating temperature conditions caused by climate change.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/ruegg.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/ruegg.pdf</a></p>
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27	<p><b>Spatial Analysis of Bail Reform in New York City</b> <i>Victoria Salerno</i> with: N/A</p> <p>Time: AM</p> <p><b>Advisor:</b> <i>Rainer Kroll, JLA</i></p> <p>The research examined the effect on crime rates due to the bail reform by analyzing cases from NYC Open Data over a four year period, 2018-2021. Petit larceny and robbery were the two crimes studied. The collected data was further analyzed by tests ran using the program ArcGIS. Results were determined by creating a spatial analysis and an examination of environmental criminology factors. The main indication provided by the data was that location matters, this was indicated by the hotspots formed from kernel density analysis. These indicated hotspot areas can help law enforcement to enact procedures targeting these spots. The data showed overall the crime rates for both crimes decrease after bail reform was implemented. It is important to note that the results also indicated effects from Covid-19, organizational behavior, and police culture on crime rates.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/salerno.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/salerno.pdf</a></p>
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54	<p><b>Efficacy of AMF in Protecting Grass from Salt Shock</b> <i>Cecilia Schoeni</i></p> <p>with: Keira Lane Gabriella Silva</p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Hannah Reynolds, Biology</i></p> <p>NaCl has commonly been used as an effective de-icing technique on roadways, although this can result in large amounts of salt runoff into grass as the ice melts. Plants, such as grass, need to take up nitrogen to grow. Exposure to high salinity decreases water absorption and inhibits this process. It remains unknown what factors can best protect the plants; however, we know that plants with arbuscular mycorrhizal fungi (AMF) can become more resistant to environmental stressors. We hypothesized that AMF serves as protection for grasses exposed to high salinity, leading to healthier roots and shoots. We anticipated that plant growth will be most affected in plants that receive the highest amounts of salinity. To test this, we exposed grass treated with AMF to salt concentrations between 0 – 200 mM. Five days after salt shock, the mass and length of the roots and shoots were taken to assess growth.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/schoeni.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/schoeni.pdf</a></p>
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33	<p><b>An Implementation Evaluation of a Residency Educator Preparation Program for Teachers of Color</b></p> <p><i>Brianne Shea</i></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Tricia Stewart, Education</i></p> <p>This poster represents the research plans for my doctoral dissertation study. The program under evaluation is a residency model created to minimize barriers for teacher candidates of color. Of particular interest are the ways the program supports and cultivates candidates' career aspirations. Methods are mixed and include interviews with organizational staff and consumers with existing data from the program. Data analysis techniques will be presented, as well as make up of data collection and sources. Interview processes will be expanded, as well as the variety and purpose of varied stakeholder interview sources. Interview protocols will be presented. The poster will share data collection methods and analysis, as well as validity.</p> <p>Interdisciplinary: No   Graduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/shea.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/shea.pdf</a></p>
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55	<p><b>The Appropriation of Shakespeare's Othello and Midsummer Night's Dream in Disney's Gargoyles</b></p> <p><b>Matthew Sterk</b> with: N/A</p> <p>Time: PM</p> <p><b>Advisor:</b> Shouhua Qi, <i>Department of Writing &amp; Literature</i></p> <p>The work of William Shakespeare has been adapted and appropriated for a multitude of different media for the centuries since the early 1600s. One of these appropriations is Gargoyles (1994-1997), a show produced by Disney Television Animation and created by Greg Weisman. I am comparing characters introduced in Disney's Gargoyles with their original Shakespearean counterparts and exploring how similar and or different they are from each other. There will also be explorations of race based on the works of Othello and how it applies to the show in their exploration of race in the show as the Gargoyles are subjected to bigotry and other forms of hate. I'll be doing this by analyzing the show and the original plays while supplementing them with additional research from scholarly sources and statements made by creator Greg Weisman. Featuring many fantasy elements, the show appropriates various Shakespearean works into its canon. In particular, Othello and Midsummer Night's Dream are used to populate its world and to enrich it with bold and interesting takes on the classic stories. Characters brought to life on the screen to serve the artistic and sociopolitical agendas of the modern artists.</p> <p>Interdisciplinary: No   Undergraduate</p> <p><b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/sterk.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/sterk.pdf</a></p>
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56	<p><b>The Role of Osmotic Stress Transcription Factor 1 in the Seawater Acclimation of Atlantic salmon (<i>Salmo salar</i>)</b>  <i>Jocelyn Villacreses</i></p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Michelle Monette, Biology</i></p> <p>Atlantic salmon are an anadromous species that hatch in rivers and migrate to the ocean as juveniles. To maintain homeostasis during migration from freshwater to seawater, osmoregulatory proteins in the gill regulate internal ion and water concentrations. We examined the gene expression of osmotic stress transcription factor I (OSTF1) in the gills of salmon, as its role in seawater acclimation of this species remains unknown. To test this, we harvested gill tissue from salmon transferred from freshwater to seawater and measured OSTF1 gene expression after 0h, 1h, 4h, 8h, 24h, and 72h. Our results show that after 1h in seawater, gene expression of OSTF1 was transiently upregulated in the gill and returned to baseline after 4h. This suggests that OSTF1 may play a role in the early response of the salmon gill to seawater and contributes to the mechanistic understanding of how euryhaline species acclimate to high salinity environments.</p> <p>Interdisciplinary: No   Undergraduate  <b>Poster Presentation</b></p> <p>URL for poster:  <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/villacreses.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/villacreses.pdf</a></p>
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57	<p><b>A Price Tag on Speed: How Much Does an F1 Team Cost?</b> <i>Stanley Vishinski</i> with: Ryan Denmark</p> <p>Time: PM</p> <p><b>Advisor:</b> <i>Rotua Lumbantobing, Social Sciences</i></p> <p>The objective of this research project is to provide a valuation of a leading competitive Formula One motorsports team, Oracle Red Bull Racing. In our study, we analyzed factors associated with making Red Bull an effective motorsports team. This includes all assets such as employees, the fleet of racecars, all equipment needed for maintenance, research and development, and all facilities used by the organization. We also focus on valuating revenue streams such as sponsorship deals, merchandise sales, FIA payout structures, and TV deal revenue. With these variables accounted for, we can create an empirical framework to project future values of these factors and attempt to put a net value on what this motorsport organization would cost today if it were for sale.</p> <p>Interdisciplinary: No   Undergraduate <b>Poster Presentation</b></p> <p>URL for poster: <a href="https://archives.library.wcsu.edu/relatedObjects/wrd/2023/vishinski.pdf">https://archives.library.wcsu.edu/relatedObjects/wrd/2023/vishinski.pdf</a></p>
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## Quick-reference

