CELEBRATION OF SCHOLARSHIP & CREATIVE ACTIVITY

April 26, 2018

25th Annual Event
Abstracts Booklet

UNIVERSITY OF WISCONSIN OSHKOSH

OSRCA

CELEBRATION OF SCHOLARSHIP & CREATIVE ACTIVITY

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Posters are displayed from 8:30 a.m. to 4:00 p.m. in the Reeve Ballroom.
Visual Art exhibits are in the Reeve Ballroom from 8:30 a.m. to 4:00 p.m.
Poster and Visual Art presenters will be available to discuss their work from 11 a.m. to 1 p.m.

* Denotes a recipient of the FY 2017–18 Student/Faculty Collaborative Research program grant and Small Grants awarded by the Office of Student Research and Creative Activity.

♦ Denotes a graduate student.

Presence of the Mycobacterial Tuberculosis Complex in Skeletal Samples from Ukraine

Tre Blohm* (Dr. Jordan Karsten and Dr. Ryan Schmidt–School of Archaeology and Earth Institute, University College Dublin)
Anthropology
Poster Presentation (P1)

This research aims to investigate the biocultural interactions by studying ancient disease among the Tripolye, specifically, by using ancient DNA to identify the presence of tuberculosis. The Tripolye culture was the first archaeological culture in Eastern Europe to live an agriculturally rich lifestyle, pastoralize animals, and establish large settlements with high population densities (Karsten et al. 2014). This distinctive style of life would have had significant alterations to health than that of the mobile hunter-gatherers previously living in the same area of Ukraine. One impact could have been the introduction of disease due to close association with domesticated animals. One such example is tuberculosis. Tuberculosis has been infecting humans since ancient times and persists in many regions today. Tuberculosis is caused by the organism *Mycobacterium tuberculosis* which existed 15,000 to 20,000 years ago and has since evolved into 16 different strains known as the Mycobacterium Tuberculosis Complex (MTBC) (Daniel 2006; Sinha et al., 2016). Its effect on the people of the Tripolye culture in Ukraine is not yet known, but this paper will provide data based on the presence or absence of the infection in the skeletal remains.

A Test of the Standard Method for Morphological Sex Determination of the Human Crania

Jamie Mikrut (Dr. Jordan Karsten)
Anthropology
Poster Presentation (P2)

Biological sex is a key demographic characteristic for any forensic anthropologist to estimate when trying to determine the identity of an unknown individual. The cranium is one of the best indicators used to determine sex. Currently, an established morphological trait scale is used to try and determine a score for different morphological features based on an ordinal scale from 0 to 5; 0 meaning undetermined sex due to insufficient data, 1 meaning little doubt that the structure represents a [gracile] female, 3 being ambiguous and in the middle, and 5 representing a [robust] male. Key features examined to determine biological sex include the size and shape of the nuchal crest, mastoid process, supra-orbital margin, supra-orbital ridge/glabella, and mental eminence. It is assumed by forensic anthropologists that the standard trait scale accurately reflects biological sex; however, this assumption has not been tested on human skeletal collections of known sex. The goal of this project is to establish rates of accuracy for use in expert testimony in regard to the standard suite of non-metric sexually dimorphic variables using the Hamann-Todd Human Osteological Collection in Cleveland, Ohio. The results demonstrate that not all traits are equally useful in terms of sex determination. In fact, traits including the nuchal crest and supraorbital margin should potentially be removed from sex estimation use.

Painting Mud

Noell Graf (Craig Clifford)
Art
Visual Art Presentation
Reeve Ballroom 227A&B (11:00 a.m. – 1:00 p.m.)

An experimental method I have been focusing on is a contemporary Japanese form of marbling clay, Nerikomi. This was a popular trend in pottery through the 1970s to the end of the 1990s. My “Painting Mud” is even more contemporary, mixing carbonates and oxides at random with clay, combining it with ordinary clay and throwing it on the wheel. This technique and coloring of stoneware clay before kiln firing is a rather scientific process in its use of chemicals. The experiment I present with this technique is to create colored clay through successes and failures coming from someone with very little science background.

“Painting Mud” ceramics combines the scientific understanding of chemical interactions with the creative and experimental techniques attempted in the arts. I attempt to create vibrant, blended colors through clay instead of with glazes. Color is often added to ceramics as an afterthought, achieved through glazes, while “Painting Mud” aims to present color and experimentation as an immediate thought. This work will demonstrate the beginning-to-end process of marbling clay.

Beautiful Bodies WITHDRAWN

Mirella Hix (Craig Clifford)
Art
Visual Art Presentation
Reeve Ballroom 227A&B (11:00 a.m. – 1:00 p.m.)

My ceramic sculptures are about the appreciation of the human form. The ceramic vessels are similar to the human form with their curves that form through their transformation from unwedged clay to fired ceramic—much like the human body's transformation through puberty. My vessels are meant to evoke an admiration for all human forms. The vessels are wheel thrown and altered to resemble the human body, and emphasize the difference in body shapes. I chose to make sculptures about the human body to help me accept that my body is beautiful, despite society dictating what is beautiful. I hope that my sculptures will help people see beauty in the banality of themselves and their bodies.

Hybrid

Amber Joseph (Craig Clifford)
Art
Visual Art Presentation
Reeve Ballroom 227A&B (11:00 a.m. – 1:00 p.m.)

This sculpture was inspired by different animals and creatures. The project is for Ceramics; we had to create an animal. I couldn't just choose one animal, so I decided to mix it up. This sculpture was inspired by an alligator, bulldog, and a fish. I always try to give my creatures some personality and I implement that into my work. Not only that, but working with unique shapes and sizes of different living things makes the creative process enjoyable.

Programmable Painting

Nicholas Pierson* (Gail Panske)
Collaborator: Jessica Boogaard
Art
Visual Art Presentation
Reeve Ballroom 227A&B (11:00 a.m. – 1:00 p.m.)

The programmable painting is a composition I created in collaboration with Jessica Boogaard. The goal of the painting is to incorporate traditional painting elements like texture, line and composition with technological elements like microcontrollers, LEDs and button switches. The idea is that the LEDs act as pigments of color and work together with the composition to create a combination of technology and painting on a canvas. The program is written to simulate anatomical blood flow through LED sequential blinking and a LED pulse that imitates the heartbeat. The ignition of the program is created when the viewer presses a momentary switch button that turns the Arduino on and runs the code. Three Arduinos and three button switches controls 111 LEDs. Each button can be pressed individually creating an organic flow that is unique to its own path. Viewers choose what button to press and how many at a time. The composition and viewer interaction creates a unique composition that pushes the boundaries in the idea of gallery exhibition environments.

Craft Brewing More Than Just Beer: The Inner Workings of *Saccharomyces cerevisiae*

Megan DeCoster* (Dr. Sabrina Mueller-Spitz)
Biology
Oral Presentations Session I
Reeve Union Room 220 (8:30 a.m. – 9:30 a.m.)

Yeast, *Saccharomyces cerevisiae*, is a significant part of brewing a tasty and quality batch of beer. There are many microbial processes that go into brewing a consistent product. My research looked at yeast health in the post-fermentation stages as the beer was cooled to understand the stress the yeast endured. The aim of the research was to determine yeast pitching rates for a new batch based upon who remained active in the current batch. Achieving a desired "viable population" in the pitching volume also provides consistent fermentation rate and flavor. The yeast was collected two times a week to test the fitness, by analyzing viability and cellular targets that indicate stress level. The viability of the tested yeast was relatively low, indicating a higher pitching rate was required. The level of expression in the genes HSP104, HSP12, and TDH that are related to stress in yeast were measured. The molecular data of the yeast showed amplification in these genes, suggesting exposure to stress. Determining the health and viability of yeast is important for the quality of fermentation and subsequent batches.

Extracellular DNA in the Biofilms of *Deinococcus aquaticus*

Danielle Dolinac* (Dr. Sabrina Mueller-Spitz)
Biology
Poster Presentation (P3)

Thin films of bacteria, known as biofilms, exist naturally in the environment. Extracellular DNA (eDNA) is a known component of some of these biofilm matrices, aiding in biofilm formation, structure, and stability. However, eDNA is mostly studied in medically relevant bacteria such as *Pseudomonas aeruginosa* and *Staphylococcus aureus*. Due to this medical focus, there is limited information on eDNA producers from other habitats such as freshwater biofilms. Since *Deinococcus* species can be dominant members of freshwater biofilms, we hypothesize that *Deinococcus aquaticus* biofilm formation is aided by eDNA release. This hypothesis is further supported by the observation of an unknown feature within the extracellular matrix in *D. aquaticus* strains on a scanning electron micrograph. A collection of *D. aquaticus* strains (n=17) were ranked as poor, intermediate, or strong biofilm formers using optical densities measured after a crystal violet assay. eDNA was characterized using polymerase chain reaction where genomic genes were used to determine the identity of eDNA from the washed biofilm samples. The eDNA illustrates definite similarities to genomic DNA, with the amount of similarities varying by strain. This information leads to the hypothesis that the extracellular matrices of *D. aquaticus* biofilms contain extracellular DNA.

Characterization of Biomass Degrading *Bacillus* and *Paenibacillus* species from a Wet Fermentation Digester

Jenna Fossen♦, Jane Ballesteros♦, Zachary Bowers, Megan DeCoster, Paul Denil, Konrad Fondrie, Laura Hagen, Olivia Juel, Samantha Nixon, Morgan Rymer and Samantha Schroeder (Dr. Sabrina Mueller-Spitz and Brian Langolf)
Biology
Poster Presentation (P4)

The microbial communities of biogas digesters break down agricultural and food wastes, generating renewable fuel in the form of methane gas and yielding high-nutrient fertilizers. However, the composition and metabolic functions of these communities remain under-explored. Digesters therefore are unique environments for finding microbes with novel biomass degrading abilities. Our research explored the microbial diversity and function of a wet fermentation digester (Allen Farms, Wisconsin). A snapshot of the microbial community in the digester was determined with high throughput sequencing and analyzed for biomass-degrading bacterial taxa. Aerobic bacteria were isolated from feedstock on various cellulose derivatives and characterized for biomass degradation. Like the bovine gastrointestinal microbiome, the biodigester microbial community was highly diverse and dominated by Firmicutes and Bacteroidetes. Isolates belonged to the genera of *Bacillus* and *Paenibacillus*. They produced high levels of extracellular enzymes when cultured on unprocessed grains. Extracellular enzyme production was highest at mesophilic temperature, and enzyme production and activity were higher on corn xylan than on beechwood xylan. As xylan is a dominant polymer of hemicellulose, extracellular enzyme production and degradation of xylan are important for digester efficiency. These findings suggest that *Bacillus* and *Paenibacillus* are ideal models for novel enzyme discovery.

