Promoting Interdisciplinary Conversations

2025 Western Research Day Schedule

Friday, May 9, 2025

10:00 – 11:00	Opening Remarks and Keynote Address
11:00 – 12:30	Poster Session
12:30 – 1:30	Light Refreshments/ Lunch
2:00 – 2:30	Closing Remarks and Provost Awards

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2025 Keynote Speaker

Fernando Bermudez

Fernando Bermudez was wrongfully convicted in the shooting death of Raymond Blount in 1991 and lost over 18 years in prison before his exoneration in 2009. Fernando has given national and international talks about his experiences and uses graffiti to highlight issues of social justice, such as the suppression of votes and the disproportionate influence of the prison industrial complex on Black and Brown communities. Fernando is a WCSU Alumnus, he graduated in 2011 with a bachelor's degree in the Social Sciences. If you are interested in learning more Mr. Bermudez has provided a link to the trailer for a new documentary about his story. https://freefernando.com/

Student Participants

Number	Name	Title	Department	Status
1	Adney, Abigail	Metagenomic Profile of Gut Microbiota in Free-Range Chickens	Biology	Undergraduate
2	Azzi, Sara	Elements of Student Engagement: Online vs. In-person Learning	Psychology	Undergraduate
3	Benson-Beckman, Nora	Lavinia Fontana; Italy's 16th Century "Pittore Singolare"	Anthropology Major/Women, HIS/WS department	Undergraduate
4	Beutel, Elayna	Caught in the Web: Investigating the Molecular Relationship of HAPLN1 and Aggrecan in Perineuronal Nets (PNNs)	Biology	Undergraduate
5	Bey-Wagner, Claudia	Seasonal Variations in Scorpion Envenomation in Mexico	Biology	Undergraduate
6	Campoverde, Carla	Diet Dilemma: A Metagenomic Analysis of Dog Fecal Matter	Biology	Undergraduate
7	Chiaia, Sophia	Assessing the Effectiveness of Cedarwood Oil-based Minimum-Risk Pesticides for Controlling Blacklegged Ticks in Residential Settings	Integrative Biological Diversity M.S.	Graduate
8	Daigle, Lisa	The Lived Experiences of Paraeducators at the Secondary School Level	EdD in Instructional Leadership, Education Department, School of Professional Studies	Graduate-Doctoral
9	Dolock, Arianna	Unintended Consequences: Title IX's Role the Decrease of Women in Leadership Roles	History	Undergraduate
10	Edwards, Sean	Machine-Learning Based Hybrid Methods to Predict Premium Payments	Applied Mathematics	Undergraduate

11	Errichiello, Sebastian	Faith in the Trenches: An analysis of Military Chaplains in the First World War.	History	Undergraduate
12	Espana, Alisson	Media Coverage of Organized Crime in Guatemala: Public Perception and Narratives	Justice and Law Administration (JLA)	Undergraduate
13	Fayed, Sarah	Taking Off the Mask: The Salient Use and Function of Disguises in Shakespeare's Twelfth Night	English	Undergraduate
14	Fitch, Tara	Louisa May Alcott	History	Undergraduate
15	Graham, Erin	The DNA of Decay	Biology	Undergraduate
16	Heineken, Olivia	Barking up the Microbial Tree: A Metagenomic Study of Canine Oral Microbiomes	Biology	Undergraduate
17	Iken, Joseph	Relapse of Social Avoidance in Autism Compared to Neurotypical	Psychology/Applied Behavior Analysis	Undergraduate
18	Kakadeles, Kaitlyn	Award-Winning Public School Superintendents: Self-Reflection Is the Key to Having Impact	EdD in Instructional Leadership, Education Department, School of Professional Studies	Graduate-Doctoral
19	Kirkness, Lindsay	Analyzing Historical Environmental Data to Evaluate Climate Change in Connecticut	Biology	Undergraduate
20	Marsh, Sarah	Heloise and Abelard: Ethics, Agency, and The Modern Perspective	Women's Studies Minor	Undergraduate
21	Masci, Nicole	The Arthurian Effect: What Role did Arthurian Chivalry Play in the History of Britain's Monarchy?	History	Undergraduate
22	Meenan, Madison	Investigating the Microbial Diversity of Lake Lillinonah	Biology	Undergraduate
23	Mendez Vasquez, Karla	The Effect of Male vs. Female Researchers on Stress Behaviors in Male Mice	Biology	Undergraduate

24	Montero, Jose	Metagenomics in University Drains: What Type of Bacteria are Hiding in Sinks?	Biology	Undergraduate
25	Moody, Kylie	Biofeedback Assisted Controlled Breathing to Reduce Cognitive Stress in College Students	Psychology	Undergraduate
26	Muscatello, Victoria	Evaluating the Use of 360° High-Definition Video Technology to Improve Counseling Simulations in Addiction Studies Training	Psychology	Undergraduate
27	Nevins, Laura	A Comparative Analysis of Cat Gut Microbiomes	Biology	Undergraduate
28	Nguyen, Judy	Dumpster Diving for DNA: Analysis of Bacterial Communities in Restaurant and Communal Dumpsters	Biology	Undergraduate
29	Ortega, Mariafernanda	Immigration Policies and Their Impact on the Immigration Experience	Social Sciences - Political Science	Undergraduate
30	Pancurak, Steven	Influence of Warming on Gill Structure of *Fundulus heteroclitus*	Biology	Undergraduate
31	Pardo, Joanna	Risks of Being a Woman: Pre- and Post-Immigrant Experience	Social Sciences: Political Science	Undergraduate
32 (withdrawn)	Petrucci, Amy	The Evolution of Arthurian Legend in Visual Arts: A Cross-Period Analysis from Medieval to Modern Interpretations	MA in History, Department of History, Philosophy, and World Perspectives	Graduate
33	Psenicnik, Adam	Depthwise Separable Convolutions in Dense Convolutional Networks	Mathematics	Undergraduate
34	Risko, Sara	The Impact of Urban Farming Education on Food and Nutrition Security	BS Public Health, Department of Health Promotion Studies	Undergraduate