Participants in poster number order

Poster num	Name	Title	Time
1	John Arnett	Effects of Urbanized Roads on Northern Diamondback Terrapins	AM
2	Peter Bigica	Wavelet Decomposition Based Stock Forecast using Machine Learning Algorithm	AM
3	Peter Dittmar	An Exploratory Case Study Of Educators' Experiences In The Time Of Covid-19: Compassion Fatigue As An Unintended Consequence Of A Global Pandemic	AM
4	Jennifer Hengen	Understanding Early Childhood Education Programming and the COVID -19 Pandemic: The Role of Structured Play in Early Childhood Programming	AM
5	Kristina Korin	The Impact of Ultra-Processed Foods on Mental Health Disorders : A Review of the Literature	AM
6	Abba Abrams	The New England Patriots: Are They Worth It?	AM
7	Sara Azzi	Mental rotation learning with task-specific interventions	AM
8	Skylar Bartush	The Role of Effective Lecture Note-Taking in Facilitating Academic Performance	AM
9	Samantha Burns	Go Pack Go: A Valuation of the NFL's Green Bay Packers	AM
10	Madeleine Burt	Salt Stress: The Effect of Salt on Ammonification in Local Sediment Over Time	AM
11	Jade Carriero	Undergraduate Student Perspectives on Teaching Assistants	AM
12	Charlee Cordle	Arbuscular mycorrhizal fungi (AMF) Symbiosis: a Mitigation Strategy For Turf Grass Against Salt Stress	AM
13	Abby Cunningham	The Progressive Nature of Theatre Arts With Regard to Racial Diversity and Representation	AM
14	Jean-Pierre Delaugere	Acclimation Temperature Effects Thermal and Freshwater Tolerance in Atlantic Killifish ( <i>Fundulus heteroclitus macrolepidotus</i> )	AM
15	Claire Eastwood	The Impact of Involvement in a Biblically Based Faith Community on the Integration of First-Generation Immigrants	AM