Keywords: Bacillus, Paenibacillus, biomass degradation

Cross-Family Study of the Enigmatic Plant Cystolith

Nicholas Gabel* (Dr. Robert Wise; Dr. George Rogers–Palm Beach State College)
Biology
Poster Presentation (P5)

Plants were one of the first organisms to develop the ability to survive Earth's noxious atmosphere. Over time, plants have evolved and differentiated morphologically and physiologically from one another. Our research looks at a unique structure called a cystolith (composed of calcium carbonate and cell wall material with trace amounts of silicon and iodine) found in some plants tissues. Cystoliths have been noted in botanic literature for over 130 years but their function and development are still unknown. This study takes a broad look at the diversity of cystolith structure and composition across a wide swath of plant families including the Acanthaceae, Boraginaceae, Cannabaceae, Moraceae and Urticaceae.

Observing How the Natural Difference and Variance in Reproductive Output in

Sexually Mature Adult Female *Brugia pahangi* in Culture Can Predict Their Reproductive Behavior in Mongolian Gerbils (*Meriones unguiculatus*)

Zachary Heimark*, Steve Schaar and Nafeesa Rahman (Dr. Michelle Michalski)
Biology
Poster Presentation (P6)

The filarial nematode *Brugia pahangi* is maintained for the National Institutes of Health Filariasis Research Reagent Resource Center (FR3) at University of Wisconsin Oshkosh. To propagate the *B. pahangi* life cycle, we require infected gerbils with high numbers of microfilariae in their peritoneal cavity. However, we have found that ~50% of our gerbils do not reach these numbers following infection. We hypothesized the number of microfilariae produced by female worms *in vitro* would be predictive of their microfilariae production *in vivo*. In this experiment, adult female *B. pahangi* were individually cultured to determine fecundity, and the worms were categorized as having high or low microfilariae output. The female worms were then paired with male worms and implanted into recipient gerbils. The number of microfilariae in the peritoneal cavity of each gerbil was determined 28 days post-implantation. Across replicates, the number of microfilariae recovered from the gerbils that received the high fecundity female worms was 1.95 times higher than the number of microfilariae recovered from the gerbils that received the low fecundity females. A small sample size prevented further statistical analyses.

Detection of *Escherichia coli* in Northern Lake Michigan Waters Using qPCR Method C

Ronald Hernandez*♦ (Dr. Gregory Kleinheinz)
Biology
Poster Presentation (P7)

The defined substrate assay, Colilert® (IDEXX, Westbrook, ME), is currently approved by the United States Environmental Protection Agency (U.S. EPA) in order to detect *Escherichia coli* and total coliforms in water. One use for the test is to prevent waterborne illness in beach users after contact with recreational water, but results are not available for 18 to 24 hours since it requires an overnight incubation. Conducting quantitative, real-time polymerase chain reaction (qPCR) Method C (US EPA, 2015) reduces the analysis time to less than six hours when identifying *E. coli* calibrator cell equivalents (CCE). Comparison of both techniques (Method C and Colilert®) was conducted at six Wisconsin beaches throughout the 2016 and 2017 summer beach seasons. These beaches in Door, Kewaunee and Manitowoc counties represent a variety of locations with historically high and low indicator concentrations. The overall goal of this project was to determine how Method C relates to the traditional culture-based enumeration methods at northern Lake Michigan beaches. The results from this study indicated that beaches with higher total *E. coli* concentrations had more positive correlations when using qPCR Method C, while locations with lower *E. coli* concentration did not.

Assessing the Clinical Relevance of Fungal Genotype in Blastomycosis Infections

Klaire Laux*♦ (Dr. Stephen Bentivenga; Dr. Gregory Gauthier–University of Wisconsin-Madison;
Dr. Jennifer Meece and Jennifer Anderson–The Marshfield Clinic Research Institute)
Biology
Oral Presentations Session I
Reeve Union Room 220 (8:30 – 9:30 a.m.)

Blastomycosis is a fungal disease caused by *Blastomyces* spp. which grow as mold in the environment that produce infectious spores. Once inhaled, spores transform into yeast which cause potentially lethal infections. Wisconsin has the highest incidence of and mortality rates associated with blastomycosis in the United States. In 2013, a new species of *Blastomyces* was discovered called *Blastomyces gilchristii*. My goal was to assess the clinical relevance of this recent distinction.

Clinical isolates were obtained from medical laboratories, isolated from patients throughout Wisconsin who were diagnosed with blastomycosis from 2008–2016. Fungal genotype was identified and compared to clinical data. *B. gilchristii* displayed stronger attributes affiliated with a true pathogen in that it infected people without underlying conditions or risk factors. The urine antigen test, a diagnostic assay, displayed more false negatives in *B. dermatitidis* infections which indicated the need for improvement of this assay. We also found evidence for the need of standardization of post-diagnostic monitoring assays such as the practice of therapeutic drug monitoring. Last, we found conservation in a

gene that is possibly linked to the ability of *B. gilchristii* to cause disease. These data will help inform new treatment guidelines for patients suffering from blastomycosis.

Isolation and Identification of Cellulose Degrading Bacteria from the UW Oshkosh Biodigester

Samantha Nixon and Alex Gallo (Dr. Eric Matson)
Biology
Poster Presentation (P8)

Dry fermentative biodigesters contain microorganisms that utilize organic material waste to generate biogas, a mixture of methane and CO_2, which then is captured and combusted as a sustainable fuel source to generate heat and electricity. Some of the microorganisms found within these digesters have the ability to degrade cellulosic material. These microorganisms depolymerize substrate and ferment released sugars under anoxic conditions, releasing reduced metabolic products. These products fuel the metabolism of methanogenic archaea, which convert acetate, H_2, and CO_2 into methane. So in essence, the production of biogas at its simplest form relies on the syntrophic interactions between cellulose-degrading bacteria and methane producing archaea. Having a representative of each type of species in culture would allow us to investigate their interactions when grown together. Previously conducted research isolated and identified methanogenic archaea. Here we isolated additional cellulose-degrading bacteria and have demonstrated their potentially important role in the biodigester by observing that liquid cultures can degrade at least 5 mg of cellulose filter paper in as little as 24 hours. Upcoming research will seek to introduce these cellulose-degrading bacteria to methanogenic archaea to begin studying substrate utilization in co-culture.

The Impacts of Stream Habitat and the Surrounding Terrestrial Habitat on the Diversity of Fish Communities in Waukau Creek

Nathan Nozzi* (Dr. Robert Stelzer)
Biology
Poster Presentation (P9)

A fish survey of Waukau Creek, Wisconsin, was conducted using a backpack electrofishing method to assess impacts that the stream habitat and the surrounding terrestrial habitat have on fish communities in the stream. Three sites that differed in habitat were sampled for fishes. Shannon Wiener diversity was calculated for each site, along with species richness. The species richness was the highest for the two reaches that had gravel as the dominant substrate, and the highest species richness occurred in an area adjacent to farm fields. The other two reaches were surrounded by forest. We found two species of darters, *Etheostoma zonale* and *Etheostoma exile*, a site in a nature preserve site, which suggests that the habitat or water quality there is high as these species are known to be sensitive to pollution. These species were not found at the other sites. We found bullhead and stonecats at these other sites, which suggest lower levels of habitat or water quality in these areas because these fishes are tolerant to pollution.

Surveying the Diversity and Function of Stridulatory Plates in Longhorned Beetles

Lyndsay Poeschl♦ (Dr. Robert Mitchell; Emma Reading and Dr. Jodi Sedlock–Lawrence University)
Biology
Poster Presentation (P10)

Many species of longhorned beetles (Cerambycidae) stridulate audibly by rasping the posterior margin of the pronotum over a stridulatory plate, or pars stridens, on the mesonotum. The function of stridulation is largely unknown, but individuals may stridulate when encountering conspecifics, and are especially likely to stridulate when disturbed. These “chirps” are broadband and largely ultrasonic (5-125 kHz), and we hypothesized that they may be a disruptive response to bat predation. Here, we have recorded chirps of multiple species of longhorned beetles to determine how the acoustic properties of the chirp correlate with evening activity periods (and thus bat activity), species (suggesting intraspecific communication), or individual morphology. Additionally, we have coupled our approach with scanning electron microscopy (SEM) to observe the structure of the pars stridens in each species. Our preliminary results suggest that the properties of the pars stridens are similar within species, but may vary considerably even among closely related species (including absence of the structure). Ultimately, we aim to correlate the stridulation of the beetles to the structural features of the pars stridens, enabling us to extrapolate acoustic properties directly from preserved specimens.

Microbial Co-Infection Rates in Black-Legged Ticks (*Ixodes scapularis*) and Small Mammal Hosts in Central Wisconsin

Amanda Prigan*♦ and Bailey Bodeen♦
(Dr. Gregory Adler)
Biology
Poster Presentation (P11)

Lyme disease is an emerging tick-borne disease of humans that has increased explosively in eastern North America over the past 30 years. The causative agent is the bacterium *Borrelia burgdorferi*, which is transmitted by deer ticks (*Ixodes scapularis*) that have fed on an infected host. Lesser-known infectious agents, including *Anaplasma phagocytophilum* and *Babesia microti*, also may be transmitted by deer ticks. Co-infections are poorly known but likely to have important implications for transmission dynamics of these agents. To investigate this phenomenon, mammal tissue, replete ticks that have fed upon small mammals, and questing ticks are being collected at Hartman Creek State Park in Central Wisconsin. These samples are screened for the agents using standard molecular techniques. Preliminary results show that co-infections occur in this system. Of 46 questing ticks, five (11%) were co-infected with *B. burgdorferi* and *A. phagocytophilum* and five (11%) with *B. burgdorferi* and *B. microti*. One (2%) questing tick was positive for all three organisms. Of 34 mammals screened, two (6%) were co-infected with *B. burgdorferi* and *B. microti*. Mammals have not been tested yet for *A. phagocytophilum*, and replete ticks have not been tested for any agent. This study will have important implications for human health.