35	Saunders, Rachel	Pathways to AP Mathematics in an Urban School District	EdD in Instructional Leadership, Education Department, School of Professional Studies	Graduate-Doctoral
Oral presentation	Sikder, Soumya	How do Stadium Renovations Impact Ticket Sales and Attendance for Sports Events?	Economics	Undergraduate
36	Singh, Nakita	The Ethics of Misogyny: How Men Exploit and Exclude Women	Political Science	Undergraduate
37	Smith, Drew	Phenology of Visitation in a Bee Pollinated Flower in the Northeast	Integrative Biological Diversity	Graduate
Oral presentation	Starr, Alex	Applying Progress to Pedagogy: Black Composers, Social Reform, and Its Implications for Urban Music Education	Music Education (Honors Enhancement for MUS 231)	Undergraduate
38	Sultana, Nasrin	Understanding Cyanobacterial Bloom Dynamics in Bantam Lake (2018-2024) by Analyzing Water Quality and Climate Variables	Integrative Biological Diversity	Graduate
39	Turcios, Maricela	Investigating Apoptosis Pathways in *Plasmodium falciparum*: Purification and Characterization of Cytochrome C	Biochemistry	Graduate
40	Vieira, Vitoria	Students in Community Outreach: Applied Relevance of a Sustainability Walk Audit	Social Sciences (Anthropology/Sociology)	Undergraduate
41	Young, Michelle	Menstrual Health on a College Campus	Doctorate of Nursing Practice (DNP), Nursing Department	Graduate-doctoral
42	Zibelin, Emily	Shifts in Flowering Date of Spring Wildflowers Across Connecticut	Biology	Undergraduate

Faculty Participants

Name	Department
Katherine Allocco	History
Hasan Arslan	JLA
Adam Brewer	Applied Behavior Analysis
Marjorie Callaghan	Music
Eileen Campbell	Nursing
Stavros Christofi	Mathematics
Dorothy Christopher	Biology
Brian Clements	Honors
Neeta Connally	Biology
Joshua Cordeira	Biology
Marcia Delcourt	Education
Edwin Dr. Wong	Biology
Bernard Gee	Psychology
Kristin Giamanco	Biology
Heather Levy	English
Leslie Lindenauer	History
Rotua Lumbantobing	Economics
Laurence Marsicano	Biology
Michelle Monette	Biology
Mary Murphy	Psychology
Helena Judith Prieto	Chemistry
Carlos Santibanez-Lopez	Biology
Emily Stevens	HPX
Xiaodi Wang	Math
Robert Whittemore	Anthropology

Edwin Wong	Biology

Judges

Last Name	First Name	Department
Allocco	Katherine	History and women's studies
Arslan	Hasan	JLA
Assenza	Pauline	Management
Autuori	Christel	HPX (Holistic Health)
Band	Shahab	Computer Science
Bennett	Diane	Nursing
Campbell	Eileen	Nursing
Cordeira	Joshua	Biology
Cumella	Patricia	Nursing
Custer	Kelli	World Languages
Dalton	Melissa	HPX
Delcourt	Marcia	Education
Dugal	Mohinder	MBA program
Farrell	Maureen	HPX
Flynn	Jennifer	MIS
Giamanco	Kristin	Biology
Gloster	Aaron	Neurobiology (Wesleyan)
Greco	Nicholas	Chemistry
Heybruck	Krista	HPX
Huang	Carol	Finance
Koukopoulos	Pano	Biology
Kuhn	Stephanie	Education Psychology
Lewis	Bryan	Hospital
Lindenauer	Leslie	History, Phil. and World Perspect.
Lippincott	Aura	Instructional Designer

Lumbantobing	Rotua	Finance
Lupinacci	Jeanette	Nursing
Miller	Thomas	JLA
Murphy	Mary	Psychology
O'Brien	Jennifer	Library
Perrelli	Julie	Dean of Student Affairs
Phillips	Terrance	Library
Prieto	Helena	Chemistry
Robertson	Forest	Chemistry
Russell	Scott	HPX
Sprague	Dylan	Library
Stannard	Alicja	HPX
Stevens	Brian	Library
Wagener	Mitch	Biology
Warren	Linda	Nursing
Webb	Qur-an	Social work

Student Abstracts

1	**Metagenomic Profile of Gut Microbiota in Free-Range Chickens** ***Abigail Adney*** With Grant Bellamy **Advisor:** *Edwin Wong, Biology* The recent bird flu outbreak in the United States highlights growing concerns over disease management protocols in poultry. More than half of U.S. commercial poultry farms routinely administer antibiotics to combat microbial outbreaks; however, overuse has reduced gut microbiome diversity and promotes antibiotic-resistant bacteria. Scientific studies on avian influenza often use germ-free chickens or those exposed to specific bacteria, which do not reflect the natural microbial communities found in commercial or family farms. This study investigates the gut microbiome of chickens raised on a free-range midsize family farm in Connecticut where antibiotic use is limited. DNA was extracted from fecal samples, and 16S rRNA gene sequencing was used to identify bacterial species present. By establishing the gut microbiome profile of free-range chickens, this research explores microbial diversity and potential natural resistance to avian flu. Findings could inform microbiome-based interventions to reduce antibiotic reliance in poultry farming. URL for poster: **Click here.** Undergraduate

2	**Elements of Student Engagement: Online vs. In-person Learning** ***Sara Azzi*** **Advisor:** *Bernard Gee, Psychology* An increasing number of undergraduate students enroll in online courses each year, though prior literature showed that satisfaction is often rated lower in online courses compared to in-person courses. We administered a survey to gain students' perspectives of online and in-person learning formats. The majority of respondents rated in-person learning superior in terms of learning, engagement, and overall satisfaction. However, respondents indicated that they plan to continue to take more online courses in the future despite deficits in engagement and learning. We recommend educators increase engagement strategies when teaching online to maximize student satisfaction and learning in online formats. URL for poster: **Click here.** Undergraduate
3	**Lavinia Fontana; Italy's 16th Century "Pittore Singolare"** ***Nora Benson-Beckman*** **Advisor:** *Katherine Allocco, History* Lavinia Fontana, a 16th century Bolognese painter, pioneered women's inclusion in the artistic world of the Italian Renaissance because of her commercial success, great respect from her peers, and unusual access to public spaces and leaders. Highly skilled, she became the favored artist of Bologna and Rome's nobles, clergy, and the papacy; she became the first woman to provide for herself, her husband, and their eleven children, reversing the gender roles in place. Her works are elegant, highly prized, and often quite scandalous. During her life her works were regarded by her peers and patrons as the greatest depictions of skill, luxury, opulence, and drama. She set the standard for future female artists, and completed many feats of greatness that of which women were not thought to be capable or worthy. She spent her life dedicated to what she loved, and her artistic and feminist legacy continues today. URL for poster: **Click here.** Undergraduate