16	Barbara Machado	Summer and Winter: Venom composition comparative analyses of two scorpion species	AM
17	Andreia Marques	From Innocence to Experience: Child Development through William Blake's Songs of Innocence	AM
18	Humayra Meem	Expression and Purification of Malaria's Cytochrome C	AM
19	Nicholas Nalbatian	Can You Afford the Minnesota Vikings?	AM
20	Ryan Nason	Housing Inequality in Greater Danbury	AM
21	Nicole Peralta	Media, Law and Human Trafficking: An Analysis of the Human Trafficking Reports in the Tri-state Area	AM
22	George Pintado	Walkability and Community Cohesion in Danbury, CT	AM
23	Adam Psenicnik	Classification of Scorpion Toxins by A.I.	AM
24	Thomas Roche	The Lizard King and the Lord: The Sexual, Melancholic, and Defiant Byronic Hero in Jim Morrison's Poetry	AM
25	Charlotte Rothen	Male and Female Madness in Shakespeare's Hamlet and Madness in the Patriarchal Elizabethan Society	AM
26	Brigid Rubel	Response of Arctic Sea-Ice to Changes in Driving Forces	AM
27	Victoria Salerno	Spatial Analysis of Bail Reform in New York City	AM
31	Kara Mia Colon	Trauma-Informed Teaching Practices: A Case Study Of Formal And Informal Teacher Experiences	PM
32	Andrew Powers	A Preliminary Census of Copperheads ( <i>Agkistrodon contortrix</i> ) in Connecticut, USA.	PM
33	Brianne Shea	An Implementation Evaluation of a Residency Educator Preparation Program for Teachers of Color	PM
34	Zanaya Ritter	Immigration Effects On Mental Health	PM
35	Rómulo Aguillaume	Real Madrid's Endless Value	PM
36	Taylor Albert	Expression and Purification of Glutathione Reductase	PM
37	Brynn Alvord	Food for Thought: An Ethnographic Study of Nonprofit Volunteers Addressing Food Insecurity	PM
38	Giovanna Diniz	Amanda Wingfield and Linda Loman as Paradigms of Patriarchy in Tennessee Williams' <i>The Glass Menagerie</i> (1944) and Arthur Miller's <i>Death of a Salesman</i> (1949)	PM



<b>39</b>	Jodian Ennis	Paid Family Leave and Gender Equity	PM
<b>40</b>	Kira Fontaine	Brutality of Nature and Women as Portrayed in <i>The Handmaid's Tale</i>	PM
<b>41</b>	Britney Guachun	El Pase del Niño Viajero in Azuay, Ecuador: A Celebration of Heritage and Culture	PM
<b>42</b>	Shafaq Hashmi	The Effect of Increased Salinity on Soil Organic Matter and Fungal Community Diversity in Ives Pond	PM
<b>43</b>	Rina Hernandez	Subjugation, Isolation, and Madness: Female Oppression in "The Yellow Wallpaper" and "A Rose for Emily"	AM
<b>44</b>	Marquet Humphrey	An Analysis of Youth Voting Patterns & Root Legislative Issues	PM
<b>45</b>	Caleigh Mcallister	Depiction of Greek Mythological Female: Wicked, Weak, or Willing Wife	PM
<b>46</b>	Mariana Miller	The Son of a Chines Emperor and an Indian Queen: The Casting of Heathcliff from Emily Brontë's Novel <i>Wuthering Heights</i> in the 1939, 1992, and 2011 Film Adaptations	PM
<b>47</b>	Keira Mohan	Development of a Perceptions of Vegans Scale	PM
<b>48</b>	George Mohigel	What's at the End of the Rainbow for the Celts?	PM
<b>49</b>	Christopher Murphy	Determination of the isotopic ratios of lead through direct injection ESI-MS	PM
<b>50</b>	Maia Quirk	The Value of Education in Immigrant Communities	PM
<b>51</b>	Madeline Ressa	Devastation of Deportation on Loved Ones in the United States	PM
<b>52</b>	Keyner Rojas	Cyanobacteria Toxin Genes in Connecticut Lakes	PM
<b>53</b>	Matt Ruegg	Thermal Tolerance in Atlantic Killifish	PM
<b>54</b>	Cecilia Schoeni	Efficacy of AMF in Protecting Grass from Salt Shock	PM
<b>55</b>	Matthew Sterk	The Appropriation of Shakespeare's <i>Othello</i> and <i>Midsummer Night's Dream</i> in Disney's <i>Gargoyles</i>	PM
<b>56</b>	Jocelyn Villacreses	The Role of Osmotic Stress Transcription Factor 1 in the Seawater Acclimation of Atlantic salmon ( <i>Salmo salar</i> )	PM
<b>57</b>	Stanley Vishinski	A Price Tag on Speed: How Much Does an F1 Team Cost?	PM
<b>58</b>	David Lawrence	Antibiotic Induced Permeability of the Blood Brain Barrier	PM

## Student volunteers

Ebun Adeniji  
Sara Azzi  
Jade Carriero  
Gabriella Castorina  
Ciera Hernandez  
James Huang  
Meghan Lorenzen  
Katherine Naulaguari  
Martha Quezada  
Alexa Riggio  
Sara Risko  
Liana Rodriguez  
Daniel Russo  
Kaylee Siguenza  
Corey Tehe

## WRD Planning Committee

Dr. Adam Brewer, WRD Chair, Education  
Dr. Bernard Gee, Psychology  
Dr. Antonia R. Giannakakos-Ferman, Education  
Debbi Johnson, Biology  
Dr. Michelle Monette, Biology  
Dr. Hannah Reynolds, Biology  
Brian Stevens, Library and WCSU Archives  
Dr. Emily Stevens, Health Promotion and Exercise Science