Expression of Intestinal Cytokines throughout the Pre-Hibernation Fattening Period in Ground Squirrels

Laurana Rudenas* (Dr. Courtney Kurtz)
Biology
Poster Presentation (P12)

Hibernating mammals spend the active season fattening for the subsequent winter. This rapid weight gain is similar to that seen in human obesity. In humans, this is thought to be caused by changes in gut microbiota that lead to low-grade inflammation of the gut, which spreads to other organs including adipose tissue. Once metabolic inflammation is established, insulin resistance often develops. We studied ground squirrels throughout the fattening season and collected samples of jejunum and ileum for cytokine analysis by ELISA. We found that pro-inflammatory cytokine levels were high throughout the active season. IL-6 levels significantly increased, by as much as four times, from the beginning to the end of the fattening season. Despite this, no change in the levels of IL-10 were observed. Our data suggest that the low-grade inflammation of the gut seen in obese humans is mirrored in the ground squirrel model. Ground squirrels, therefore, may be an appropriate model for the role of the microbiota and intestinal immune system in rapid weight gain, such as that seen in obesity.

The Genome of the Scarab, *Onthophagus taurus* Encodes an Expanded and Divergent Suite of Odorant Receptors

Troy Schneider (Dr. Robert Mitchell)
Biology
Poster Presentation (P13)

The bull-headed dung beetle, *Onthophagus taurus*, is a species in the family Scarabaeidae and a specialist on animal droppings. Adult *O. taurus* locate and bury mammalian excrement, which will provide food for their offspring in underground burrows. Dung is an ephemeral and unpredictable resource, and we hypothesized that *O. taurus* requires a complex olfactory system to quickly identify excrement over long distances. We tested this hypothesis by describing the family of odorant receptor (OR) genes present in the genome. Each OR gene produces a receptor protein sensitive to different chemical compounds, and odors are detected by a specific combination of these activated receptors. We annotated the public sequence data from the *O. taurus* genome project by comparing candidate genes to a database of known ORs from related beetles. Our methods revealed 203 OR genes encoded in the genome, of which over half (128) formed a single, rapidly evolving subfamily. The number of ORs we describe is considerably more than that known from any other beetle except for *Tribolium castaneum* (259 ORs), another species that relies on scavenged food. Our results support the hypothesis that *O. taurus* has a highly complex olfactory system as demonstrated by the substantial amount of ORs present in the genome. We also suggest the rapidly evolving subfamily of receptors as a target for future research, because it may be tracking and co-evolving with changes in the excrement produced by native animals.

Assessing Levels of Total Mercury in the Endangered Whooping Crane

Paige Smith*♦ (Dr. M. Elsbeth McPhee)
Biology
Poster Presentation (P14)

Whooping cranes (*Grus americana*) are one of the most charismatic and endangered birds in North America. Currently, there are 583 wild individuals found in four populations, one of which is the eastern migratory population (EMP) that breeds in central Wisconsin. Unfortunately, reproductive success in the EMP has been close to 0%. I hypothesized that mercury, an anthropogenic environmental contaminant, hinders the cranes' ability to rear offspring to independence. This hypothesis stems from the fact that (1) mercury has been measured in Wisconsin breeding grounds and (2) when methylated, mercury can alter a wide range of behaviors including parental care, foraging, and reproductive success. To test this, I measured total mercury in three whooping crane populations: Aransas-Wood Buffalo (AWB), the EMP, and captive birds from the International Crane Foundation (ICF). This allowed me to compare birds of known successful reproduction (ICF), birds of presumed successful reproduction (AWB), and birds of known low reproduction (EMP). If my hypothesis is true, I predict that mercury will be higher in the EMP than in the AWB and ICF. Preliminary results show elevated levels of mercury in the EMP as compared to the the AWB and ICF.

Examination of Adipose Immune Changes in Fattening 13-Lined Ground Squirrels (*Ictidomys tridecemlineatus*)

Michelle Sonsalla*♦ (Dr. Courtney Kurtz)
Biology
Poster Presentation (P15)

Obesity is a significant worldwide health issue. During the pathogenesis of obesity, drastic changes in the populations of immune cells in white adipose tissue (WAT) occur, resulting in chronic, low-grade inflammation that leads to fattening and insulin resistance. Thirteen-lined ground squirrels (*Ictidomys tridecemlineatus*) naturally fatten in preparation for hibernation and thus we propose that they may be a good model for weight gain in humans. In order to determine the inflammatory state of adipose tissue, adipose was collected throughout the active season and analyzed using qRT-PCR for specific markers to estimate the relative populations of M2 macrophages and subsets of T-cells. In the intra-abdominal WAT, populations of M2 macrophages and Tregs peaked 17 weeks after emergence then decreased. In the mesenteric WAT, M2 macrophages and TH2 cells peaked 19 weeks after emergence. These data suggest that changes in adipose immunity during the development of obesity in 13-lined ground squirrels follow the same progression as in other animal models, displaying levels of chronic, low-grade inflammation during obesity.

Engineered Terpene Production in the Cyanobacterium *Synechococcus* sp. PCC 7002

Travis Stoeger* (Dr. Toivo Kallas)
Biology
Poster Presentation (P16)

Microorganisms such as cyanobacteria have the potential to produce renewable fuels and bioproducts. Cyanobacteria use sunlight energy to capture atmospheric carbon dioxide making them ideal candidates for genetic modification with the goal of producing fuels and other valuable organic compounds with a low environmental impact. Cyanobacteria can be genetically engineered to produce terpene compounds such as isoprene and pinene via the methylerythritol phosphate (MEP) pathway. Terpenes can be used to make biofuels, polymer products, and medications. The goal of this project is to produce the terpenes β-pinene and L-limonene, which are precursors for jet fuel and biolubricants, by introducing plasmid DNA molecules containing the gene *bPinS*, for β-pinene synthase, or *limS*, for L-limonene synthase—the enzymes that produce pinene and limonene, respectively—into the chromosome of the cyanobacterium *Synechococcus* PCC 7002. These plasmids were first replicated in *Escherichia coli* bacteria, isolated, and then incorporated, by a physiological DNA uptake mechanism, into *Synechococcus*. Synthesis of these terpenes was measured by gas chromatography (GC) and GC-mass spectrometry. Pinene production has not been achieved yet, possibly because of its toxicity. Limonene production has been achieved with a plasmid provided by a colleague and further bioengineering is in progress to enhance productivity.

Brain Structure As a Novel Indicator of Pheromone Use in Longhorned Beetles (Coleoptera: Cerambycidae)

Doua Yang♦ (Dr. Robert Mitchell)
Biology
Poster Presentation (P17)

Longhorned beetles (Family Cerambycidae) are a family of insects that feed in the stems and woody tissues of plants and include many destructive forest pests. Such pests might be effectively monitored and managed by attractive, pheromone baited traps, but not all species produce pheromones. Extensive research is necessary to prove pheromone usage and identify the active compound before its use in monitoring. My research objective is to accelerate pheromone research in longhorned beetles by identifying neuroanatomical characteristics associated with pheromone use. Insects detect pheromones and other odors via specialized regions of the brain called glomeruli, which are linked to a specific odor. Glomeruli linked to attractive pheromones are many times larger and are known as macroglomeruli. I will compare multiple species of longhorned beetles known to produce pheromones and those believed to not produce pheromones to understand if and how macroglomeruli associate with pheromone production. If macroglomeruli are associated with pheromone use, they would be a novel indicator to reveal whether a new species produces pheromones, and thus provide immediate direction in future research on its chemical ecology.

Kinetics of Formation of Struvite from Wastewater

Zac Chambers (Dr. Jennifer Shuttlefield Christus)
Chemistry
Poster Presentation (P18)

The mineral struvite (magnesium ammonium phosphate hexahydrate $MgNH_4PO_4{\cdot}6H_2O$) is a crystalline mineral that occurs naturally in decomposing organic materials and has been observed in treated wastewater sludge. The accumulation of struvite on pipe walls and equipment surfaces has plagued wastewater treatment plants to great expense. In Miami-Dade, they estimated the costs of fixing and replacing pipes due to struvite damage at $30,000 a month. If captured prior to the treatment process, the formation of struvite could potentially provide a pathway for the sustainable recovery of the major nutrients nitrogen (N) and phosphorus (P). To date, little is known about the formation mechanism of struvite. While this mineral has been widely studied in the field of engineering, the chemical and kinetic understanding is lacking. Therefore, the formation of struvite in a simulated wastewater solution will be investigated. This will be done to minimize the potential variables present in order to better understand the mechanism and determine the kinetics of the reaction. To do this, inorganic precursors (MgO and $MgCO_3$) will be reacted with dibasic ammonium phosphate solutions ($[NH_4]_2HPO_4$) (DAP), which has been shown previously by Kirinovic et al. to produce struvite under relevant conditions.

Effects of Polymers on the Properties of Silica Sol-Gels

Meg Duffield (Dr. Jennifer Mihalick)
Chemistry
Poster Presentation (P19)

The sol-gel process is a reaction that creates glass at room temperature, which is not seen in traditional glass making. Painting with glass is possible by adding poly(vinyl) alcohol (PVA) to the sol-gel mixture. Silica can cross-link and polymerize producing a porous product within the PVA matrix. Absence of high temperatures allows the addition of the PVA and synthetic dyes to the silica precursors. The intermediate of the reaction is “gel-like” before it becomes a solid amorphous glass product, allowing it to be spread like a paint. With the addition of color from the dyes, an aesthetically pleasing, uniform, and transparent silica sol-gel is produced. In this study we varied the concentration and molecular weight of the PVA and observed the effects on viscosity, gelling time, and adhesion to glass and plastic surfaces. The adhesion to the glass platform is maximized by the heavier PVA and a higher PVA:silica ratio that increases the viscosity of the glass. By eliminating the ethanol solvent often used in sol-gel, the product has minimum to no shrinkage.

The Effect of Acid Strength on Catalytic Conversion of CO_2 to Value-Added Chemicals

Kara Gillette (Dr. Sheri Lense)
Chemistry
Poster Presentation (P20)

The ability to recycle carbon dioxide (CO_2) would allow this greenhouse gas to be converted into value-added chemicals such as plastics. We are studying how to optimize catalytic conversion of CO_2; specifically, how the strength of an acid near the site of catalysis affects CO_2 conversion.

Inhibition of Phosphorylation of Histone H3 During G1 Chromosome Condensation in HeLa Cells

Ryan Koehler* (Dr. James Paulson)
Chemistry
Oral Presentations Session I
Reeve Union Room 220 (8:30 – 9:30 a.m.)