4	**Caught in the Web: Investigating the Molecular Relationship of HAPLN1 and Aggrecan in Perineuronal Nets (PNNs)** ***Elayna Beutel*** **Advisor:** *Kristin Giamanco, Biology* Within the neural extracellular matrix (ECM) lie enigmatic, web-like structures called perineuronal nets (PNNs). These structures are theorized to modulate plasticity and protect neurons from oxidative stress. To fully understand the precise function of PNNs, we must have a complete understanding of their structure. The chondroitin sulfate proteoglycan, aggrecan, is a key orchestrator of PNN formation. Hyaluronan and proteoglycan link protein 1 (HAPLN1) stabilizes the binding of aggrecan to the scaffolding molecule hyaluronan. Using a glioma cell line, we investigated how PNNs form when transfected with mutant aggrecan, which cannot bind to hyaluronan. Specifically, we examined the relationship between HAPLN1 and aggrecan when binding to hyaluronan is impossible. Defining the molecular interactions between aggrecan and HAPLN1 is essential for our understanding of the base components that coalesce at the cell surface to form PNNs. PNNs are potential therapeutic targets for certain neurological disorders, such as Alzheimer's disease, schizophrenia, and epilepsy. URL for poster: **Click here.** Undergraduate

5	**Seasonal Variations in Scorpion Envenomation in Mexico** ***Claudia Bey-Wagner*** **Advisor:** *Carlos Santibanez-Lopez, Biology* Scorpions are nocturnal predators that exhibit heightened activity during warmer months, implying a potential relationship between temperature and scorpion envenomation in Mexico. When scorpion venom enters the human body, homeostasis can be destabilized, leading to illness or disease. Recent research has suggested that the number of epidemiological studies conducted in North America has not kept pace with the occurrences of scorpion envenomation in the region. This study utilized a decade of data (2012-2022) from the National Epidemiological Vigilance System (SNVE) and the National Meteorological System from the National Commission of Water (CONAGUA) to examine the correlation between monthly average temperature and reported envenomation cases in states with medically important scorpions. Pearson's correlation analysis in R revealed a positive correlation between increased mean monthly temperatures and higher envenomation rates nationwide. Notably, however, a trend toward reduced annual envenomation cases was observed in recent years. URL for poster: **Click here.** Undergraduate
6	**Diet Dilemma: A Metagenomic Analysis of Dog Fecal Matter** ***Carla Campoverde*** With Karla Mendez Vasquez **Advisor:** *Dr. Edwin Wong, Biology* A growing health crisis in America is the rise of obesity that has extended into the dog population. Diet can improve the overall health of dogs, but it can also be related to gastrointestinal issues. Previous research has demonstrated that diet can have an impact on the diversity of the gut microbiome. The current study analyzed the microbes in fecal matter from a dog that was fed a protein-low-fiber based diet. It was hypothesized that this specific diet would result in high microbiome diversity, as seen in other lab animal studies. DNA was isolated from fecal matter, 16S rRNA genes were sequenced to identify the bacteria present, and phylogenetic relationships were determined. Recognizing the impact of a diet on microbiome diversity is crucial; the more we study these factors, the better we can develop solutions to improve dogs' health. URL for poster: **Click here.** Undergraduate

7	**Assessing the Effectiveness of Cedarwood Oil-based Minimum-Risk Pesticides for Controlling Blacklegged Ticks in Residential Settings** ***Sophia Chiaia*** With Neeta P. Connally (Western Connecticut State University, Danbury, CT), and Victoria L. Hornbostel (Western Connecticut State University, Danbury, CT **Advisor:** *Neeta Connally, Biology* In the northeastern US, *Ixodes scapularis* (Blacklegged Tick) is the primary vector of Lyme disease and other tick-borne illnesses. Acaricide applications are commonly recommended for reducing ticks in backyards and mitigating human risk for tick bites, but concerns over human and environmental toxicity deter many from using them. Products with minimum-risk active ingredients, like cedarwood oil (CWO), are marketed as “safer”, “eco-friendly” alternatives for tick control. These products are often exempt from the Environmental Protection Agency (EPA) registration and remain poorly evaluated. We assessed the effectivness of professionally applied CWO-based acaricides on 40 residential properties in Connecticut—20 received CWO treatments and 20 served as untreated controls. Overall, we found no significant difference in tick density between treated and untreated properties ($p > 0.05$). However, effectiveness varied by product. For example, properties treated with Cedarcide had significantly higher tick densities compared to those treated with Cedarcure ($p = 0.032$). URL for poster: **Click here.** Graduate

8	**The Lived Experiences of Paraeducators at the Secondary School Level** ***Lisa Daigle*** With Marcia A. B. Delcourt, PhD; Katherine Roe, PhD; Lauren Moyer EdD **Advisor:** *Marcia Delcourt, Education* Paraeducators assist teachers in the classroom. More specifically, they provide support for students with special needs by working with students 1:1 or in small groups. The demand for high quality paraeducators has increased the need to explore ways to recruit, train, and retain these educators. The purpose of this multi-case study was to explore current roles of secondary school paraeducators. Responses to individual interviews and follow-up questions were analyzed using an open-coding system. Themes included: making a difference in the lives of children, fulfilling a wide range of roles and responsibilities, working with administrators, obtaining appropriate PD and training, gaining confidence and competence, improving morale and job satisfaction. These results provide an evidence-based reference to explore improvements for paraeducators' growth and development as educators. URL for poster: **Click here.** Graduate-Doctoral

9	**Unintended Consequences: Title IX's Role the Decrease of Women in Leadership Roles** ***Arianna Dolock*** **Advisor:** *Katherine Allocco, HIS* When the Federal government passed Title IX in 1972, the number of female college athletes increased significantly across the country. When legislation was finally enforced and women's teams were added, the proportional number of women in athletic leadership roles decreased significantly, including the shutdown of the AIAW, the only association providing oversight on women's athletics before 1981. Since the NCAA's takeover, males have dominated the newly created vacancies, as men's and women's athletic departments have combined. Many women coaches and administrators lost their voice and leadership in their sports. Analyzing NCAA participation records, Title IX annual reporting, lawsuits filed on behalf of the A.I.A.W., and budgeting will show that an unintended consequence of Title IX's implementation was less female leadership in women's collegiate athletics, particularly basketball. To this point, this research compares Connecticut State University's commitment to women in leadership roles to other NCAA-sponsored institutions. URL for poster: **Click here.** Undergraduate

