12th Annual
PROVOST’S HONORS SYMPOSIUM
for Research, Scholarship, and Creative Activity
PROGRAM
APRIL 29TH, 2022
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WELCOME

WELCOME TO THE 12TH ANNUAL PROVOST’S HONORS SYMPOSIUM FOR RESEARCH, SCHOLARSHIP, AND CREATIVE ACTIVITY

Thanks to the generous support of Provost Patricia Kleine and the Office of Research and Sponsored Programs, we are thrilled to return Provost’s Honors Symposium to a face-to-face format this year. In founding and organizing this annual symposium, the University Honors Program strives to meet its goal of supporting students in activities that lead to research, discovery, and innovation.

PHS 2022 showcases the research and creative projects of 77 students representing more than two dozen disciplines. I invite you to join me in attending their presentations and engaging in discussion about this rich and interesting work.

Participants in the Provost’s Honors Symposium are nominated each year by their UW-Eau Claire faculty mentors. Finalists are selected by the University Honors Council, a committee that includes University Honors students and faculty representatives from each of the UW-Eau Claire colleges:

- Bob Bell, College of Arts and Sciences, Instructional Academic Staff representative
- April Bleske-Rechek, College of Arts and Sciences
- Jim Boulter, College of Arts and Sciences
- Mary Canales, College of Nursing and Health Sciences
- Sheril Gilberstadt, College of Business
- Corey Hannah, College of Education and Human Sciences
- Hans Kishel, Mcintyre Library, Faculty Member-at-large
- Annathea Brenneman, Student-at-large
- Anna Fregien, Honors Student Steering Committee
- Audrey Westerberg, Student, Honors LLC

Thanks are also due to the honors students who have volunteered to serve as session moderators—and thank you for supporting the highly accomplished students and faculty whose collaborative work is featured at this event.

Finally, please join us and leaders from Academic Affairs at a reception to honor these exceptional students at 5:30 pm in the Ojibwe Ballroom.

Dr. Heather Fielding
Director, University Honors Program
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Reception with appetizers: 5:30 p.m., Ojibwe Ballroom

*Note on the program: to find a specific presenter or faculty mentor, simply use the search function of your browser.
# SCHEDULE AT A GLANCE

## SESSION I: 1:00 – 2:00 P.M.

### CENTENNIAL ROOM

1. Equity, Diversity and Exclusivity in Housing and Transportation in Eau Claire, Wisconsin: Results from a Community Needs Assessment
2. What Do You Do to Reduce the Effects of Climate Change? A Qualitative Investigation of Individual and Societal Actions

### MENOMINEE ROOM

3. Performance Analysis of Francis Poulenc’s Flute Sonata
4. Neuroprocessing of Music: Clinical Applications
5. BFA Senior Exhibition

### HO-CHUNK ROOM

6. Investigating The Predictive Function of The Detection and Analysis of COVID-19 MRNA in Wastewater
7. Understanding The Lake Breeze Influence on Elevated Ozone at the Lake Michigan Shoreline
8. Modeling Diffusion in Accreting White Dwarfs

### CHANCELLORS ROOM

9. Nurse’s Role in Breast Cancer Awareness and Screening
10. Frontline Health Care Workers’ Experience of COVID-19: A Documentary Project

## SESSION II: 2:10 – 3:10 P.M.

### CENTENNIAL ROOM

11. Creating and Characterizing Zebrafish Knockout Lines for Studying Methylmercury Metabolism
12. Impact of Low Dose Ethanol on Stimulator Movement in Aged Rats: Comparison to Younger Animals
13. Do Atropine and Diphenhydramine, Two Anti-Cholinergic Drugs, Interact to Affect Daphnia Magna Heart Rate?

### MENOMINEE ROOM

15. Examining Chinese and American Climate Change Views Using 2015, 2017 and 2020 Survey Data (Part II)

### HO-CHUNK ROOM

17. Named Entity Recognition in Unstructured Medical Text Document
18. Investigation into Brain Chemistry and The Chemical Hardness of Antidepressants

CHANCELLORS ROOM

19. Preservice Teachers’ Perceptions of Children with Complex Communication Given a Parent-Reported Narrative
20. How Adverse Childhood Experiences Affect the Mental Health and Academic Performance of College Students
21. A Comparison of Creativity in the World Language Classroom Before and During COVID-19

SESSION III: 3:20 – 4:20 P.M.

CENTENNIAL ROOM

23. Eulogy or Obloquy? An Exploration of Political and Public Affairs Deaths as Reported by the Major News Media
24. War on Terror and International Criminal Law

MENOMINEE ROOM

25. Measurement of Air Exchange Rate to Reduce COVID-19 Transmission
26. The Supplemental Nutrition Assistance Program-Market Match Incentive Program at the Eau Claire Farmers’ Market: Comparing Utilization Before and During the COVID Pandemic Using Data From
27. Using Survey Data From 2021 to Explore Barriers Limiting Usage of the Supplemental Nutrition Assistance Program-Market Match Incentive Program at the Eau Claire Farmers’ Market

HO-CHUNK ROOM

28. Spear and Shield: Coding to Thwart Adversarial Aggression

CHANCELLORS ROOM

30. It's a Wrap: Exploring Environmental Influences that Impact Youth Access to Commercial Tobacco Products
31. Impact of Social Support on Trauma and Self-Injury

SESSION IV: 4:30 – 5:30 P.M.