Chromosomes are tightly wound and compacted complexes of DNA and proteins. The major protein components of chromosomes are called histones. When cells divide, the chromosomes (consisting of DNA and proteins) must be condensed into compact structures so that the two copies can be distributed to the two daughter cells. The mechanism cells utilize for chromosome condensation is not fully understood, but it has been proposed that it involves phosphorylation of (i.e. addition of phosphate groups to) the chromosomal proteins known as histones H1 and H3.

It has been shown that "prematurely condensed chromosomes" (PCCs) can be induced by treating cells with a compound called calyculin A at any point in the cell division cycle, and that PCCs induced in G1-phase (the period after mitosis) lack histone H1 phosphorylation. This shows that H1 phosphorylation is not required for chromosome condensation.

My thesis is that histone H3 phosphorylation is not required for chromosome condensation. This will be tested by inducing G1-phase PCCs in the presence of compounds that block H3 phosphorylation in HeLa cells (a human cancer cell line).

Determining the Function of a Small Protein Involved in the Regulation of Manganese Homeostasis in *E. coli*

Nathan Witman (Dr. Lauren Waters)
Chemistry
Poster Presentation (P21)

Manganese is an essential transition metal involved in bacterial pathogenesis. It is essential in the production of co-factors that allow bacterial survival at the host-bacteria interface. Bacteria that cannot maintain a proper level of manganese are less virulent. MntS is a specific protein in *E. coli* involved in manganese homeostasis. This study looks at the essential amino acids within MntS in the hopes of determining its function. To do this, we used three different mutants of MntS. We detected the effect of different manganese concentration in the presence of the MntS mutants, the presence of MntS protein-protein interactions, and the presence of MntS protein in our samples. This was done through three specific techniques: the manganese sensitivity assay, which measures cell viability at different concentrations of manganese; the two hybrid assay for detecting MntS protein-protein interactions; and western blotting for measuring specific MntS concentrations. This study is done in the hopes that this knowledge could aid in the implementation of new treatment for pathogenic bacterial infections.

Producing Tactile Protein Models for Chemistry Education

Jeshanah Zolkowski* (Dr. Christopher Bianchetti and Dr. James Paulson)
Chemistry
Poster Presentation (P22)

Teaching with interactive models can allow students to not only gain a deeper understanding of the role of protein structure in biochemistry, but also develop spatial skills, leading to success in academia and the workplace. This research aims to optimize protein model use in chemistry education. Phase one of this project will investigate the properties of molding and 3D printing materials to optimize model accuracy and maximize the amount of information that can be conveyed in a protein model. The molding process will allow multiple protein models to be made, giving more students the opportunity to handle them. Phase two aims to design activities that use protein models to communicate structural characteristics of enzyme-substrate interactions and show how electrostatic interactions affect protein folding.

Gender Bias among College Students

Sheena Gilbert (Dr. Victoria Beck)
Criminal Justice
Poster Presentation (P23)

Research has indicated that that a professor's gender makes a difference when students evaluate university

courses, with female faculty receiving lower ratings. Some have gone as far as to suggest that one potential reason, for differences in faculty ratings across gender, is that male faculty are better at lecturing/teaching. However, prior research has not examined whether student gender biases exist prior to course selection. The purpose of the current study is to explore if student gender bias toward faculty exists, prior to enrolling in university courses. Using an experimental design, 235 students were randomly assigned to receive a syllabus for a male or a female professor, who have the same credentials and are teaching a statistics course. Results will be discussed.

"Realms of Love": Gender and Language Fluidity in Tennyson's *In Memoriam*

Alyssa Herman* (Dr. Pascale Manning)
English
Oral Presentaions Session II
Reeve Union Room 306 (8:30 – 9:15 a.m.)

My project addresses a trend in the criticism that takes up Alfred Tennyson's elegy *In Memoriam* (1850). In the 1960s and 1970s, scholarship of *In Memoriam* began to focus upon the poem's expression of homoerotics and the broader topic of love and desire between men, a tendency that often led to an inquest into Tennyson's own sexual leanings. While these readings were radical at the time, and remain valuable, recent scholarship has moved beyond this limiting dichotomy (homosexual v. heterosexual) to embrace a more nuanced understanding of what the poem communicates about desire and about the poet himself. However, even recent scholars have made the mistake of taking the love between men in the poem and seeing it as testimony about the poet. I contend that to read the poem as biography reifies the poet as the speaker and does both the poet and poem a great disservice—the risk is one of limitation. *In Memoriam* is a poem that speaks to a complex love between men that cannot be easily defined and equated with the poet himself. I explore the ways in which this profound love between men manifests in the poem: specifically, in the meter and rhyme scheme; the forms of elegy and love poetry that the poem adopts; and the polyvocality and poetic language of the poem that collapses Victorian gender binaries. Additionally, I consider how the poem itself defies the temptation to read poetry as biography and how *In Memoriam* uses ambiguously gendered language and an inconsistent, polyvocal speaker to encompass complex ideas about friendship, love, and desire between men that oppose definition and limitation.

Questioning *Post*coloniality: The Patriarchal Colonization of Irish Women in Edna O'Brien's 1990s Trilogy

Brynne Norgard* (Dr. Stewart Cole)
English
Oral Presentations Session II
Reeve Union Room 306 (8:30 – 9:15 a.m.)

In the struggle for independence, colonized people often create a national identity that they use to divorce themselves from the identity foisted upon them by their oppressors, and once independence is achieved, they can cling to that identity to maintain their independence. In the context of Ireland's fight for freedom from British rule, much of the Irish national identity was centered on rigidly defined traditional gender roles, particularly for women. In my presentation, I examine Edna O'Brien's postcolonial 1990s trilogy in terms of how the novels illuminate the myriad ways in which this conflation of gender roles and national identity can and does have significant consequences for those who do not conform. Using the novels, I demonstrate how three women face ostracization by their communities because of their actions, which the communities deem un-Irish and thus threatening to Irish independence. The women are unable to make decisions about their own lives and bodies without backlash, effectively restraining and sabotaging the growth not only of the individuals but of Ireland as a whole. O'Brien's novels thus show us how perceptions of gender and national identity in postcolonial contexts can be detrimental to the very people they are meant to free.

Subadult Tyrannosaur Feeding Traces on a Partial Hadrosaurid Skeleton

Karsen Daus (Dr. Joseph Peterson)
Geology
Poster Presentation (P24)

A partial hadrosaurid skeleton was collected from the Upper Cretaceous Hell Creek Formation of southeastern Montana consisting of weathered pelvic elements and two caudal vertebrae. One vertebrae possesses three v-shaped punctures on the ventral surface of the centrum. The punctures show no signs of healing, and are inferred to have been created post-mortem. Based on the shape and orientation of the

punctures, they are hypothesized to be bite marks from a large theropod dinosaur, such as *Tyrannosaurus rex*. To test this hypothesis, the cross-sectional morphology and tooth spacing of adult and juvenile *Tyrannosaurus* maxillae were compared to the punctures on the afflicted vertebra. Teeth of adult *Tyrannosaurus* were found to be too large and widely spaced to have produced the punctures. However, the teeth of a subadult *Tyrannosaurus* produced similarly shaped and spaced punctures, suggesting the bite was caused by a juvenile *Tyrannosaurus*. While feeding traces attributable to tyrannosaurids are well-documented, the identification of subadult *Tyrannosaurus* feeding traces adds insight into the role of subadult theropods in Cretaceous ecosystems.

Raman Spectrometry of Metamorphic Rocks from the Penokean Orogeny

Phillip Kaltenbach* (Dr. Benjamin Hallett)
Geology
Poster Presentation (P25)

This project was focused on the metamorphic history of parts of the Upper Peninsula of Michigan and northern Wisconsin where the Penokean Mountain building event occurred approximately 1.8 billion years ago. Laser Raman Spectrometry was used to measure the pressure of garnet growth in metamorphic rocks from the interior of this ancient mountain belt. The Laser Raman Spectrometer was used to compare the pressure difference between quartz inclusions trapped in garnet crystals and their host garnet. The quartz pressure was measured by comparing the Raman scattering results against a standard of quartz that is not trapped within garnet. PEN01 is a garnet-bearing pelitic schist with a composition of quartz, + biotite, + muscovite + sillimanite + garnet. Raman Spectrometry constrains the nucleation and growth of garnet and at metamorphic conditions of approximately 5.6 ± 1.2 kbars (a burial depth of 15–22 km) and an estimated temperature range of 495–530° C. This is significantly lower than the peak pressure attained in the nearby Watersmeet area, suggesting a complex tectonic history leading to variations in crustal thickness for the region.

Spatial and Temporal Variability of Nitrates in the Groundwater of Dunes Lake Wetland in Door County, WI

Kyle Kottas and Elijah Schukow
(Dr. Maureen Muldoon)
Geology
Poster Presentation (P26)

The bedrock found in Door County is highly fractured Silurian dolomite with thin soil cover. In this system, groundwater can move from tens to hundreds of feet per day. These features make Door County vulnerable to groundwater contamination from surface infiltration. Contaminated groundwater discharging into wetlands can affect the ecology of the area by impacting native plants and animals. We sampled from seven springs and streams to assess spatial variations in nitrate of water in the Dunes Lake area. Using an Oakton probe, we measure the pH and specific conductance of the sampling sites. Variability of nitrate concentrations with time is assessed by monthly sampling from December to May.

Our project is part of a larger study being conducted by the Wisconsin Geologic Survey and the Nature Conservancy. The larger project is assessing the human impacts on groundwater by sampling for indicators of septic system inputs and agricultural chemicals on a quarterly basis. Our monthly nitrate data are important to capture the more short-term variations in water quality.

Nitrate analyses are done using a spectrometer. Samples collected from December to February indicate significant spatial variations in nitrate values. Nitrate values from the seven sample sites are consistent over time.

Exceptional Preservation of an Oligocene (ca. 28 Ma) Invertebrate Marine Benthic Fauna, South Island, New Zealand

Monica Preston* (Dr. Eric Hiatt)
Geology
Poster Presentation (P27)

Marine carbonate-secreting organisms form limestone, and their skeleton composition can record oceanographic conditions. Biomineralization in calcareous invertebrates results in precipitation of the minerals aragonite and calcite. Aragonite is chemically unstable when exposed to meteoric water and, as a result, is dissolved and replaced by calcite, usually within one million years. In contrast, our study has shown that aragonite shells dating to the Oligocene (28 million years ago), Otekaike Formation of New Zealand, are well preserved.

We used X-ray diffraction to document minerals of skeletal elements and petrography to study microstructure preservation. We focused on aragonite skeletal elements (gastropods, scaphopods, bivalves, and annelid worms), which show minor alteration and recrystallization of the microstructure.