10	**Machine-Learning Based Hybrid Methods to Predict Premium Payments** ***Sean Edwards*** **Advisor:** *Xiaodi Wang, Math* In this research we propose a hybrid method of combining clustering machine learning methods alongside regression analysis, versus regression analysis alone to predict the premium payments incurred by a set of insurance contracts, using scikit-learn and an actual insurance portfolio. We will divide all customers in the data set into clusters by machine learning methods, and then train separate regression algorithms on each cluster of customers. We will then train various algorithms on the same features of the test data without using clustering and see whether there is a statistically significant difference between the accuracy of predictions that used clustering vs the predictions that did not. We found that the difference between the two methods is not statistically significant at a= 0.05 in either metric, although the differences in probability between the metrics could merit further investigation. URL for poster: **Click here.** Undergraduate

11	**Faith in the Trenches: An analysis of Military Chaplains in the First World War.** ***Sebastian Errichiello*** **Advisor:** *Katherine Allocco, History* The involvement of military chaplains during World War I marked a significant evolution in their roles and responsibilities within the armed forces of Europe and a change in the public perception of them. Serving both spiritual and practical needs, these non-combatant officers provided crucial support to soldiers in the trenches, hospitals, and battlefields. This project explores the historical context, contributions, and notable figures among military chaplains in the British and French armies during the Great War, as well as the wider impact of religion as it impacted domestic social relations. Given the fact that military chaplains performed more 'mundane' tasks in comparison to firing a rifle or commanding troops, they are not often looked at in the historiography of the war. Often chaplains in their informal medical roles would see the horrors of war condensed, and would venture into No-Man's-Land, where no other soldier would consider going at times. Such acts were beyond the call of duty for these clerics-at-war, and their valorous contributions to not only the war efforts of their respective nations but of the collective wellbeing of mankind of all participants of the war, leading to a change in their general perception. This project will also be concerned with contrasting the experience between British and French chaplains. URL for poster: **Click here.** Undergraduate

12	**Media Coverage of Organized Crime in Guatemala: Public Perception and Narratives** ***Alisson Espana*** **Advisor:** *Hasan Arslan, Justice and Law Administration (JLA)* This study explores how the media portrays organized crime in Morales, Izabal, Guatemala, a small urban area. Existing research often focuses more extensively on urban settings, neglecting other localized perspectives. This research addresses this gap by examining how local media and community leaders shape public perceptions of organized crime in Morales. A mixed-methods approach will be used, including a survey of residents aged 18+ through social media platforms and semi-structured interviews with key local figures such as journalists, law enforcement, and community leaders. Survey data will be analyzed using descriptive statistics, while interview data will undergo thematic analysis. It is hypothesized that residents rely more on social media and word of mouth than traditional media outlets because of a distrust of law enforcement. The study will provide new insights into how media and informal networks influence perceptions of organized crime in smaller urban settings like Morales. URL for poster: **Click here.** Undergraduate

13	**Taking Off the Mask: The Salient Use and Function of Disguises in Shakespeare's Twelfth Night** ***Sarah Fayed*** **Advisor:** *Heather Levy, English* At surface level, William Shakespeare's comedy Twelfth Night is a lighthearted story of love triangles, crossdressing, and misunderstandings. However, at its core, the play is founded on themes of deception and transformation through the use of disguises. Twelfth Night employs disguises as a way to comment on societal norms and simultaneously motivate characters' behaviors and actions. While this is sometimes executed through physical appearance, such as Viola taking on the new identity as Cesario, Shakespeare plays with the concept of dishonesty and warped reality, such as when Malvolio behaves completely different after being presented with a lie. This paper demonstrates how Twelfth Night uses disguise and deception to subvert traditional gender roles and expectations, dismantle social hierarchies, and blur the lines between reality and fantasy in the Elizabethan era. URL for poster: **Click here.** Undergraduate
14	**Louisa May Alcott** ***Tara Fitch*** **Advisor:** *Leslie Lindenauer, History* My poster will tell the story of how Louisa May Alcott's novels both rejected and adhered to the expectations for women in the 19th century. People assume all of Alcott's characters were independent and blurred gender lines, however, there is tension in Alcott's writing, because even though a lot of her female characters had careers, they often sought ideal societal standards of domestic perfection. Alcott's relationship with her father and his teachings affected her heroines' goals and added to this nuance. Alcott often had to follow traditional norms in her books, but she did it on her own terms. I want to explore the nuance. The poster will have images and text from middle class publications such as Godey's Lady's Book and the Beecher's American Woman's Home, juxtaposed with descriptions and quotes from Alcott's novels. URL for poster: **Click here.** Undergraduate

15	**The DNA of Decay** ***Erin Graham*** With Gabriella Dane **Advisor:** *Edwin Wong, Biology* Previous studies have shown that in cemeteries, decomposing bodies can leach human pathogens into soil. In this research, soil from a gravesite in Saint Lawrence O'Tool cemetery, Brewster, NY and soil from Western Connecticut State University, Danbury, CT were collected and compared. This study takes a metagenomic approach by amplifying and sequencing the 16S rRNA genes to identify which microbes live in cemetery soil as compared to non-cemetery soil. URL for poster: **Click here.** Undergraduate
16	**Barking up the Microbial Tree: A Metagenomic Study of Canine Oral Microbiomes** ***Olivia Heineken*** With Claudia Bey-Wagner **Advisor:** *Edwin Wong, Biology* The oral microbiome of a dog is influenced by factors such as age, breed, diet, and health. Understanding the microbial community can provide insights into canine oral and systemic health, as well as potential zoonotic risks for humans. This study investigates the microbial diversity in the oral cavities of two dogs of different breeds and ages: Zeus, a 3- year-old Olde English Bulldogge, and Paddington, a 12-year-old Pomeranian. Plaque samples were collected by swabbing the supragingival area in both dogs' mouths, specifically where the teeth meet the gumline. Bacterial DNA was extracted, then amplified with PCR, and then cloned. The V3-V6 regions of the 16S rRNA genes were sequenced, and a bioinformatic analysis was performed to identify the bacterial communities present. URL for poster: **Click here.** Undergraduate

17	**Relapse of Social Avoidance in Autism Compared to Neurotypical** ***Joseph Iken*** With Olivia Hoft, Dr. Stephanie Kuhn, Dr. Mike Schlund, Dr. Ryan Kimball, Dr. Andrea Courtemanche, and Dr. Adam Brewer **Advisor:** *Adam Brewer, Applied Behavior Analysis* A well-established finding is that individuals with autism exhibit a wide range of fears, phobias, and anxieties to seemingly benign social events or routines (Brewer et al., 2024). A prominent way to cope with anxiety is to choose to avoid threats. In practice, fears are reduced with exposure-based therapy and/or medication. Laboratory models have been used to study relapse of fear relying on physiological and self-report measures; however, an important aspect is missing which is crucial for understanding anxiety disorders in autism; the behavior of choosing to avoid or approach threats associated with fears. In our ongoing laboratory study, we used an approach-avoidance decision-making task to assess relapse of social avoidance in an autism group (n=2) compared to neurotypical (n=11). We used an A-B-A design where participants acquired fear learning in context A, underwent extinction learning in context B, and were returned to context A to assess relapse (Schlund et al., 2021). While the current sample size makes it premature to make a group comparison, our findings highlight relapse of social avoidance. Exposure treatment successfully reduced avoidance for 13 out of 13 participants. Social avoidance relapsed when participants returned to the social fear aquisition setting for 10 out of 13 participants. URL for poster: **Click here.** Undergraduate