CENTENNIAL ROOM

32. Forest Folklore in German Nationalism and Naturschutz
33. Commanding Oneself in the Information Age
34. Holocaust Archaeology: GPR Subsurface Imaging of the Mila 18 Memorial in Warsaw, Poland

MENOMINEE ROOM

35. Quantitative Analysis of Interpreter Service Mode Costs in Northwestern Wisconsin Pre- and Peri-COVID-19
36. Burnout at Work: A Survey of Mayo Healthcare Workers and UWEC Faculty and Instructional Staff
ABSTRACTS

CENTENNIAL ROOM

1. EQUITY, DIVERSITY AND EXCLUSIVITY IN HOUSING AND TRANSPORTATION IN EAU CLAIREF, WISCONSIN: RESULTS FROM A COMMUNITY NEEDS ASSESSMENT
   Presenter: Emily Skoog
   Faculty nominator/mentor: Pamela Forman, Sociology; Ellen Mahaffy, Communication & Journalism

The City of Eau Claire, Wisconsin strives to support the community through investments in infrastructure and services, and fiscal responsibility. To understand the challenges that Eau Claire, a city that is predominantly white and has a poverty rate of 16.6%, is facing during a global pandemic, we conducted a Community Needs Assessment (CNA). Our interviews with 20 leaders of nonprofit organizations across various sectors (equity, diversity and inclusivity, environment, social justice, health, food security, poverty intervention, housing, transportation, and youth development) revealed economic and racial disparities. This presentation will focus on equity, diversity, and exclusivity within two sectors: housing and transportation.

2. WHAT DO YOU DO TO REDUCE THE EFFECTS OF CLIMATE CHANGE? A QUALITATIVE INVESTIGATION OF INDIVIDUAL AND SOCIETAL ACTIONS
   Presenters: Ben Worner, Emma Dimick
   Faculty nominator/mentor: Kristine Knutson, Communication & Journalism; Jim Boulter, Public Health & Environmental Studies

Climate change is one of the most pressing existential threats facing our world. A plethora of research exists that demonstrates that climate change is real and that it is human caused. To this growing body of literature, this study contributes knowledge about the actions that individuals in United States take to combat climate change, as well as their expectations for how society ought to address climate change. Using thematic analysis techniques (Norwell, Norris, White & Moules, 2017), participant responses to two open ended questions were analyzed (i.e., What actions have you or your family taken to reduce your personal contribution to climate change/global warming? and What societal changes do you think are most important to significantly reduce the effects of climate change/global warming?). Findings indicate that participants act and believe society ought to act in ways that coincide with cultural narratives for combating climate change (e.g., recycling, green purchasing, reducing consumption, and making transportation changes). The efficacy of these actions is discussed and suggestions for improving climate communication are offered.
3. PERFORMANCE ANALYSIS OF FRANCIS POULENÇ’S FLUTE SONATA

Presenters: Charlie Grady
Faculty nominator/mentor: Gary Don, Music & Theatre Arts

Many performers choose to go beyond the information in the musical score by personalizing the tempo and dynamics of a piece. For this research, I plan to examine three different performances of Francis Poulenc’s Flute Sonata (the premiere performance took place in 1957). I will compare the three performances, looking for contrasts in dynamics, tempo, and expressivity. I intend to show how performers can create multiple versions of the same work.

4. NEUROPROCESSING OF MUSIC: CLINICAL APPLICATIONS

Presenter: Megan Gawlitta
Faculty nominator/mentor: Lee Rasar, Music & Theatre Arts

This project will examine the roles of listening in brain processing based on neuroanatomy and neurophysiology and the biochemistry involved in music listening. Clinical applications for using music listening for health range across ages and populations. Applications shared will include: infants in the NICU who increase oxygen saturation through music listening and learn suck and swallow reflexes through the use of pacifier-activated lullabies; patients with stress who decrease cortisol through music listening when using favorite music; patients with dementia who calm to music with special memories and meaning from their past; patients in physical pain who are able to relax their muscles through listening to music; patients with addictions who learn to change their music preferences to avoid triggers for their addictions; patients who have trauma issues who find peace, comfort, and hope for the future through music listening; patients who are neurodiverse whose brains are organized by rhythm; patients with Parkinson’s Disease who improve gait training through rhythmic cueing; and patients with anger issues who learn to redirect and calm through musical mood induction.

5. BFA SENIOR EXHIBITION

Presenters: Kala Rehberger
Faculty nominator/mentor: Cedar Marie, Art & Design

Kala Rehberger is an art and psychology double major who has created a body of artwork that explores the complexities of being human. Her large-scale piece, The Head Doesn’t Fall, invites the viewer to step into a sculptural diary, a culmination of small clay tiles that work together reminiscent of a quilt. This sculpture shares complex stories of pain, power, heartbreak, acceptance, and growth represented through imagery, text, and color. Personal symbols conceal vulnerabilities while simultaneously offering the viewer the opportunity to connect to stories with universal themes. As a whole, the quilt acts as Rehberger’s personal memoir open for the public to read and experience. In her most recent project, she interviewed people of all ages, both strangers and people she knows, about their lived experiences. She is now translating their stories into a series of visual stories in clay that work together in a similar quilt-like fashion. The sculptural patchwork is a shared recollection of life-changing events, influential moments, and lessons learned.
Faculty nominator/mentors: Crispin Pierce, Public Health & Environmental Studies

The growing number of communicable disease outbreaks in recent decades has increased the necessity to develop innovative tools to predict and lessen their impact. A potential tool is the correlation between viral load in wastewater and the number of cases in an outbreak measured at the time of sampling. Recent research by various institutions across the US, including state agencies, universities, and private laboratories, has indicated that viral loads in wastewater during the peak of the covid-19 pandemic are strongly and positively correlated with affected population caseloads. We collected grab and 24-hour composite wastewater samples from three campus dormitories and a children's daycare center. COVID-19-specific RNA markers measured by the Wisconsin State Laboratory of Hygiene were compared to number and date of infections from our sampled populations. While we did find a correlation between increased number of COVID-19 infections and increased viral loads, we did not find a trend of viral loads spikes preceding COVID-19 infections, consistent with state and national results. Wastewater testing provided a powerful, noninvasive confirmatory tool in the verification of a population’s health.

7. UNDERSTANDING THE LAKE BREEZE INFLUENCE ON ELEVATED OZONE AT THE LAKE MICHIGAN SHORELINE

Presenters: Ben Kies, Joe Tirado, and Aidan Voon
Faculty nominator/mentors: Patricia Cleary, Chemistry & Biochemistry

Elevated ozone has been of concern at Lake Michigan shoreline locations for many decades. The lake breeze is a key circulation pattern which brings overwater air masses onshore, where inverted air is an ideal reaction chamber for photochemical ozone production. The lower atmosphere has been investigated using uncrewed aerial systems (UAS) to track pollutant transport during lake breeze events during several field campaigns (CHEESEHEAD19, WiscoDISCO-20 and WiscoDISCO-21). From those studies, the vertical profiles of lake breeze impacted air show a complex relationship with ozone, where an internal boundary layer is formed and the highest observed ozone appears within the lowest 100 m altitude, typically above that internal boundary layer.