By studying the isotopic fractionation of oxygen-18 and carbon-13 within the shells of these organisms, we were able to estimate chemical alteration. Aragonite shells exhibit a trend toward meteoric values but are little altered. Their d13C values range from 1.78 to 3.59‰ and d18O range from 0.62 to 2.06 ‰, both with respect to the PDB standard. Organisms composed of calcite have undergone even less alteration. Our analyses suggest little interaction with meteoric water due to rapid uplift and semi-arid climate conditions soon after deposition to today.

Crustal Processing of Primitive Basalts in the Southern Cascades, California

Nicole Salchert (Dr. Jennifer Wenner)
Geology
Poster Presentation (P28)

We present geochemical data and mineral chemistry for primitive basalts from the Poison Lake Chain (PLC) in the southernmost Cascades. The PLC encompasses 39 units that have been subdivided into nine geochemical groups. This study focuses on the five basalt units of the Stephens Campground group (BOSC). Major and trace elements from BOSC reveal primitive basalt compositions and evidence of crustal processing. Unlike other processed samples in the PLC, major elements are highly varied. Although major element compositions overlap for all BOSC units, minor trace elements and their ratios show two distinct trends. Units 1–3 trends are flat with little variability; units 4 and 5 show a range of compositions. Similar patterns are observed in mineral textures among the samples in this study: although both units contain phenocrysts of olivine, plagioclase, and clinopyroxene, units 1–3 are dominated by small monomineralic clusters of plagioclase whereas units 4 and 5 are dominated by large polymineralic clusters of olivine, plagioclase, and/or clinopyroxene. We interpret these differences to reflect multiple and variable crustal processes. Furthermore, comparisons of basalts in this study with others in the PLC suggest that the BOSC may have experienced different processes for units 1–3 than for units 4 and 5.

Phosphate and Iron Minerals of the Marinoan Serra do Caeté Formation, Mato Grosso, Brazil: Diagenesis of a Glaciomarine Biochemical System

Maxwel Schwid (Dr. Eric Hiatt)
Geology
Oral Presentations Session I
Reeve Union Room 220 (8:30 – 9:30 a.m.)

Phosphate in marine sediments is a by-product of chemosynthetic bacteria, and its presence is used to infer nutrient and oxygen levels in ancient oceans. Phosphate is an important economic resource for food production and industry and is vital in all living organisms. Sediments rich in phosphate are typically a phenomenon of the last 0.54 billion years and are not found with economic iron deposits. These two biochemical minerals occur together in 640-million-year-old rocks from Mato Grasso state, Brazil. This succession provides an unparalleled view of the last Snowball Earth ice age. Post-depositional hydrothermal alteration overprinted this mineral assemblage. Petrographic, X-ray diffractometry and scanning electron microscopy analyses allowed us to determine the alteration sequence, replacement relationships, and conditions that these sedimentary rocks experienced.

Most of the section is dominated by glaciomarine sediments with scattered dropped stones. Iron-rich sediment was deposited as hematite (oxidized) and as siderite (reduced iron carbonate). Phosphate is present as carbonate-fluoroapatite formed in microbial layers and crystals representing remobilized primary phosphate. These primary phases resulted from fluctuating oxygen levels at the seafloor. Secondary minerals include apatite, illite, chlorite and pyrite, and dolomite, all products of burial alteration. Late-stage oxidative weathering added another layer of alteration complexity.

Effects of Micro-Organisms on Fossil Structure and Chemistry: An Example from the Terrestrial Gastropod *Poecilozonites* of Bermuda

Brooke Vander Pas* (Dr. Eric Hiatt)
Geology
Poster Presentation (P29)

Chemical analyses of fossil shells are often used to determine ages and paleo-climate conditions. Due to biochemical processes of shell formation, proteins and organic components remain, which micro-organisms consume by boring into the shell. Micro-organisms, including fungi, bacteria, and algae, contribute to this process by creating microborings. Evidence of these processes is preserved in the shells of the terrestrial gastropod *Poecilozonites sp*. that span the Pleistocene to Holocene rock record of Bermuda.

Using a collection of shells from the Smithsonian Institute and samples we collected, we analyzed samples that span the last half-million years using petrographic, scanning electron microscopy (SEM), and stable isotope analyses. We tested whether extensive microborings have affected the shells' chemistry from the introduction of carbon-12 via microbial processes. Isotopic analyses of both oxygen and carbon isotopes revealed an average $\partial^{18}O$ value of -0.15‰ PDB and $\partial^{13}C$ of -9.05‰ PDB with ranges of -1.21 to 0.80 and -11.10 to -7.35, respectively, with the low C-13 values suggesting a dietary impact. Shell alteration results in rapid degradation of calcium carbonate, releasing CO_2 to the atmosphere. Coupling this with the results from the petrographic and SEM analyses, we were able to document the effect of microborings on shell chemistry.

Determining the Utility of Using a Sentinel Well to Predict Recharge across Regional Wells in a Fractured Dolomite Aquifer

Patrick Wanzeck (Dr. Maureen Muldoon)
Geology
Poster Presentation (P30)

The transport of human and bovine pathogens, and chemical contamination from the ground surface, through the fractured dolomite aquifer and into taps of Kewaunee county residents has been an issue for decades. Potentially harmful pathogens from manure spread on agricultural fields and septic systems have been observed in water samples from domestic wells. The levels of pathogens are known to vary with precipitation and aquifer recharge, with peak levels occurring during large recharge events. Because it is not possible to continuously monitor these pathogens at every well, it is important for the health of Kewaunee residents that another method is found to monitor when potentially harmful pathogens may be present.

We assessed the correlation between the sentinel wells and residential wells by examining water level, specific conductance, pH, chloride, and dissolved organic matter data from sensors placed in non-pumping sentinel wells and residential wells, along with local weather data. This study finds that chemical indicators of recharge at a sentinel well are indicative of recharge within other regional wells and will prove useful in monitoring regional recharge-related aquifer contamination.

eMOTIONal

Cam Anderson (Dr. John Mayrose)
Music
Oral Presentations Session V
Reeve Theatre 307 (9:30 – 10:30 a.m.)

In this talk, I will discuss the process of composing my original musical composition *eMOTIONal* for two percussionists and fixed media, and will culminate in a recorded presentation of the composition. As a composer I am highly influenced by climate change and planet conservation and try to address these issues in my music. The electronics in *eMOTIONal* are mostly drawn from and inspired by ocean waves, which are processed through various digital audio techniques including granular synthesis, band-pass vocoding, and comb filtering. I have been fascinated by the motion of waves and find it interesting that there can be such chaos in the sea, but that the same body of water will also flow together as one through waves. I believe that this can be a powerful metaphor for humanity in our struggle to care for the planet. Right now, we are all concerned about our own agendas and acting independently, but if we can find a way to act together now, there may yet be hope for us to make a change. Similarly the two percussionists and electronics ebb and flow between moments of independence and cohesion before coming together at the climax of the work.

HUM WITHDRAWN

Cam Anderson and Mason Lee (Dr. John Mayrose and Dr. Alison Shaw)
Music
Performance Presentations
Reeve Ballroom 227C (8:30–9:45 a.m.)

In *Hum*, two percussionists play eight tuned electric conduit pipes each, and only four pitch classes a fifth apart appear in the piece: B-flat, F, C, and G. The title refers to the low hum that resonates for each pipe.

The composition moves from steady, veiled tremolos to more articulate, dance-like music. Like much of Dr. John Mayrose's percussion music, the ratios between phrases and sections are taken from the Fibonacci sequence. *Hum* was commissioned by and written for Dr. Mayrose's students Cam Anderson and Mason Lee. The performance and practice of *Hum* was in close collaboration with Dr. Alison Shaw, UW Oshkosh percussion faculty and chair of the Music Department. The piece premiered on April 21 in the UW Oshkosh Music Hall.

Triumph and Love in Debussy and Schumann

Jon Glowcheski (Dr. Eli Kalman)
Music
Performance Presentations
Reeve Ballroom 227C (8:30 – 9:45 a.m.)

The two pieces for comparison are "Prelude" from Suite Bergamasque by Claude Debussy, and Novelette No. 1 by Robert Schumann. Both works, at first listen, appear to be in very contrasting styles, but they also share certain elements. The first of these is a tone of heroism. In the Novelletta, this quality is displayed strongly throughout the opening and ending sections, which are evocative of a military march. In the Prelude, the opening unfolds as prideful, with steady, metered chords leading up to a climax. Although written in different styles, the Impressionistic French Prelude and the Romantic German Novelette share these common aspirations. The second shared element in both pieces is the inclusion of a love-duet scene in poetic interludes of high lyricism. The Prelude has an abundance of musical motives introduced with spontaneity, while in the Novelette, the unpredictable is present at a lesser degree. The aesthetic of these works is completely different. Instrumental music is abstract in its emotional messaging as it enables a higher freedom of expression. In such compositions as the ones compared here, the musical discourse replaces words with a universal language of sounds.

German Lieder, Wolf

Gail Goodacre (Dr. Anna Hersey)
Music
Performance Presentations
Reeve Ballroom 227C (8:30 – 9:45 a.m.)

For this presentation, I will be performing a set of four German songs composed by Hugo Wolf and assisted by Dr. Kirstin Ihde on the piano. These pieces have a special place in my heart because they tell the stories of joys and struggles that I am able to relate to in my own life. "Auch kleine dinge" tells of how some of the most beautiful things in life are the smallest and simplest. It reminds me that joy and beauty lies in these things. "Gebet" is a prayer that expresses the phrase "Whatever the Lord gives, I will adore because it is from him." "Lebe wohl" is about someone who has experienced heartbreak and has had to say "farewell" many times and feel the pain of goodbye. "Verborgeneheit" says, "Let me be, o world! Do not tempt me with offerings of love. Leave this heart alone to experience its own joy, its own sorrow." These four selections offer meaningful relevance to its audience and are easily related to by all.

Amor

Molly Hennig (Dr. Anna Hersey)
Music
Performance Presentations
Reeve Ballroom 227C (8:30 – 9:45 a.m.)

"Amor" is part of a collaboration between American composer William Bolcom and poet and playwright Arnold Weinstein. The two worked together in 1977–1978 to create a song cycle of six pieces, titled "Cabaret Songs." (The name refers to the obscure vocal genre that the pieces fall into.) "Amor," originally set to bring the musical narrative to a close, was not the end of these compositions, however. Three more volumes of "Cabaret Songs" were written up until 1996. "Amor," though part of a cycle, stands very on its own in present day recitals and concerts. The piece's charismatic melody and Latin-inspired rhythm make it one of the most popular of Bolcom and Weinstein's work.