18	**Award-Winning Public School Superintendents: Self-Reflection Is the Key to Having Impact** ***Kaitlyn Kakadeles*** With Marcia A. B. Delcourt, PhD; Catherine O'Callaghan, PhD; Kristy Zaleta, EdD **Advisor:** *Marcia Delcourt, Education* This exploratory case study identified characteristics of award-winning public school superintendents. With superintendency longevity at an all-time low, leadership qualities need to be explored and used to inspire. Participants included 11 superintendents who received one or more state-wide awards for their leadership in the past six years. Data collection tools included a demographic questionnaire, an observation of a school board meeting, a review of artifacts, and a series of semi-structured interviews with each superintendent. A thematic approach revealed two findings. Finding 1: Know yourself, use your strengths to enhance your understanding of the community, and effectively communicate with each stakeholder group. Finding 2: Set and maintain the goals of the district using systematic organization to implement change and have an impact on the community. The results of this study provide suggestions to support and guide both aspiring and current leaders to enhance their leadership potential and effectiveness. URL for poster: **Click here.** Graduate-Doctoral

19	**Analyzing Historical Environmental Data to Evaluate Climate Change in Connecticut** ***Lindsay Kirkness*** With Emily Zibelin **Advisor:** *Dorothy Christopher, Biology* Over the past century, climate change has significantly impacted global weather patterns, leading to shifts in temperature, precipitation, and other climate variables. In this study, we examined climate change on a fine scale within Connecticut, focusing on how key climate variables have changed over time. Using NOAA climate data (1920–2023), we analyzed trends in variables including temperature, precipitation, and snowfall. We focused on changes in spring climate variables. Spring climate is important because spring represents a critical time in the phenology of natural populations, as this is a period of germination and emergence for many species. The analysis revealed variation across the climate variables. Temperature in particular has increased significantly post-1970. These shifts in climate variables have implications for local biotic communities, affecting species distribution, phenology, and ecosystem dynamics. Understanding these changes is crucial for developing effective conservation and management strategies in response to challenges brought by climate change. URL for poster: **Click here.** Undergraduate
20	**Heloise and Abelard: Ethics, Agency, and The Modern Perspective** ***Sarah Marsh*** **Advisor:** *Katherine Allocco, History, Women's Studies* The letters exchanged between notable 12th century philosophers Heloise and Peter Abelard have long been considered hallmarks of romance in the medieval era. While their writings are the subject of many historical investigations, the relationship dynamic between student and teacher and their significant age gap has yet to be considered from a modern perspective. Through the meticulous analysis of primary sources and the use of modern resources pertaining to sexual violence and domestic abuse, this project aims to answer the question: given historical context, was the relationship between Heloise and Abelard ethical? Or, by historical and modern standards, was theirs a textbook case of abuse? The answer lies in a complex narrative, highlighting both key markers of abuse and a medieval woman's ability to make use of what little agency she was afforded. URL for poster: **Click here.** Undergraduate

21	**The Arthurian Effect: What Role did Arthurian Chivalry Play in the History of Britain's Monarchy?** ***Nicole Masci*** **Advisor:** *Katherine Allocco, History* The relationship between the chivalry found in Arthurian literature and the British monarchy has become its own historical myth. From his creation as a ruthless military leader to a chivalric hero, Arthur Pendragon continuously appears in romantic British history as a guiding light and moral beacon, active when Britain needs him most. Analyzing classic Arthurian literature, including Geoffrey of Monmouth, Chretien de Troyes, and Thomas Malory, I conclude that there is actually no correlation between the pseudo-mythical King Arthur and the history of Britain's monarchy. When given the opportunity to adopt "chivalry" in charged political and religious battles, real medieval kings did not grant mercy or conduct themselves honorably during key historical events such as the Crusades or the War of the Roses. Despite their love of Arthurian-themed tournaments and festivals, medieval kings consistently displayed more Galfridian versions of Arthur, preferring militarism over courtliness and reality over myth. URL for poster: **Click here.** Undergraduate
22	**Investigating the Microbial Diversity of Lake Lillinonah** ***Madison Meenan*** With Emily Zibelin **Advisor:** *Edwin Dr. Wong, Biology* Lake Lillinonah is the second largest lake in Connecticut and is a popular location for fishing and other recreational activities. The microbial community in lake sediment plays a key role in nutrient cycling and water quality. Identifying these microorganisms can help us identify factors contributing to Cyanobacteria algae blooms, which occur occasionally in the lake and pose a significant health risk. This knowledge is essential for developing strategies to restore the lake's ecosystem and improve safety for recreational use. The objective of this project is to examine the microbial communities residing throughout the sediment of Lake Lillinonah. Total genomic DNA was isolated from the sediment and the 16S rRNA gene was amplified, cloned, and sequenced to identify the bacterial species present. This information can be applied to assess the biodiversity and monitor the overall health of the lake ecosystem. URL for poster: **Click here.** Undergraduate

23	**The Effect of Male vs. Female Researchers on Stress Behaviors in Male Mice** ***Karla Mendez Vasquez*** With Matheus Oliveira Rosa and Alison O'Malley **Advisor:** *Dr. Joshua Cordeira, Biology* Mice are one of the most common types of animal model used in research. Literature indicates that biological sex of the investigator can impact mouse behavior, specifically behaviors that indicate stress. Our project extends this line of research by investigating stress responses in male mice handled by male or female student researchers. We hypothesized that mice would have higher indicators of stress when handled by or in the presence of male researchers. To test this hypothesis, male and female student researchers worked with the mice on alternating days. We evaluated levels of stress by measuring body temperature, fecal output, wheel running engagement, and food consumption. Results will be presented. It is important to analyze the impact of the investigators' biological sex on mouse behavior because it is a potentially confounding variable which can affect outcomes of future research. URL for poster: **Click here.** Undergraduate
24	**Metagenomics in University Drains: What Type of Bacteria are Hiding in Sinks?** ***Jose Montero*** **Advisor:** *Edwin Wong, Biology* This study investigates the presence of prokaryotic organisms in college restroom sink drains to identify bacterial species and assess microbial diversity. Samples were collected from two different restrooms on the university grounds using sterile swabs. The objective was to analyze the bacterial biofilms in these types of environments. DNA extraction and polymerase chain reaction (PCR) were performed to amplify bacterial DNA for sequencing and species identification. The results are expected to reveal a diverse array of bacterial species. Understanding the microbial diversity in shared public spaces like restrooms can provide insights into bacterial transmission in high-traffic areas which can present itself as an opportunity to reduce health risks and improve public hygiene. URL for poster: **Click here.** Undergraduate