8. MODELING DIFFUSION IN ACCRETING WHITE DWARFS

Presenter: Huston Wilhite
Faculty nominator/mentor: William Wolf, Physics & Astronomy

White dwarf stars that gain, or accrete, matter from companion stars are the progenitors of novae and type Ia supernovae, which are among the most luminous transients in the universe. In particular, type Ia supernovae contribute greatly to the processing of hydrogen and helium into all the elements of the periodic table on a galactic scale. How and when an accreting white dwarf can give rise to a type Ia supernova explosion depends on how effectively it can retain its matter through the prelude of smaller nova explosions. Diffusion of accreted material deep into the white dwarf can hinder this mass retention, so in this project, we model accreting white dwarfs with elemental diffusion. We find that for low accretion rates, white dwarfs lose more mass in a nova cycle than they gain, indicating that these systems are unlikely to lead to type Ia supernovae.

CHANCELLORS ROOM

9. NURSE’S ROLE IN BREAST CANCER AWARENESS AND SCREENING

Presenter: Kaitlyn Moore
Faculty nominator/mentor: Dalete Mota, Nursing; Theresa Dachel, Nursing

This cross-sectional study, via an online survey, investigated breast cancer (BC) awareness and screening behaviors at a Midwestern university during Fall 2021. All students, staff, and faculty were invited to participate. A total of 1245 initiated the survey, the majority being undergraduate students (n=878, 70.5%). Approximately 35% of the respondents reported never having received information about BC. A third shared that they know someone who has been diagnosed with BC. Over 70% know that aging and family predisposition are risk factors for BC. Risk
Factors related to reproductive health were acknowledged by 20% of the respondents. Knowledge and attitudes regarding BC screening varied significantly; about half reported clinical examination of breasts as a screening method to be performed yearly, but 75% have not had this screening method themselves. Although the age of the participants was young, many didn’t know when and how frequent mammograms were recommended for BC screening. This university-wide survey suggests the need for more information about risk factors and BC screening methods. The results help nursing professionals develop evidence-based health promotion activities.

10. FRONTLINE HEALTH CARE WORKERS’ EXPERIENCE OF COVID-19: A DOCUMENTARY PROJECT

Presenter: Ellie Decker
Faculty nominator/mentor: Heather Fielding, Honors Program

This documentary project investigates the frontline experience of the COVID-19 pandemic. Through interviews with nurses and doctors as well as personal photos and reflections, the video works to capture the emotions of life during the pandemic from its start through April/May 2021, when the documentary was completed. The topics discussed in the documentary include initial reactions to the news of a global pandemic, national responses, healthcare facility responses, vaccinations, personal experiences and emotions, and key lessons learned that will be carried into the future.

11. CREATING AND CHARACTERIZING ZEBRAFISH KNOCKOUT LINES FOR STUDYING METHYLmercury METABOLISM

Presenters: Ashley Lutzke, Celia Dickey
Faculty nominator/mentors: Bradley Carter, Biology

Methylmercury (MeHg) is a common environmental pollutant and a known hazard to prenatal health; the primary exposure to MeHg for most of the U.S. population is through consumption of contaminated fish, including the Great Lakes region. There is natural genetic variation in the human population among genes that help clear MeHg from the body, and some individuals may be more sensitive to MeHg toxicity based on which gene versions they have (genotype). This research seeks to determine how different versions of these human genes affect MeHg toxicity during early development using zebrafish. We are using gene editing tools to inactivate the fish versions of these genes and add in the human versions, allowing us to test how different gene versions affect MeHg toxicity in the context of the developing embryo.

12. IMPACT OF LOW DOSE ETHANOL ON STIMULATOR MOVEMENT IN AGED RATS: COMPARISON TO YOUNGER ANIMALS

Presenter: Gillian Rossmann
Faculty nominator/mentor: Douglas Matthews, Psychology

Wisconsin leads the nation in death by falling among older adults and recently it has been hypothesized that this risk is partially due to alcohol intake in the aged population. Aged animals are significantly more impaired by ethanol than younger animals. For example, acute ethanol impairs motor coordination to a greater extent in aged animals compared to younger animals. Recently, we have collected data demonstrating that the stimulatory effects of ethanol are greater in aged animals compared to younger animals. These data suggest a potential explanation for the increased death rate in older Wisconsinites due to falling. Namely, alcohol use increases movement in the older population while decreasing motor coordination resulting in falling.
13. DO ATROPINE AND DIPHENHYDRAMINE, TWO ANTI-CHOLINERGIC DRUGS, INTERACT TO AFFECT DAPHNIA MAGNA HEART RATE?

Presenter: Savanna Bonlender
Faculty nominator/mentor: Kelly Wonder, McNair Program, Tali Lee, Biology

Daphnia magna are a type of water flea that are commonly utilized to test pharmacological and physiological responses. In this project, two common pharmaceuticals, atropine and diphenhydramine, are being utilized to test the effects these drugs have on the Daphnia heart rate. The studies that have investigated the effects of atropine on Daphnia heart rate have been contradictory, and the effects of diphenhydramine on the Daphnia heart are not well-known. According to Drugs.com, it is considered a hazard to take more than one anti-cholinergic drug concurrently. Given this, heart rate, in beats per minute, will be monitored while exposing Daphnia to increasing concentrations of atropine and diphenhydramine independently and when administered together. The goals of this study include: to discover the effects these two drugs have on the Daphnia heart, to decipher whether an interaction occurs between the drugs when administered together, and to ultimately discover whether the Daphnia are prime subjects for anticholinergic drug testing.