I chose to perform "Amor" due to its uniqueness from classical vocal repertoire and its ability to connect with most audiences. The tone is light and catchy—it almost reads like a musical theatre piece—while still presenting plenty of classical technique in its performance. The song itself can be interpreted as a narrative; when performed, it resembles a casual story being told to a friend with confidence and humor.

Spring for Joy: A Composition and Recording for Steel Pan

Brandon Holl* (Dr. Elizabeth DeLamater)
Music

Oral Presentations Session V
Reeve Theatre 307 (9:30 – 10:30 a.m.)

Spring for Joy is an original composition for Steel Pan. This project began in 2015 when my faculty advisor, Dr. Elizabeth DeLamater, suggested I write a steel pan piece for the UWO steel band. After writing the piece, it became clear that I had written a complicated piece. Eventually, in the fall of 2017 Dr. DeLamater suggested that I apply for a research grant to get my piece recorded by professional steel pan players. It was a little while later that I received the grant, and I was eager to finally hear my piece performed and recorded. I had never worked with professional musicians in a recording session, and this was intimidating at first. The recording process was very rewarding for me, as I learned to work with these performers in a professional setting. I was able to run the recording session and oversee the whole process. None of this could have happened without the help of my advisor, Dr. Elizabeth DeLamater, and I am thankful to see my hard work in its final form.

Etude in e minor by Pius Cheung

Emma Jensen (Dr. Alison Shaw)
Music
Performance Presentations
Reeve Ballroom 227C (8:30 – 9:45 a.m.)

Pius Cheung, dubbed a "neo-Romantic marimba virtuoso," is known as a highly decorated marimba soloist. His mastery, passion, and intensity can be heard not only in his playing but also in his numerous compositions. In "Etude in e minor," we hear a main theme followed by several variations, concluding with a roaring finish. To quote the composer on this etude: "Compositionally, this piece is very simple, but it is one of my most honest works." This piece is filled with heart-wrenching emotion, full-bodied melodies, and rapid chromatic explosions—all played under a relatively simple theme that clearly demonstrates the epitome of neo-Romanticism. "Etude in e minor" demands absolute mental, physical, and emotional honesty and, for that reason, it is one of my favorite pieces to perform.

Infrared Nova for Two Electric Guitars and Percussion

Ryan Thomas (Dr. John Mayrose)
Music
Oral Presentations Session V
Reeve Theatre 307 (9:30 – 10:30 a.m.)

My presentation will include a talk about composing, performing, and recording an experimental piece of music I wrote called *Infrared Nova* for two electric guitars and percussion. In addition to traditional notation, this composition utilizes experimental graphic notation where performers interpret abstract lines. Additionally, all instruments use extended and experimental techniques to create unconventional sounds. These techniques include using screwdrivers and pencils to play guitar and bowing cymbals. It took roughly three months to create the finalized score.

After this piece was completed it was performed twice on the campus and recorded. The first performance was at the UW Oshkosh Composition Studio Recital and the second for the UW Oshkosh Sounds Like Now new music group. After performing this work, the piece was recorded in the UW Oshkosh recording studio in January 2018. To achieve this the ensemble recorded several takes of sections, and I edited the best takes to create a final product that is professional quality.

Saxophone Quartet in Stereo

Edward Uttendorfer (Dr. John Mayrose)
Music
Oral Presentations Session V
Reeve Theatre 307 (9:30 – 10:30 a.m.)

In this presentation I will discuss the process of composing my composition *Saxophone Quartet in Stereo*. In this piece of music, one small musical motive is developed throughout the composition. This presentation will explore the challenges I encountered and compositional techniques I utilized. Specifically, I will explore the pre-composition process, which involved creating a short musical motive and expanding it without losing its musical significance in the composition as a whole, lengthening sections and developing completely new. This process required an entire breakdown of my original motive into two main areas: rhythm and pitch. I will explore how variations in rhythm in unexpected places inspired other unique ideas, and how the use of different but related pitches led to the creation of complex harmonies. The practice of pre-composition is tedious but the results can be phenomenal. The talk will culminate with playing a recording of a recent performance of the composition. I hope this presentation will inform artists and provide an approach to dealing with writer's block.

The Impact of the YMCA LIVESTRONG® Program for Cancer Patients and Survivors

Molly Schumacher*♦(Dr. Paula McNiel)
Nursing
Oral Presentations Session III
Reeve Union Room 221 (8:30 – 9:15 a.m.)

Cancer is a disease and diagnosis that burdens many individuals across the nation. Subsequent treatment with chemotherapy, radiation, and/or surgical methods can produce immediate and delayed side effects that can manifest as long-term physical or psychosocial impairments. This is especially taxing on cancer survivors, and can negatively impact their overall quality of life (QoL). Exercise rehabilitation has been demonstrated to improve strength, cardiovascular function, flexibility, balance, cancer-related fatigue (CRF), rates of depression, and QoL in most participants. Community-based programs, such as the YMCA LIVE**STRONG**® Program, offer access to such services in a cost-effective, multi-modal fashion. The objective of this mixed methods study was to determine the clinical significance of pre- and post-exercise rehabilitation physical and psychological outcomes of the YMCA LIVE**STRONG**® Program in Appleton, Wisconsin. Quantitative data suggests that physical measures of strength, balance, flexibility, and endurance, and psychosocial measures of anxiety, fatigue, sleep disturbance, satisfaction with social role, and pain interference were all significantly improved post-exercise rehabilitation *(p-value= 0.0)*. Six themes were also identified qualitatively through participant interviews that addressed experiences during the YMCA LIVE**STRONG**® Program. Findings highlight the importance of the need for increased healthcare referrals and cancer survivor participation in YMCA LIVE**STRONG**® Programs.

Suicide in the Paradigm of Indefinitely Extended Life

Madeline Hass (Dr. Evan Williams)
Philosophy
Oral Presentations Session III
Reeve Union Room 221 (8:30 – 9:15 a.m.)

If medical science is successful in finding cures for all diseases and treatments for all illnesses, then we will bring about a world in which everyone dies either in an accident or by suicide. This would mean the beginning of a paradigm of indefinitely extended life, and this change would necessarily affect our relationship with death. The purpose of this work is to clarify our thinking about suicide within the paradigm of indefinitely extended life. I argue that this context affects our calculus concerning the moral permissibility of suicide because of the ways in which it would increase our certainty about the eventual circumstances surrounding our deaths. While most of us would consider the endeavor of medical science morally good, the consequence of success would not necessarily be entirely positive and deserve consideration as long as we continue to support the efforts of medical science. Because death is an unavoidable reality that each of us will eventually face, it is vitally important that we understand potential changes to our relationship with this reality. Because the realization of this paradigm would affect an integral part of human experience, it is especially important that we understand the possible repercussions before they occur.

Rape: An Investigation into Consciousness, Identity, and Harm

Emma Link* (Dr. Larry Herzberg)
Philosophy
Oral Presentations Session III
Reeve Union Room 221 (8:30 – 9:15 a.m.)

This presentation focuses on drug-facilitated sexual assault (DFSA) by investigating the possible harms that are involved in various types of DFSA and non-DFSA. It focuses mainly on the harms involved in the following three cases: (1) a non-DFSA in which the victim is fully conscious, (2) a DFSA in which the victim is fully unconscious, but finds out about the assault after the fact, and (3) a DFSA in which the victim is fully unconscious, and never finds out about the assault at all. It also briefly discusses cases that are between (1) and (2). Sometimes the harms associated with type 3 cases are downplayed. However, after discussing Susan Brison's work on type 1 cases and Cressida Heyes' work on type 2 cases, I argue that there are unique harms associated with type 3 cases having to do with their detrimental effects on the victim's memory and identity.

Homogeneous Metallicity Estimates of F-Type Dwarf Stars and Open Clusters

David Morser* (Dr. Nadejda Kaltcheva)
Physics and Astronomy
Poster Presentation (P31)

Open stellar clusters provide useful information about the structure and chemical evolution of our Galaxy. In general, their population in spiral galaxies, like the Milky Way, is heterogeneous and can be divided into thin disk, thick disk and a halo component. The clusters forming these components differ in their overall characteristics, especially in their chemical composition and age. Our study is an attempt to develop a method for derivation of homogeneous parameters of open clusters that is based on Strömgren-H_β and Vilnius photometries. The accepted stratification of the open cluster system into populations is highly dependent on the estimates of clusters' characteristics. The purpose of this work is to test and outline a procedure for obtaining reliable and "mutually independent" estimates of the four main parameters of an open cluster—the interstellar extinction, cluster's distance, cluster's metallicity and cluster's age. Our study is especially useful in calculating homogenous metallicity estimates based on F-type dwarf and sub-dwarf cluster members. The derived homogeneous parameters are used to evaluate the association of the clusters in our sample in terms of the accepted stratification of the open clusters into populations.

Rocketry at UW Oshkosh

Christian Quiles and Mark Belanger
(Dr. Barton Pritzl)
Physics and Astronomy
Poster Presentation (P32)

We will present the results of rocket launches we have done at the University of Wisconsin Oshkosh. The steps involved in building rockets, including a more advanced dual-deployment model, will be detailed. The entire process involved a mix of physics, engineering, and chemistry. Although it is rocket science, we hope to show how anyone can be involved in launching rockets. We also discuss the future launches the group intends to make as well as how to improve on our future flights.

The RR Lyrae Populations in the Large Magellanic Cloud Globular Clusters Using OGLE IV Data

Nicholas Sevenz (Dr. Barton Pritzl)
Physics and Astronomy
Poster Presentation (P33)

We present the results of exploring RR Lyrae populations in the Large Magellanic Cloud globular clusters. RR Lyrae stars are pulsating stars whose properties may be used to determine things like distance and composition of the system to which they belong. For this survey we use data from the OGLE IV survey that observed the Large Magellanic Cloud galaxy. We use our results to compare the globular clusters system of the Large Magellanic Cloud to those belonging to the Milky Way Galaxy.