25

Biofeedback Assisted Controlled Breathing to Reduce Cognitive Stress in College Students

Kylie Moody

Advisor: *Mary Murphy, Psychology*

College students experience significant daily stressors. Academic performance, a cognitive stressor, is one of their top concerns according to prior research. Effective coping tools are integral for both mental and physical health. Prior studies show controlled breathing improves both Heart Rate Variability (HRV), a physical indicator of stress, and perceptions of stress. The study employed a within subjects design to examine physiological stress and perception of stress among college students (n=77) across baseline, stressor, and controlled breathing intervention conditions. The primary outcome was a measure of cardiac coherence, a metric used by the HeartMath® biofeedback software calculated based on HRV. The secondary outcome was the student's perceived stress score, measured by a visual analog scale (VAS) on a scale of 0-100. The results show that a simple 2 minute-controlled breathing technique was effective in decreasing both physiological stress (as measured by HRV) and perceptions of stress among college students.

URL for poster:
Click here.

Undergraduate

26	**Evaluating the Use of 360° High-Definition Video Technology to Improve Counseling Simulations in Addiction Studies Training** ***Victoria Muscatello*** With Lynnae Snyder **Advisor:** *Mary Murphy, Psychology* This study explores the use of 360° high-definition video technology as an innovative teaching tool to enhance counseling simulation practice within the WCSU M.S. in Addiction Studies curriculum. Seven students enrolled in PSY 584 (Co-Occurring Disorders) will participate in two recorded simulated therapy sessions. Students will review their recordings enhanced by highly immersive, detailed 360° playback with zoom features providing unprecedented levels of feedback on roleplay performance. Recordings will facilitate professor feedback of counseling skills; level of engagement, empathy, and interpersonal communication skills such as eye contact and body language. Outcomes will measure student perspectives of changes in confidence in their counseling skills (measured by the Counselor Activity Self-Efficacy Scales questionnaire), as well as overall satisfaction with this modality as a teaching tool, and suggestions for future improvements. Findings from this study will be used to further develop role play simulation assignments that enhance student learning and counselor skill development. URL for poster: **Click here.** Undergraduate
27	**A Comparative Analysis of Cat Gut Microbiomes** ***Laura Nevins*** With Hailie D. Kopp **Advisor:** *Edwin Wong, Biology* We investigated whether fruits and vegetables are crucial parts of the diet of house cats, *Felis catus*, through deconstructing components of the gut microbiota from two felines. The first feline was fed a typical diet of wet food and dry kibble. The second feline was fed a combination of wet food and dry kibble supplemented with fruits and vegetables in the whole form as well as pureed. As there is little information about the gut microbiota in non-laboratory felines, we sought to both explore the components of their gut microbiota using DNA sequencing of the bacterial 16S ribosomal RNA gene, and answer the question of whether fruits and vegetables are important in the diversity and overall health of the feline gut. URL for poster: **Click here.** Undergraduate

28	**Dumpster Diving for DNA: Analysis of Bacterial Communities in Restaurant and Communal Dumpsters** ***Judy Nguyen*** With Matthew Martins, Stephanie Jarrin **Advisor:** *Edwin Wong, Biology* Although dumpsters probably support a variety of bacterial species, little is known regarding biodiversity and ecological importance. To clarify the diversity and possible ramifications for microbial ecology and public health, this study examines the microbial makeup of restaurant and communal dumpsters. Restaurant dumpster samples were obtained from Old Oak Restaurant, while communal dumpster samples were obtained from Windsor Gardens Community. Samples were processed and examined using methods such as PCR, 16S rDNA sequencing and BLAST analysis. The insights derived from this study provide important implications for managing public health and ecosystem functioning by illuminating the connections that shape microbial populations in restaurant and communal dumpsters. URL for poster: **Click here.** Undergraduate
29	**Immigration Policies and Their Impact on the Immigration Experience** ***Mariafernanda Ortega*** **Advisor:** *Robert Whittemore, Social Sciences - Anthropology* This study investigates how immigration policies can impact the lives of immigrants and thus their immigrant experience in the United States. To do this, I focused on Hispanic immigrants working presumed "low-skill jobs" and semi-structured interviews were conducted with 15 participants. My analysis will hopefully show how immigration policies negatively affect immigrants, especially in work-areas, by limiting opportunities for success in the U.S. work force. URL for poster: **Click here.** Undergraduate

30	**Influence of Warming on Gill Structure of *Fundulus heteroclitus*** ***Steven Pancurak*** **Advisor:** *Michelle Monette, Biology* In warming waters from climate change, fish have increased difficulty in obtaining oxygen due to reduction in oxygen solubility coupled with an increase in metabolic demand. Many fishes can utilize gill remodeling to increase oxygen uptake by reducing interlamellar cell masses (ILCM), cellular barriers that impact diffusion distance. *Fundulus heteroclitus* is a estuarine fish known for its incredible thermal tolerance, and this model organism can provide insight regarding the mechanisms used to promote oxygen uptake at the gill under increaesed temperature. ILCMs were measured at 400x magnification of fish (n=23) from a study conducted where *Fundulus* showed improved thermal tolerance in response to both constant (28°C) and fluctuating (20-28°C, shifting every two days) warm temperature relative to a control (20°C) group. Results did not show a reduction in ILCM as hypothesized, suggesting that *Fundulus* may be using mechanisms other than gill remodelling to improve oxygen uptake in warm waters. URL for poster: **Click here.** Undergraduate
31	**Risks of Being a Woman: Pre- and Post-Immigrant Experience** ***Joanna Pardo*** **Advisor:** *Robert Whittemore, Social Sciences: Anthropology* My research will analyze the risk factors or dangerous situations, if any, that women from Central and South America might have endured during their migration journey to the United States. Participants will be recruited primarily from the Mexican Cultural Center of Danbury CT. There will be approximately 25 participants and will be asked to participant in a semi-structured interview where they will have the chance to not only define what being at risk or in danger means to them but also tell their story. Qualitative research will also be used to get more background on the reasonings as to why many leave their home country, as well as, discussing some dangerous situations that women in the U.S. may face. URL for poster: **Click here.** Undergraduate