Presenter: Jesse Castellanos-Martinez, Philip Long, Lilli Roubinek, Megan Schiller
Faculty nominator/mentor: Eric Jamelske, Economics; Jim Boulter, Public Health & Environmental Studies

China (CH) and the United States (US) are key players in international climate change (CC) negotiations, and thus we conducted surveys in 2015 (N=7,556), 2017 (N=7,415) and 2020 (N=2,600) to better understand what Chinese and American citizens think about this very important issue. Selected survey questions were used to calculate a CC index (CCI) with higher values indicating more alignment with the scientific realities of CC. After comparing the CCI across CH and the US, we use it as an explanatory variable to investigate correlations between CC views and other outcome variables of interest continuing to provide comparisons between countries. We are looking for new stories to tell from these data, and thus have not finalized exactly what we will be presenting. Possible topics include support for the Paris Agreement, willingness to pay for CC policy action and exploring themes in open-ended comments. Throughout both presentations, attention will be given to the degree of variation in CC views in each country as well as the existence of a partisan political divide regarding CC among Americans.

15. EXAMINING CHINESE AND AMERICAN CLIMATE CHANGE VIEWS USING 2015, 2017 AND 2020 SURVEY DATA - PART II

Presenters: Erica Kladar, Emily Krahn, Micah Link, Hannah Raddenbach
Faculty nominator/mentor: Eric Jamelske, Economics; Jim Boulter, Public Health & Environmental Studies

China (CH) and the United States (US) are key players in international climate change (CC) negotiations, and thus we conducted surveys in 2015 (N=7,556), 2017 (N=7,415) and 2020 (N=2,600) to better understand what Chinese and American citizens think about this very important issue. Selected survey questions were used to calculate a CC index (CCI) with higher values indicating more alignment with the scientific realities of CC. After comparing the CCI across CH and the US, we use it as an explanatory variable to investigate correlations between CC views and other outcome variables of interest continuing to provide comparisons between countries. We are looking for new stories to tell from these data, and thus have not finalized exactly what we will be presenting.
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**16. EXPLORING THE CHEMISTRY OF COVID-19 SEVERITY USING HIGH-PERFORMANCE COMPUTING**

**Presenter:** Carl Fossum  
**Faculty nominator/mentor:** Sudeep Bhattacharyay, Chemistry & Biochemistry; Sanchita Hati, Chemistry & Biochemistry

The interaction between the receptor-binding domain of the SARS-CoV-2 spike protein and the human cell surface receptor was studied. Using Blugold high-performance computer-aided molecular simulations the study attempted to probe the role of oxidation and reduction on binding. The results demonstrate that oxidative stress creates a structure of the SARS-CoV-2 spike protein that binds tighter compared to the state observed in the reducing environment.

**17. NAMED ENTITY RECOGNITION IN UNSTRUCTURED MEDICAL TEXT DOCUMENTS**

**Presenter:** Cole Pearson  
**Faculty nominator/mentor:** Jim Seliya, Computer Science

Physicians provide expert opinion to legal courts on the medical state of patients, including determining if a patient is likely to have permanent or non-permanent injuries or ailments. An independent medical examination (IME) report summarizes a physician’s medical opinion about a patient’s health status based on the physician’s expertise. IME reports contain private and sensitive information (Personally Identifiable Information or PII) that needs to be removed or randomly encoded before further research work can be conducted. In our study the IME is an orthopedic surgeon from a private practice in the United States. The goal of this research is to perform named entity recognition (NER) to identify and subsequently remove/encode PII information from IME reports prepared by the physician. We apply the NER toolkits of OpenNLP and spaCy, two freely available natural language processing platforms, and compare their precision, recall, and f-measure performance at identifying five categories of PII across trials of randomly selected IME reports using each model’s common default parameters. We find that both platforms achieve high performance (f-measure > 0.9) at de-identification and that a spaCy model trained with a 70-30 train-test data split is most performant.

**18. INVESTIGATION INTO BRAIN CHEMISTRY AND THE CHEMICAL HARDNESS OF ANTIDEPRESSANTS**

**Presenter:** Macey Smith  
**Faculty nominator/mentors:** Sanchita Hati, Chemistry & Biochemistry; Sudeep Bhattacharyay, Chemistry & Biochemistry

Antidepressants are prescribed to countless individuals worldwide to help correct the chemical imbalance within their brains, which leads to depression. In the present study, using the Blugold Super Computing Clusters, higher-level calculations of energy of quantum many-body systems are being performed to determine the chemical hardness of numerous common antidepressants. Chemical hardness is an important chemical property that provides information about molecular reactivity and selectivity. The present study conducted by Ms. Macey Smith will provide an insight into the receptor molecules within the human brain that interact with antidepressants when applying the Hard-Soft Acid-Base Principle. The successful completion of this project could help in designing and developing new drug molecules that better target the desired receptors in the brain thus, having a more direct and immediate effect on patients dealing with prolonged depression. The preliminary results of this important study will be presented by Ms. Macey Smith.
19. PRESERVICE TEACHERS’ PERCEPTIONS OF CHILDREN WITH COMPLEX COMMUNICATION GIVEN A PARENT-REPORTED NARRATIVE

Presenter: Anna Lash
Faculty nominator/mentor: Lesley Mayne, Communication Science & Disorders; Karsten Powell, Special Education & Inclusive Practices

An IRB approved mixed method study investigated the perceptions of preservice teachers’ interpretation of communication modalities (e.g., nonverbal, eye gaze, gestures, vocalizations, use of technology) and intent of a child with a severe disability given a video clip under two conditions: (a) no prior knowledge about the child, and (b) access to a protocol completed by a parent detailing how and what the child communicates. The research questions included the following: 1) How does pre-service general and special education teachers’ efficacy for communicating with an individual with a complex communication profile change after reading a parent-reported narrative about their child; and 2) Based on a video depicting an individual with a complex communication profile, how do pre-service general and special education teachers describe the individual’s communication before and after reading a parent-reported narrative about the child? The research, conducted at the University of Wisconsin–Eau Claire, included 86 participants recruited from pre-service teacher education courses. Data was collected using a survey in a pre- and post-intervention approach. Quantitative and qualitative findings will be presented.