Cohort Participation: Impact on Personal Learning Networks

Caryssa Retrum♦ (Dr. Elizabeth Alderton,
Dr. Stephanie Bernander and Dr. Glady Van Harpen)
COEHS-Professional Counseling
Poster Presentation (P34)

Professional development is complex, especially for educators in rural settings. The purpose of the study was to examine personal learning networks (PLNs) of PK-12 educators enrolled in graduate school coursework. Research has shown PLNs are an avenue for individuals to connect to others, especially for educators in rural communities (Catapano, 2015). Additionally, there is a need for district and higher education partnerships with quality professional learning opportunities (Alleman & Holly, 2013). However, there are often not enough teachers in districts to economically warrant classes being held in one district, so cohorts are formed from multiple districts within geographical regions. This study examined the following research questions (a) what is the perceived impact of personal learning networks for educators in rural districts; and (b) does participating in a personal learning network impact educators' practice? The study found PLN participation created a significant impact for educators, especially those from rural districts.

Perspective Taking and Self-Other Differentiation in Geographically Close and Long-Distance Romantic Relationships

Sarah Barron, Kathleen Hodges, Elena Lerwick and
Jarad Strong (Dr. Anca Miron)
Psychology
Poster Presentation (P35)

Miron, Kulibert, Saltigerald, and Petrouske (2017) found that adopting the perspective of one's romantic partner who was in need of help increased "we" pronoun use in long-distance partners (LD) (i.e., more

self-partner merging or undifferentiating) but not in geographically close partners (GC). LD intimates may rely on "we" representations of their relationship in order to understand what their partner is feeling and thinking in a given situation. We explored the effect of perspective taking on self-partner differentiation. Participants (*N*=101; 49 GC and 52 LD partners) read a letter and imagined that the letter was written by their romantic partner who was supposedly having increasing difficulty adjusting to college. We measured relationship type (GC vs. LD), manipulated perspective taking (imagine-other vs. stay-objective vs. no instructions), and then measured self-partner distinctiveness using two self-other differentiation tasks (Aron, Aron, & Smollan, 1992; Batson et al., 1997). We hypothesized that perspective taking would lead to more self-other differentiation for GC intimates but not for LD partners. The perspective-taking manipulation led to more self-partner differentiation among GC romantic intimates in the imagine-other condition versus stay-objective condition. No such effects were observed among LD intimates. These findings suggest preliminary support for our romantic self-other differentiation hypothesis.

Reliability of Temperament in Late Talking Children

Madeline Bartels, Erin Seidler and Alec Smasal
(Dr. Sarah Kucker)
Psychology
Poster Presentation (P36)

Limited research has examined the relationship between temperament and late talking children. Late talking children are children identified in the lowest 25th percentile of productive vocabulary for their age with no other identified deficits or delays. Previous research using the Early Childhood Behavior Questionnaire (ECBQ), a highly reliable parent-reported measure of temperament, suggested that the temperament of late talking children is significantly different than their typically developing peers in each of the three domains of temperament: negative affect, surgency, and effortful control. The current study will continue this research through the use of Thin Slice Coding, a method of objectively scoring children on their temperament by watching three short clips of video and coding a child's temperament based on those clips. Through the use of Thin Slice Coding on the same dataset of 255 children between the ages of 17–47 months (167 identified as typically developing; 88 identified as late talking), our work aims to identify the reliability of Thin Slice Coding by comparing the results to the ECBQ. Predicting similar results, this work will establish reliability of Thin Slice Coding, and could assist in creating individualized intervention strategies based on temperament characteristics for late talking children.

Perceptual Fluency and Price Perception

Dana Beilfuss, Derrick Heise, Deanna Luttenberger, Tiffany Thompson and Bernadette Woldt
(Dr. Justyna Olszewska)
Psychology
Poster Presentation (P37)

Fluency, the ease with which people process information, is crucial when people make judgments in a wide variety of domains, including frequency, familiarity, confidence, and categorization (Oppenheimer & Frank, 2008). In this study, we present evidence that fluency also plays a role in price perception. Under four different conditions (two low price conditions and two high price conditions) participants judged their willingness to purchase various products (low involving and high involving) and indicated acceptable/unacceptable prices. Ease of information processing was manipulated by a font type (Mistral vs. Times New Roman). The results showed that fluency affected price in the way that participants accepted higher prices when they evaluated products in a fluent condition. Consistent with this, the Weber fraction showed lower price sensitivity toward increase for fluent condition than for disfluent. Levels-of-information processing approach serves an explanation for this effect.

Memory for Perceptually Similar Environmental Sounds and Words

Colton Boelte, Ryan Dvorak, Derrick Heise, Abigail Lane, Michael Tylor Losser, Maggie Loy, Dakota Richardson, Amy Hodel and Deanna Luttenberger
(Dr. Justyna Olszewska)
Psychology
Poster Presentation (P38)

In this study we modified the classical DRM procedure in order to test memory for perceptually similar environmental sounds and speech. Environmental sounds are remembered differently and are less reliable than speech. Whereas speech can be abstracted away from the auditory stimulus largely retaining the semantic content, memory for

environmental sounds is more explicitly bound to the details of the waveform. In two experiments we examined the effect of auditory stimulus input format; meaningless vs. meaningful sounds and words vs. nonwords on memory performance. The results revealed that in both sounds conditions and in short- and long-term memory a false memories effect occurred. Errors toward related negative lure sounds remained equal in STM but in LTM they were higher in the meaningful condition. Memory performance for phonologically similar words and non-words was similar in STM. In LTM, errors for related negative lures in the words condition remained the same as in STM, but increased for non-words. The results related to sounds (Experiment 1) showed generalization for meaningful sounds over time, whereas for meaningless sounds, participants focused more on the perceptual features of the stimuli. Our findings for phonological material indicate the importance of distinctive meaning of perceptually similar words.

Eliminating the Detrimental Impact of Multifaceted Questions on Eyewitness Accuracy After Exposure to Misleading Post-Event Information

Blair Braun, Ashley Jensen, Allison Smith, Kaitlin Beattie, Deanna Luttenberger, Tamiqua Handschke and Bethany Cheng (Dr. Quin Chrobak)
Psychology
Poster Presentation (P39)

Previous research has demonstrated that multifaceted questions (which contain both true and false propositions in the same question) disproportionately reduce accuracy for participants who have been previously exposed to misleading information about an initial witnessed event (Chrobak, Rindal, & Zaragoza, 2015). Subsequent research demonstrated that these findings cannot be eliminated even when participants are specifically instructed to assent only when all parts of the question were true. Importantly, however, the results from these studies were generated in the context of a final face-to-face, time-limited recognition test. The current investigation extended these findings by testing participants under conditions that would likely maximize the use of more deliberate monitoring strategies (i.e., a computerized, time-extended recognition test). Results indicated that despite these advantages, misled participants continued to be disproportionately affected by the use of multifaceted questions. Both theoretical and practical implications for these findings are discussed.

Examining the Grain-Size Lineup While Making Cross-Race Identifications

Blair Braun*, Ashley Jensen, Allison Smith, Kaitlin Beattie, Deanna Luttenberger, Tamiqua Handschke and Bethany Cheng (Dr. Quin Chrobak)
Psychology
Poster Presentation (P40)

According to the Innocence Project, 71% of DNA evidence exonerations have involved eyewitness misidentification. Most researchers agree that the standard procedures used in line-up identifications are inadequate to reduce such false identifications. The present study seeks to investigate the effectiveness of new lineup identification instructions that allows witnesses to select more than one individual at a time from a photo lineup (e.g., grain-size lineup). Horry, Brewer, and Weber (2016) were the first to examine the effectiveness of a grain-size lineup identification instructions. Overall, results indicated that the grain-sized approach was no more informative than traditional instructions which inform witnesses that only one target can be selected. However, a limitation to this study is that participants rarely utilized the grain-size approach (and did so only when the task was difficult). In order to induce participants to select more than one target in the grain-size instructions condition, a cross-race identification manipulation was used to enhance task difficulty. This manipulation was chosen as previous research has demonstrated poor accuracy with cross-race identification, particularly when a majority group member (e.g., a Caucasian) attempts to identify a minority group member (e.g., an African American). Results, theoretical and practical implications are discussed.

Generalization Abilities of Infants During Word Learning

Blair Braun* (Dr. Sarah Kucker)
Psychology
Oral Presentaions Session IV
Reeve Union Room 306 (9:30 – 10:30 a.m.)

Children are consistently building new connections with the language they encounter—organizing their vocabulary and connecting newly learned language to previously mastered vocabulary. As children are building these vocabularies, they begin to use various

properties of new items to categorize words in their lexicon. Prior work has shown that while children's vocabularies are developing, shape becomes particularly helpful for categorizing. However, it has yet to be explored how children generalize known objects to basic shaped (i.e. only shape relevant features) and weirdly shaped (i.e. distinctive features and function). The present investigation sought to better understand how children generalize known referents to *geon-isomorph shapes* (i.e. basic-shape) and *weirdly shaped* exemplars of that referent (i.e. morphed-shape). We examined generalization abilities of 17–36 month old children in two ways: novel noun generalization (NNG) and a known word comprehension task with both geon-isometric and weirdly shaped versions of referents. Results suggest even when children employ attentional resources to shape, experience also plays a role when generalizing to geon-isometric and weirdly shaped representations of referents. This study is a small component of understanding the complexity of how children impressively generalize words to grow their vocabularies.

The Effect of Mindfulness Practice on Forecasting of Affect, Comfort, and Behavioral Intentions about Older Adults with Dementia Living in a Nursing Home

Alexandria Ebert♦, Margaret Schroeder, Aimee Waraxa and Madison Malcore (Dr. Phan Hong)
Psychology
Poster Presentation (P41) **WITHDRAWN**

Hong, Lishner, Vogels, and Ebert (2016) established a causal link between mindfulness practice and affective forecasting accuracy. The current study further examined this relationship. Participants (N = 124) who indicated they did not have a close relationship with an older adult with dementia participated in this study. First, participants were randomized into one of three conditions: (1) mindfulness-practice (n = 41), (2) active control (no mindfulness; n = 41), or (3) control (baseline; n = 42). Then, participants predicted the following in regards to watching a documentary about older adults with dementia (OAwD) living in a nursing home: (1) their positive and negative affect, (2) their willingness to interact with an OAwD, and (3) their comfort around OAwD. Participants returned 1–2 days later and watched a documentary about OAwD living in a nursing home and filled out a revised form of the questionnaire that asked them to report on their actual affect, willingness to interact, and comfort. Several one-way between subjects ANOVAs assessing forecasting accuracy of the aforementioned variables with experimental condition were conducted. The predicted main effect of mindfulness condition on forecasting accuracy was not significant for positive affect, negative affect, willingness to interact, or comfort ($ps > .05$).