32 (withdrawn)	**The Evolution of Arthurian Legend in Visual Arts: A Cross-Period Analysis from Medieval to Modern Interpretations** ***Amy Petrucci*** **Advisor:** *Katherine Allocco, Department of History, Philosophy, and World Perspectives* This study examines the transformation of Arthurian legend representations in visual arts across distinct historical periods, from medieval manuscripts to contemporary interpretations. Through analysis of selected works spanning from the 12th to 21st centuries, this research demonstrates how artistic interpretations of Arthurian themes reflect changing cultural values and artistic conventions while maintaining core narrative elements. Special attention is given to the evolution of iconic scenes such as the Lady of Shalott and the Quest for the Holy Grail across different artistic movements. URL for poster: **Click here.** Graduate
33	**Depthwise Separable Convolutions in Dense Convolutional Networks** ***Adam Psenicnik*** **Advisor:** *Stavros Christofi, Mathematics* Convolutional neural networks (CNN's) are a commonly applied neural network architecture for a multitude of varied tasks. Densely connected convolutional blocks (dense blocks) and depth wise separable convolutions are two methods to reduce the size of the network without decreasing performance. Here we combine the two methods and test this hybrid method on an image classification task. URL for poster: **Click here.** Undergraduate

34	**The Impact of Urban Farming Education on Food and Nutrition Security** ***Sara Risko*** **Advisor:** *Emily Stevens, Department of Health Promotion Studies* Despite its notable wealth as a nation, rates of food insecure households across the United States continue to climb, reaching 18 million in a 2023 report. The report sites an increase of 4.2 million from the year 2020—a particularly startling increase considering the socio-economic struggles induced by the COVID-19 pandemic (Rabbitt, et al., 2024). In the state of Connecticut alone, food insecurity impacts up to 17% of the state's population with numbers rising (Duborg, 2024). While many current public health interventions aim to uncover the determinants of and to dismantle food and nutrition insecurity, our current approaches are clearly falling short. The field of public health must widen its approaches to better support interdisciplinary action. This research aims to investigate the potential of urban farming education as an intervention to support food and nutrition access, while further supporting self-efficacy, autonomy, and opportunity for at-risk populations. URL for poster: **Click here.** Undergraduate

35	**Pathways to AP Mathematics in an Urban School District** ***Rachel Saunders*** With Marcia A. B. Delcourt, PhD; Kristy L. Zaleta, EdD; Laura Mead, EdD **Advisor:** *Marcia Delcourt, Education* This study was used to compare the results of secondary school students who followed one of two pathways to enrollment in Advanced Placement (AP) mathematics courses. Students completed Algebra 1 in either the eighth grade (pathway 1) or ninth grade (pathway 2). The study took place in an urban district that uses an open enrollment process for entry to AP courses. Three types of mathematics achievement scores were collected from 131 students enrolled in AP mathematics courses. A chi-square test revealed that students who completed Algebra 1 in the eighth grade had significantly higher AP scores than their peers. A 2x2 MANOVA provided comparative information for students based on gender and pathway type with respect to two standardized mathematics assessments. Students who completed Algebra 1 in the eighth grade had significantly higher scores on both assessments as compared to their peers who completed Algebra 1 in the ninth grade. URL for poster: **Click here.** Graduate-Doctoral

0	**How do Stadium Renovations Impact Ticket Sales and Attendance for Sports Events?** ***Soumya Sikder*** **Advisor:** *Rotua Lumbantobing, Economics* What I am exploring is the issue of how do stadium renovations impact ticket sales and attendance for sports events. Sports stadiums serve as central hubs for community engagement, fan experiences, and economic growth within the sports industry. With the increasing competitiveness of sports franchises and teams, stadium owners are continuously looking for ways to enhance fan engagement, increase revenue, and improve team performance. One major avenue to achieve these goals is through stadium renovations. Renovations often involve upgrading seating arrangements, improving infrastructure, enhancing digital experiences, and adding premium amenities such as luxury suites and food courts. These enhancements aim to provide a better fan experience, which, in turn, could potentially increase ticket sales and attendance. The relationship between stadium quality and fan attendance has long been of interest to sports economists, marketers, and management. URL for poster: **Click here.** Undergraduate
36	**The Ethics of Misogyny: How Men Exploit and Exclude Women** ***Nakita Singh*** **Advisor:** *Brian Clements, Director of Honors Program* This project will look at several disciplines and areas of life, observing how men have exploited women and profited off of them at their expense. From American Slavery to the 2025 Trump Administration, this research will highlight how women have been preyed on, excluded, and erased in history. Despite living in the 21st Century, life has not improved much for women. The methods of control and erasure are not as cut and dry, rather they are built into our system through laws and social behavior of the men around us. The patterns still exist, thus the goal of this research is to shed light on those patterns and to highlight how interwoven misogyny is in current society. URL for poster: **Click here.** Undergraduate

37	**Phenology of Visitation in a Bee Pollinated Flower in the Northeast** ***Drew Smith*** With Dr. Calros Santibanez-Lopez, Dr. Dorothy Christopher **Advisor:** *Dorothy Christopher, Department of Biology* Phenology is important in the ecology of both plants and insects because it controls what species they may encounter while active. As some animals are more effective pollinators than others, maintaining a record of pollinator phenology helps to identify ecologically important species and build a framework in which future changes to phenology can be studied. Between July 7 and August 12, 2021 observed a cohort of *I.purpurea* flowers from 7:00 to 20:00 and identified all pollinators that interacted with them. Syrphid flies were common for the first two weeks, while the bumblebee *B.impatiens* was abundant for the second, fourth, and fifth week of data collection. Halictid bees were also abundant, but were statistically less abundant than other pollinators early in the morning. These results correlate with observations made in other temperate ecosystems, suggesting the forests in Connecticut have a similar phenological cycle. URL for poster: **Click here.** Graduate