20. HOW ADVERSE CHILDHOOD EXPERIENCES AFFECT THE MENTAL HEALTH AND ACADEMIC PERFORMANCE OF COLLEGE STUDENTS

Presenters: Andrea Peterson
Faculty nominator/mentor: Jamie Tester, Social Work; Kelly Wonder, McNair Program

Questions about the mental and physical health of individuals who have experienced trauma is a topic that continues to gain attention. Some areas of focus include the extent of a person’s trauma, the effect of trauma on future mental and physical health, the impact trauma has on an individual’s interactions with others, and the ability to form new relationships. Studies show that higher Adverse Childhood Experience (ACE) scores are directly associated with negative mental health outcomes (Chamberlain, 2020). In this study, I analyzed the content of 105 survey responses from college students to explore the self-reported impact of ACE scores on academics and relationships.


Presenter: Jesselyn Nadolny
Faculty nominator/mentor: Anne Hlas, Languages

This study investigates how the current coronavirus (COVID-19) pandemic has impacted creativity in the world language classroom. There has been recent interest on creativity within education, but little research exists regarding creativity in the language classroom. For this reason, this research study focuses on creativity in the world language K-12 classroom by analyzing creative and uncreative artifacts self- selected by K-12 language teachers. The first set of artifacts were collected prior to the COVID-19 pandemic, in spring of 2019; the second set of artifacts were collected during the pandemic, in the winter of 2020, after several months of online teaching. The research question that guides this study is: How do creative and uncreative artifacts from pre-COVID-19 and during COVID-19 compare? In this research project, the two sets of artifacts were compared in order to draw conclusions about the potential impact of the pandemic on creativity in teaching. Initial findings suggest student collaboration decreased during the pandemic and that rote learning increased.
22. HOW DID COVID-19 BECOME POLITICAL? EVIDENCE FROM NINE INTERNET NEWS WEBSITES

Presenters: Miles Plueger
Faculty nominator/mentor: Peter Hart-Brinson, Sociology

There is nothing inherently political about disease, so how did COVID-19 become a hot-button political issue in the United States? This project analyzes how nine news websites covered COVID-19 between January 2020 and January 2021. The authors coded daily screenshots of the main stories appearing on the homepages of the Associated Press, USA Today, CNN, MSNBC, Fox News, The New York Times, Wall Street Journal, Huffington Post, and Breitbart and analyzed the ways that COVID-19 was associated with different political figures from both parties through headlines and images. The analysis shows that COVID-19 was covered differently by different news websites, both in quantitative terms and in qualitative terms. It was politicized early in the pandemic in February, and that there were four major peaks in coverage, culminating in the controversy surrounding President Trump becoming infected with COVID in October, right before the election. This shows how any issue can become politicized in a partisan media environment, merely by associating it with a particular individual or party.

23. EULOGY OR OBLOQUIE? AN EXPLORATION OF POLITICAL AND PUBLIC AFFAIRS DEATHS AS REPORTED BY THE MAJOR NEWS MEDIA

Presenter: Bailey Carruthers
Faculty nominator/mentor: Peter Hart-Brinson, Sociology

When it comes to politicians’ lives, can we discern where politics ends and personal lives begin? A majority of Americans believe that news organizations are politically biased, and this research was initiated to investigate partisan bias in internet news sources. Between January 5, 2020, and January 22, 2021, daily screenshots were taken from nine different news websites to capture the main headlines and images (Associated Press, USA Today, CNN, MSNBC, Fox News, New York Times, Wall Street Journal, Huffington Post, and Breitbart). This analysis focuses on the coverage of the deaths of Rep. John Lewis and Justice Ruth Bader Ginsburg. We coded all headlines and photos that had any relation to the death of both political figures. Findings show evidence of partisan bias between news sources but that the two figures were also treated differently: whereas Lewis was properly memorialized, Ginsburg’s death was overshadowed by the controversy over who would replace her on the Supreme Court. Politics was prevalent in an otherwise personal matter, thus revealing the dissipating line between professional and personal spheres.

24. WAR ON TERROR AND INTERNATIONAL CRIMINAL LAW

Presenter: Natalie Cruzat
Faculty nominator/mentor: Damir Kovacevic, Political Science

This project examines the impact of the War on Terror on International Criminal Law (ICL hereafter). It is well known that war crimes were committed by the US during the War on Terror and that few people have been punished for those crimes. While it is difficult to enforce ICL, especially on great powers, actions taken by the US to disregard and circumvent established international law during the War on Terror were particularly egregious and blatant. Much research has been done into how this happened and why enforcement was so lacking but comparatively little has been done on what impact this has had on ICL as a whole. The goal of my research would be to contribute to our understanding of the long-term impacts of the War on Terror, specifically on the field of ICL.
25. MEASUREMENT OF AIR EXCHANGE RATE TO REDUCE COVID-19 TRANSMISSION

Presenters: Danielle Zahn, Breanna Wiese, Annika Yoney, Brooke Jahner, Emily Fountas
Faculty nominator/mentor: Crispin Pierce, Public Health & Environmental Studies; Jim Boulter, Public Health & Environmental Studies

Containing and minimizing the spread of COVID-19 remains a concern for educational institutions including UWEC where students have returned to in-person classrooms. While campuses have targeted issues of direct transmission of COVID-19 through vaccination, distancing, and masking, we have missed a vital component: ventilation. COVID-19 is transmitted through aerosolized respiratory droplets, so proper ventilation and air recirculation are crucial factors in reducing the risk of transmission in indoor environments. We hypothesized that a simple, cheap, and definitive method of assessing risk of COVID-19 transmission by calculating room ventilation rate would lead to lower exposure risks. Handheld CO₂ monitors and a numerical model designed by Dr. Jose-Luis Jimenez were used to quantify rates within 25 University of Wisconsin-Eau Claire main and Barron County campus classrooms. Results led to the installation of air purifiers in 10 of these rooms, and the construction of 5 box fan filters to reduce risks. Methods developed in this project can be used to inexpensively assess potential high-risk areas, deploy purifiers, and empower college students and building managers to reduce COVID-19 transmission risks.


Presenters: Ethan Blaney, Kayla Irlbeck, Zach Ledwith, Tristan Shuttleworth
Faculty nominator/mentor: Eric Jamelske, Economics

The Eau Claire Farmers’ Market (ECFM) offers a Market Match Program (MMP) to incentivize Supplemental Nutrition Assistance Program (SNAP) participants to shop at the market. In 2020 and 2021, COVID-19 increased the number of families facing food insecurity. The ECFM also faced many challenges regarding how to operate safely and households faced decisions about where/when to shop for food during the ongoing pandemic. This study employs administrative data to compare SNAP households’ usage of the ECFM-MMP before and during the pandemic. We find that more SNAP households used the ECFM-MMP in 2020 compared to the pre-pandemic years of 2018 and 2019 with an additional increase in utilization in 2021. The percent of eligible SNAP households that used the ECFM-MMP at least one time in a season remained relatively constant at about 9% in 2018, 2019 and 2020, and increased to just over 11% in 2021. Our data also reveal that approximately 50% of SNAP households using the ECFM-MMP only shopped at the ECFM one time per season in each of the four years between 2018-2021.

27. USING SURVEY DATA FROM 2021 TO EXPLORE BARRIERS LIMITING USAGE OF THE SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM-MARKET MATCH INCENTIVE PROGRAM AT THE EAU CLAIRE FARMERS’ MARKET

Presenters: Annabelle Howat, Katie Klingbeil, Andrew Lindaas, Madelyn Zenner
Faculty nominator/mentors: Eric Jamelske, Economics

The Eau Claire Farmers’ Market (ECFM) offers a Market Match Program (MMP) to incentivize Supplemental Nutrition Assistance Program (SNAP) participants to shop at the market. Administrative data show that approximately 90% of eligible SNAP households never use the ECFM-MMP, while approximately 50% of SNAP households using the ECFM-MMP only shopped at the ECFM one time per season. In 2021, we conducted surveys of SNAP shoppers at the ECFM (N=149) and SNAP households that did not shop at the ECFM through a mailer (N=240) to identify barriers that limited/prevented people from using the ECFM-MMP as well as what factors might increase their ability to shop at the ECFM using their SNAP benefits. The top barriers to using the ECFM-MMP
were similar for both groups and included limited FM hours/locations, difficulty getting to/from FM, did not remember, can’t get all food needed at FM. The factors that would increase usage of the ECFM-MMP were also similar for both groups and included a larger match amount, expanded FM hours/locations, increased awareness and reminders and mobile FM in neighborhoods.

**Hochunk Room**

**28. Spear and Shield: Coding to Thwart Adversarial Aggression**

*Presenters: Ariel Liu*

*Faculty nominators/mentors: Allison Beemer, Mathematics*

This project explores communication authentication and partial correction over the two-user binary real-addition multiple access channel. In particular, we investigate how efficient an encoding scheme can be while still guaranteeing protection against a malicious adversary who wishes to disrupt communications. We explore achievable rate regions both with and without an adversary’s participation on the channel, and give necessary and sufficient combinatorial conditions for a good codebook pair for (partial) correction of the two users’ messages.


*Presenter: Emily Liu*

*Faculty nominator/mentor: Jidong Zhang, Accounting & Finance*

This research project will start from accounting and data analysis perspective to estimate the amount of greenhouse gas emissions in the future 5 years in Minneapolis based on the past 10 years’ data and provide a model for the government to estimate the budget for reducing greenhouse gas emission. Related research on this field is relatively blank so far, and the government’s needs for a budget in environment field are desperate. Our project focuses on providing a model for the government to apply when they are making a budget on controlling the emission of greenhouse gas emission. The project has practical implications to the government and non-profit organization, also contribute to academic research.

**Chancellors Room**

**30. It’s a Wrap: Exploring Environmental Influences That Impact Youth Access to Commercial Tobacco Products**

*Presenters: Nicole Wolfe, Grace Neugebauer*

*Faculty nominators/mentors: Lorraine Smith, Nursing; Angie Stombaugh, Center for Excellence in Teaching & Learning*

This interdisciplinary research project explored how the local business community could influence commercial tobacco use in adolescents. Our research team consisted of nursing students from the University of Wisconsin-Eau Claire, a faculty mentor, and a community partner. We gathered data on environmental influences that impact adolescent’s access to commercial tobacco products in Eau Claire County. A field study investigation was conducted to gather data using an abbreviated version of the Wisconsin Retailer Assessment Program (WRAP) assessment tool. From this data, we mapped all Commercial Tobacco Retailers within one mile of high schools and middle schools in Eau Claire County. Over 40 Commercial Tobacco Retailers were surveyed for advertising information, price promotions, product placement, and self-service tobacco displays. These factors largely influence adolescent’s access to commercial tobacco products in Eau Claire County. This research project provides an upstream prevention focus that will lead to a healthier Eau Claire community and showcases how undergraduate nursing students can impact adolescent’s health in the greater community through collaborative research efforts.

**31. Impact of Social Support on Trauma and Self-Injury**
Childhood trauma is an established risk factor for nonsuicidal self-injury (NSSI), however limited studies examine how cumulative trauma across one’s life impacts NSSI frequency. Similarly, few studies assess the protective effect of cumulative social support (e.g., multiple forms of support) on the trauma-NSSI relationship. This study tested whether cumulative social support would interact with cumulative trauma, reducing trauma’s effect on NSSI. Data from a random sample of 468 students with a history of NSSI (Mage = 21, 82.9% female) were collected via an online survey. Moderated regression analyses revealed that cumulative social support significantly moderated the relationship between trauma and NSSI (t = 2.70, p < 0.005, 95% CI = 0.023, 0.149). To replicate past work, the unique effects of family, friends, and special person support were tested. Only friend support significantly moderated the effect of trauma on NSSI frequency. Cumulative social support is associated with reductions in the negative impact of trauma, but friend support may carry the greatest benefit. Including supportive others in post-traumatic interventions may help reduce the occurrence of NSSI.