0	**Applying Progress to Pedagogy: Black Composers, Social Reform, and Its Implications for Urban Music Education** ***Alex Starr*** **Advisor:** *Marjorie Callaghan, Music* Undergraduate music education students are expected to have a well-rounded knowledge of Western music history from the Middle Ages to the modern day. Like many students before me, I noticed a pattern among notable composers presented in our curriculum. Black classical composers were not seen regularly until the 19th and 20th centuries, primarily in the United States (Music by Black Composers). Through my research, I sought to explore how the rise of Black classical composers reflects the importance of incorporating culture into music, uplifting marginalized voices, and what the current state of music education can learn from such social movements. Although a Bohemian white man, composer Antonín Dvořák was integral to increased African-American representation in the symphonic repertoire. This is seen in the success of Florence Price, the first recognized Black female composer. From these two, current music educators grasp the positive outcomes of immersion, allyship, and cultural appreciation. URL for poster: **Click here.** Undergraduate

38	**Understanding Cyanobacterial Bloom Dynamics in Bantam Lake (2018-2024) by Analyzing Water Quality and Climate Variables** ***Nasrin Sultana*** With Dr. Theodora Pinou (Professor of Biology & Chair of Biology Programs); Laurence Marsicano (Adjunct Professor of IBD program); Dr. Dorothy Christopher (Professor of Biology); Anthony Praino (Former IBM Research Scientist) **Advisor:** *Laurence Marsicano, Integrative Biological Diversity* Cyanobacterial blooms are a rising concern in freshwater lakes, often caused by a mix of environmental and weather-related factors. However, current research often lacks a comprehensive approach that integrates physical, chemical, biological, and meteorological data simultaneously. This study explores how water quality and meteorological conditions influence harmful algal bloom formation in Bantam Lake, using data from 2018 to 2024. We analyzed key water quality parameters including temperature, pH, Secchi depth, TP, TN, chlorophyll-a, and specific conductivity alongside weather data such as air temperature, precipitation, and wind speed. Principal Component Analysis (PCA) showed that elevated nutrient levels, higher temperatures, and biological indicators like chlorophyll-a play a significant role in bloom development. Our preliminary findings suggest that both water quality and weather patterns are closely linked and together drive cyanobacterial bloom events. This shows the need for ongoing monitoring and joint management to prevent harmful blooms in Bantam Lake and freshwater systems. URL for poster: **Click here.** Graduate

39	**Investigating Apoptosis Pathways in *Plasmodium falciparum*: Purification and Characterization of Cytochrome C** ***Maricela Turcios*** **Advisor:** *Helena Judith Prieto, Chemistry* Malaria continues to be a neglected disease in remote regions of the world, caused by the protozoan parasite *Plasmodium falciparum* (Pf). While apoptosis is a well-known regulatory mechanism in multicellular organisms, arising evidence suggests that unicellular pathogens, including Pf, may exhibit similar pathways. Proteomic analysis of chloroquine-treated Pf samples points towards the involvement of a protease-triggered apoptosis-like pathway which is potentially regulated by cytochrome C. Previous work has focused on expressing and purifying Pf cytochrome C, however low yields from affinity chromatography have hindered downstream assays. The research focuses on optimizing the purification methods by using a maltose-binding column to obtain a workable yield of cytochrome C. Once purified, it's involvement in apoptosis will be assessed through a protease activity assay in yeast cell lysate. By elucidating apoptotic mechanisms in *P. falciparum*, this study may provide insights into novel therapeutic targets for malaria. URL for poster: **Click here.** Graduate

40	**Students in Community Outreach: Applied Relevance of a Sustainability Walk Audit** ***Vitoria Vieira*** **Advisor:** *Robert Whittemore, Social Sciences* This thesis examines the experiential learning process of students in the "Public Anthropology and Sociology: Research for Social Change" course at Western Connecticut State University (WCSU), focusing on students designing and conducting a sustainability walk audit. In collaboration with Sustainable CT, the project allowed students to engage with the community in assessing sustainability practices in downtown Danbury, CT. Using qualitative methods, including pre- and post-audit surveys, in-depth interviews, and classroom observations, this study explores how students experience the project, their perceptions of community engagement, and their roles in the project. The research highlights student perspectives on, as well as benefits and challenges of, integrating community-based research into higher education, particularly within applied anthropology and social change contexts. The findings contribute to the literature on experiential learning, emphasizing how such projects foster environmental awareness, activism, and student engagement, and provide insights into future educational practices. URL for poster: **Click here.** Undergraduate

41

Menstrual Health on a College Campus

Michelle Young

Advisor: *Eileen Campbell, Nursing*

Abstract Problem: Menstrual poverty refers to the vulnerability faced by menstruating individuals due to inadequate access to menstrual supplies and/or education. This phenomenon occurs globally and suggests a systemic neglect of issues surrounding menstruation. In the United States, some states have legislation that mandates the provision of free menstrual products in public schools and universities. However, there is still a need to assess gaps in practical menstrual education. One Connecticut public university has complied with the recent legislation to provide free menstrual products for students and is now evaluating the implementation program. Research Question: This project was guided by the intent to improve the program, make judgments regarding the social value of the program, and document the strengths and weaknesses of how the program has been implemented. The results of the program evaluation will be used to determine how the Health Services office on campus can better support people who menstruate. Methods: After obtaining IRB approval from the university, and informed consent from participants, an online survey was conducted. Results: This survey's results highlight variability in menstrual health needs among students at this university. These variations are correlated with demographic factors such as racial identity, academic standing, and residential status. The findings indicate that students face challenges with menstrual product access and awareness, particularly among FSS and on-campus residents, who report higher financial barriers and product availability concerns. Additionally, the study uncovers racial disparities, with those identifying as "white" expressing fewer concerns about obtaining menstrual products compared to other racial groups. Implications for nursing: These insights underscore the necessity for targeted support and further research to address the diverse needs of the student population effectively. Keywords: Menstrual Poverty, Period Poverty, Menstrual Education, College

URL for poster:
Click here.

Graduate-doctoral

42	**Shifts in Flowering Date of Spring Wildflowers Across Connecticut** ***Emily Zibelin*** With Lindsay Kirkness **Advisor:** *Dorothy Christopher, Biology* Climate change is expected to affect the phenology of many natural populations. Early spring ephemeral flowers are among the first to bloom in the season and last only a short period. They bloom while it is still relatively cold, making them particularly sensitive to changes in climate conditions. We investigated whether native spring ephemeral species experienced a shift in flowering phenology over the past 100 years across Connecticut. The online database Consortium of Northeastern Herbaria (CNH) provided the herbarium records for the 10 flower species included in the study. The flowering date for every specimen with observable flowering structures was recorded. Connecticut was further split into 4 sub-regions to get a novel, fine-scale look at phenology shifts. We found that the average flowering date is shifting forward, and that these species are flowering earlier than in the past. URL for poster: **Click here.** Undergraduate

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