Co-authors: Amber Bouche, Victoria Tillotson

32. FOREST FOLKLORE IN GERMAN NATIONALISM AND NATURSCHUTZ
Presenter: Molly Larson
Faculty nominator/mentors: Ezra Zeitler, Geography & Anthropology; Josh Brown, Languages

The mythology and folklore of the German forest is deeply pervasive in German culture. It has influenced nationalist movements including the völkisch movement of the late-1800s, and later, anti-Semitic Nazi propaganda and some conservation efforts within the Nazi party. To what degree are these ideologies present in German culture and politics today? To further explore this topic, we conducted a literature review consisting of journal articles, books, and news articles to understand how the German forest has influenced German political geography, conservation, and nationalism throughout history and in the current day. The results suggest that the mythology of the German forest remains deeply tied to conservation efforts, the fight against climate change, and the popularity of the right-wing neo-Nazi party in Germany.

33. COMMANDING ONESELF IN THE INFORMATION AGE
Presenters: Ryan Dainsberg
Faculty nominator/mentors: Matthew Meyer, Philosophy & Religious Studies

In the last 30 years, our world has changed dramatically under new power systems surrounding Information. With the ubiquity of technology and the hegemony of neoliberal logic, our ability as individuals to choose may seem free but is strategically shaped for others’ political and economic ends. In order to allow people the ability to command themselves, we must make fundamental societal changes to what is reinforced in regard to obtaining and disseminating information. On an individual level, we must utilize knowledge to command ourselves to escape commercial and political manipulation. Reexamining Friedrich Nietzsche’s concept of the will to power in today’s world offers us some valuable insight on the choice we are posed with: to command ourselves or to allow ourselves to be commanded by others. Only by examining certain cognitive biases and overcoming documented techniques Big Information uses to manipulate our behavior can we be sure we are not commanded by others in the Information Age.

34. HOLOCAUST ARCHAEOLOGY: GPR SUBSURFACE IMAGING OF THE MILA 18 MEMORIAL IN WARSAW, POLAND
The Holocaust was the genocide of the Jewish people and took place from 1933 – 1945. In 1943, 3 years after the construction of the Warsaw Ghetto, marked the beginning of the Warsaw Ghetto Uprising which was unsuccessful. The main insurgents of the uprising were called the Jewish Combat Organization. The headquarters of this group was located under 18 Mila Street. On May 8th, 1943, the bunker was located and gassed. Civilians inside the bunker who were unable to escape surrendered, while the fighters in the bunker committed suicide. This project aims to use ground penetrating radar (GPR) to investigate the site of the memorial in place of this event. A grid of 22m x 30m was collected in the field north of the memorial. 120 total lines were collected with a pulse EKKO Pro GPR system with antennae frequency of 500 MHz with a step size of 0.02m and a line spacing of 0.25m. The data was then processed with EKKO Project software. Within the data there are patterns approximately 1m in depth that run across the entire 30m area. There are two identical patterns that line up with the location of the infrastructure of the old Muranowska Street that existed in 1943. This could either be a sidewalk of the road or the road itself. GPR is crucial in these studies due to the clear resolution it can provide of subsurface objects. GPR can help provide a clearer picture on what lies beneath the ground and this project does an excellent job of highlighting objects in the subsurface.

**35. QUANTITATIVE ANALYSIS OF INTERPRETER SERVICE MODE COSTS IN NORTHWESTERN WISCONSIN PRE- AND PERI-COVID-19**

Presenters: Kelson Fox
Faculty nominator/mentors: Elena Casey, Languages

The mode of interpreter services can impact patient experiences and engagement in the healthcare system, but clinics must balance quality with costs andvolume to deliver these services. In-person interactions are valuable to providers and limited English proficient (LEP) patients as they enable the interpreter “to recognize and respond to emotional and physical cues” (Jacobs et al., 2011, p. 1935). However, videoconferencing and telephone services function as lower-cost interpreter options and are effective in contexts where on-site interpreters are scarce, or LEP patients and/or interpreters are unable to travel to health care centers. The COVID-19 pandemic has generated these conditions in NWWI, necessitating social-distancing measures, stay-at-home orders, and reduced travel. Our presentation will examine how costs of interpreter services have changed overall and/or resulted in costs shifting from one modality to another for LEP patients whose first languages are Spanish, Hmong, and ASL at the Mayo Clinic in Eau Claire & Menomonie during the COVID-19 pandemic.

Co-author: Gina Benson

**36. BURNOUT AT WORK: A SURVEY OF MAYO HEALTHCARE WORKERS AND UWEC FACULTY AND INSTRUCTIONAL STAFF**

Presenters: Adamary Rosas, Parker Lay
Faculty nominator/mentor: April Bleske-Rechek, Psychology

Burnout – emotional exhaustion and callousness at work – is a concern across occupations. Various work factors, such as workload and emotional distress at work, are associated with an increased risk of burnout, whereas feeling competent at work is associated with lower rates of burnout. The current research, with student investigators Adamary Rosas and Parker Lay, was designed to extend upon past research on burnout risk. In a survey of 300 Mayo healthcare workers and 140 UWEC faculty and instructional staff, we assessed an array of work factors that have been tied to burnout, and we included personality measures in order to isolate work factors that correlate with burnout above and beyond burnout that can be explained by employees’ individual personality traits. In their talk, Ada and Parker will share results on employees’ degree of burnout and their perceptions of...
various work factors. Ada and Parker will also report on personality traits that predict burnout and which work factors, after accounting for employees’ personality traits, explain additional variance in employee burnout.

### 37. COVID-19 COPING AND POSITIVE OUTCOMES

**Presenters:** Carley Owens, Nicholas Grande  
**Faculty nominator/mentor:** Jennifer Muehlenkamp, Psychology

Traumatic experiences, such as the Covid-19 pandemic, can bring about post-traumatic growth including strengthened coping skills, but this side of the pandemic has been overlooked. The current project examined whether individuals with perceived improvements in coping due to the pandemic would endorse fewer adverse outcomes (depression/ anxiety, self-harm, hopelessness) and greater protective outcomes (social support, self-compassion, resilience) than those without perceived improved coping. Participants were 888 (78% female) students who completed an online survey asking about coping with the pandemic and the outcome variables. Independent sample t-tests showed that improved coping participants reported significantly greater protective outcomes (ts = 8.29 to 12.99, ps < .01) and lower adverse outcomes (ts =3.38 to 10.79, ps < .01). A binary logistic regression showed that lower hopelessness, self-compassion, and resilience significantly predicted membership into the improved coping group. For some, the covid pandemic has produced an opportunity for growth and improvement in one's coping abilities which was related to better psychological outcomes. Future studies of the pandemic should examine possible positive effects alongside the negative outcomes.

### 38. NURSE TRAINING, ATTITUDES, COMFORT, & CONFIDENCE IN SUICIDE PATIENT CARE

**Presenters:** Nicholas Grande, Emma Steffel  
**Faculty nominator/mentor:** Jennifer Muehlenkamp, Psychology

Emergency department nurses frequently treat patients at risk for suicide, but often lack sufficient training, which can negatively impact patient care. Limited research suggests suicide-specific training can improve care delivery, but the mechanisms of this effect have not been sufficiently examined. This study evaluated the hypothesis that ED nurses’ confidence in caring for suicidal patients would mediate the relationship between training and attitudes/comfort caring for suicidal patients. ED nurses from regional hospitals (n= 136, 88% female, Mage=41) were recruited through email invitations and completed an anonymous survey assessing attitudes, comfort, and confidence working with suicidal patients, and suicide training received. Bias-corrected linear regression models were run. While overall training rates were low, confidence did mediate the relationship between training and perceived attitudes/comfort (indirect effect = 0.087, SE=0.045, LLCI=.003, ULCI=.180), explaining 6% of the variance. Providing training to ED nurses for working with suicidal patients is important to ensure proper care. Additional implications will be shared.

### 39. ARE PARENTS OF A CHILD WITH LEUKEMIA AT RISK FOR SECONDARY EXPOSURE TO CHEMOTHERAPY AT HOME?

**Presenters:** Maddie Jacobs  
**Faculty nominator/mentor:** Dalete Mota, Nursing

When parents care for a child with cancer undergoing oral chemotherapy at home, there is a risk of secondary exposure while giving the medications or dealing with their bodily fluids (urine, vomit, feces, and sweat). Our objective is to investigate if caregivers receive and follow the necessary precautions to reduce their risk of secondary exposure to chemotherapy. After IRB approval, this cross-sectional study was conducted in a specialized pediatric oncology setting. Parents of children receiving oral treatment for Acute Lymphocytic Leukemia were invited to participate in the survey. Up to now, 17 individuals have participated in the study. Mothers (n=11) were the primary person giving the child’s home chemotherapy, and in some cases (n=5), both the mother and the father were responsible for giving the child’s treatment. Unfortunately, most reported not having received instructions
related to precaution measures and did not practice these measures (e.g., using gloves to handle diapers or other child’s excretes, washing child’s soiled clothes with hot water). Results suggest the need to provide more thorough instructions on secondary exposure prevention.

**40. AN UPDATED APPLIED CHANGE LEADERSHIP MODEL ADJUSTED TO INCLUDE EDI MEASURE AND COMMUNICATION TECHNOLOGIES**

**Presenter:** Amber Scharenbroch  
**Faculty nominator/mentor:** Jane Strong, Business Communication; Paula Lentz, Business Communication

The purpose of this qualitative research is to explore how to develop a successful change management program for use within an organization. Previous research suggests that change leadership models are key to organizational change. However, the literature fails to consider new steps that must be taken when considering change in EDI measures and how communication technologies play a role. The research will be conducted in two parts. Part one is a synthesis of literature and proposed changes to existing change leadership models. The second part researches a Fortune 500 company’s EDI initiatives on public social media platforms during January 2022 while cross-referencing the company’s corporate statement on EDI. These findings will be analyzed and evaluated on their change leadership methods. The expected outcome of this research is that organizations have an easy time taking steps to change, but they need to consider greater bounds when taking EDI initiatives. More specifically, organizations that use a change leadership program geared to taking EDI initiatives will see greater success than those who use a regular change model.

**41. UN-MODELING MINORITY MYTH OF ASIAN AMERICANS**

**Presenter:** Angelina Lind, Yongxin Cai  
**Faculty nominator/mentor:** Yan Li, Economics; Wayne Carroll, Economics

Since the onset of the COVID pandemic, there has been a significant rise in anti-Asian hate crimes across the United States. This grim reality is devastating, but unfortunately not surprising to Asian communities, who have struggled with bias – or hate-motivated conduct not only related to the pandemic but throughout modern American history. In this project, we studied the nation’s long history of scapegoating of Asians that goes as far back as the 19th century, revisited the roots of the model minority paradigm, and analyzed why this model minority myth was pervasive and dangerous to the Asian Americans and Pacific Islanders (AAPI) communities. By examining data in Current Population Survey (2020), a logistic regression model was fit to determine factors which were associated with each ethnic group’s voting participation. We compared and interpreted differences in voting behavior between Asian Americans and other ethnic groups. Overall, Chinese Americans had a lower propensity to vote than most other Asian ethnic groups. By contrast, Asian Indian Americans demonstrated stronger voting enthusiasm. 

**Co-authors:** Ziyang Xie

**42. ONLY SOME PEOPLE CAN SAY THAT: EFFECTS OF MESSENGER’S RACIAL IDENTITY ON REACTIONS TO CONTROVERSIAL INFORMATION ABOUT RACISM IN POLICING**

**Presenter:** Ryan Dobson, Wesley Johnson, Kora Witthun  
**Faculty nominator/mentor:** April Bleske-Rechek, Psychology

People are not impartial, objective receivers of information. In this student-faculty research collaboration, we investigated the degree to which people’s reactions to scientific information about a controversial issue, racism in policing, are influenced by two factors: the racial identity of the messenger (black or white), and the media platform on which the messenger presents their information (MSNBC or Fox News). We hypothesize that the messenger’s racial identity and political platform will interact to affect participants’ receptivity to the information.
We also expect individuals' own political attitudes and racial identity will moderate the effects of the manipulations. In their talk, Ryan, Wes, and Kora will describe the theoretical rationale for their research, their method and sample demographics (representative sample of U.S. adults), and the results of the analyses.