Inducing Growth Mindset in Young Adults Providing Care for Persons Having Dementia

Alexandria Ebert*♦ (Dr. Anca Miron)
Psychology
Poster Presentation (P42)

Growth mindset (GM)—the belief that humans have the capacity to improve their abilities based on the environment in which they live—has been associated with positive psychological and behavioral outcomes (Dweck, 2012). Our study examined the effects of a GM induction on attitudes of paid and family caregivers of people with dementia (PwD). Participants were randomized into either a GM, fixed mindset (FM), or control condition. In line with previous research, participants in the mindset conditions first read a short article about dementia caregiving skills (Halperin et al., 2011; Job, Dweck, & Walton, 2015) that was manipulated to induce either a growth or fixed mindset. Afterwards, participants filled out a questionnaire about the person they provided care for, which assessed desire to interact, interaction concerns, perspective taking, attitudes toward the person and PwD in general, and labeling of positive, negative, and situation-dependent attributes. It is predicted that participants in the GM condition (versus participants in the FM and control) will have: (1) more positive attitudes toward caregiving, the person they care for, and people with dementia in general, (2) more perspective taking and situation-dependent labeling of the person they care for, and (3) fewer interaction concerns.

Letters to My Grandparent: The Silver Lining of a Dementia Diagnosis in Grandchildren-Grandparent Relationships

Alexandria Ebert*♦, Amy Hodel, Rachel Davis, Sarah Rowley and Emma Melotik (Dr. Anca Miron)
Psychology
Poster Presentation (P43)

We examined the differences in perspective taking between young adults with grandparents who have dementia, compared to those with grandparents without dementia using Bertacco and Deponte (2005)'s letter-writing and free-recall tasks. College students with a grandparent diagnosed with dementia (DD group; $N = 22$) or a grandparent without dementia (ND group; $N = 45$) participated in the study and completed: (1) 15-minute letter-writing task, (2) 5-minute free-recall task, and (3) an untimed questionnaire containing the perspective taking measure, and grandparent and personal demographic measures. Researchers then coded and analyzed the data. Participants in the DD group reported experiencing higher perspective taking ($p = .027$), used more second person pronouns ($p = .002$) and showed more empathic concern for their grandparent in their letters than those in the ND group ($p = .016$). Participants did not significantly differ in solidarity ($p = .13$) or in number of shared negative experiences ($p = .45$). Participants in the DD group did, however, report more shared positive experiences in their letters than the ND group ($p = .007$). Our results suggest young adults interacting with a grandparent with dementia utilize different interaction strategies than young adults interacting with a grandparent without dementia.

Let's Talk Temperament: Exploring Interactions between Parent Personality and Child Language

Garrett Ellis, Allison Smith and Kassidy Urbanek (Dr. Sarah Kucker)
Psychology
Poster Presentation (P44)

Language development plays a crucial role in the beginning stages of children's development, and many external factors may have an impact on the maturation of language skills. Prior studies suggest that parent personality, parent mental health, and child temperament all play a role in the developmental trajectories of a child. Research regarding these interactions has proven to be understudied and underdeveloped by the scientific community. The goal of the present study is to investigate the relationship between these elements and children's vocabulary scores along with their performances on language tasks. Parents of children between 17- and 37-months completed a series of forms on demographics, child's vocabulary, child temperament, and parent personality. Children were then asked to complete a variety of language tasks. Next, researchers analyzed these videos using the "thin slice" approach, a way of objectively scoring a child's temperament looking at "thin" slices/portions of a video. The current study will determine if there are any significant correlations between these environmental factors on the development of child language. These results provide important implications for the language skills all children need in order to succeed in the world.

The Effect of Social Factors on Language Acquisition

Monica Fieck (Dr. Sarah Kucker)
Psychology
Poster Presentation (P45)

Throughout their daily lives, children are exposed to many social factors that influence their language development. Prior work has indicated that gender, technology use, and socioeconomic status can all influence language learning. A child's interactions, their community involvement, and parent-child relationships such as parent-child reading may also significantly influence language growth. In particular, a child's lexicon may increase at a faster rate if the child is exposed to particular social activities in which they have the opportunity to listen to and observe others' language usage. The current study utilized parent reported demographics and questionnaires to examine which social factors have the strongest influence on a child's language acquisition. The results have important implications for how children learn language through different aspects of socialization. With this knowledge, parents and teachers may utilize the best practices to efficiently expand a child's vocabulary.

Examining the Endorsement of an Implicit Sexual Double Standard: The Use of a Novel Implicit Association Test Incorporating a Limited Awareness Gender Priming Procedure

Edrose Heiny♦, Megan Reinl, Luke Walter and Miranda Cross (Dr. Aaron Karst; Dr. Ashley Thompson–University of Minnesota Duluth)
Psychology
Poster Presentation (P46)

Research on the sexual double standard (SDS) indicates that women are judged more harshly than

men for engaging in similar sexual behavior (Crawford & Popp, 2003). Despite the documented support for the SDS, recent research indicates that it may be narrowing (Zaikman & Marks, 2014), perhaps due to socially desirable responding. Consequently, researchers have been encouraged to pursue innovative implicit procedures to assess the SDS. Thus, the current study examined the potential endorsement of the SDS using an improved implicit research design. A total of 165 undergraduate students completed a novel procedure incorporating a limited awareness gender priming procedure into the Implicit Association Test (IAT). Results revealed the presence of an implicit sexual double standard, where a stronger implicit preference for sexual images was observed after receiving male primes (M = 0.19, SD = 0.48) as compared to female primes (M = 0.13, SD = 0.50). Results from this study provide support for the notion that the SDS may still exist in today's society, particularly at the implicit level. It is important to know that the SDS can be assessed using implicit measures, as the sensitive nature of this topic can make it more susceptible to biased responding.

The Effects of Diurnal Variability and Modality on False Memories Formation

Amy Hodel and Deanna Luttenberger
(Dr. Justyna Olszewska)
Psychology
Oral Presentaions Session IV
Reeve Union Room 306 (9:30 – 10:30 a.m.)

There is considerable evidence that time of day at which cognitive tasks are performed affect the quality of performance differently. Previous studies (Folkard, 1979) revealed that people rely more on semantic aspects of stimuli in the evening than in the morning. The objective of the current study was to investigate the effect of time of day on visual and auditory, short- and long-term semantic memory illusions (STM and LTM). Moreover, we defined a research question to investigate whether diurnal variability has different effects on semantic stimuli in visual and auditory modalities both in STM and in LTM. There were three probe types: related negative lures, unrelated negative lures, and studied positive probes. Each participant completed a visual and auditory block. We found a false memories effect in the evening for visual stimuli in STM. In LTM, false memories effect was present in all conditions. More semantic errors were made in STM in the evening than in the morning following visual presentation. In LTM more errors were made in the evening when input was auditory. The results are discussed in the light of level of processing that individuals adopt over the day.

A Field Experiment Examining Mindfulness on Eating Enjoyment and Behavior in Preschool and Elementary Age Children

Madison Malcore, Tiffany Thompson and Aimee Waraxa (Dr. Phan Hong)
Psychology
Poster Presentation (P47)

Data suggests maladaptive eating patterns emerge at a very early age and food neophobia emerges before the age of five. However, interventions promoting healthy eating behaviors target older children. The goal of the present study was to examine whether mindfulness promotes more diverse eating behaviors and greater enjoyment of foods children typically avoid. Sixty-five preschool and early elementary children from four schools participated in the experiment. Children were randomly assigned to a four-week mindfulness or control condition and received instructions to mindfully engage with food or were allowed to eat without mindfulness prompts. Across both conditions, group leaders modeled eating behaviors for the children by eating all the offered food. Children reported amount eaten and rated their enjoyment of the food. Analyses of the composite scores from the total sample showed children in the mindfulness condition sampled more celery, cauliflower, and garbanzo beans and ate more overall food compared with children in the control condition. Subjective ratings of enjoyment of foods eaten did not significantly differ between the mindfulness and control groups. Results from the preschool sample mirrored those of the elementary school sample suggesting that mindfulness can promote more diverse eating in children as young as three years old.

The Effect of Language on Perception of Ingroups and Outgroups

Samantha Noll♦ (Dr. Sarah Kucker)
Psychology
Poster Presentation (P48)

Mechanisms behind prejudice are a topic of long standing research in social psychology. The experimental exploration of prejudice through a

cognitive psychology approach is rather rare. Prior research has demonstrated that prejudice cannot exist without the use of language. That is, language influences prejudice: an individual's expressed attitude toward another race. Prejudice can arise when there is a conflict based on group categorization. Thus, the aim of the present research is to examine how positive or negative language can influence prejudice when individuals are categorized into groups. Students in the University of Wisconsin Oshkosh psychology pool were recruited to participate. Participants were exposed to a language manipulation and completed surveys accessing feelings of others, racism, sexism, and a demographic questionnaire. Specifically, this study looked at how prejudice can be manipulated by language as a result of an outgroup (i.e., an individual's non-identified group) member's descriptions. Results of this study carry implications about the fluidity of prejudice. Furthermore, understanding the potential language has to change feelings and attitudes of different groups is crucial to explore as an avenue for changing prejudicial views.

The Effect of Infant-Like Characteristics on Empathic Concern I: Does It Replicate?

Samantha Noll♦, Jordyn DeBraal♦ and Margaret McMullin♦ (Dr. David Lishner)
Psychology
Poster Presentation (P49)

Infant-like characteristics have been hypothesized to elicit emotional-motivational responses that promote parental care. Previous research by Lishner, Oceja, Stocks, & Zaspel (2008) found evidence consistent with this hypothesis, such that participants reported experiencing significantly more empathic concern for an adult depicted as having infant-like characteristics than an adult depicted as having adult-like characteristics. In the present research, four experiments were conducted to evaluate the replicability of Lishner et al.'s findings. Using randomized blocks, participants (N = 240) were assigned to one of four direct replication experiments based on the procedure and materials used by Lishner et al. Within each experiment participants read a newspaper article about an adult in need and then reported their feelings of empathic concern. Participants were randomly assigned to read one of two versions of the article: one in which the person was depicted as having infant-like characteristics or one in which the person was depicted as having adult-like characteristics. Based on Lishner et al.'s original findings, it is was predicted that participants who viewed the adult with infant-like characteristics would report experiencing more empathic concern than participants who viewed the adult with adult-like characteristics. Data analysis is currently ongoing.

The Effect of Infant-Like Characteristics on Empathic Concern II: An Examination across Three Direct Replication Studies (in Color)

Cameron Blankenship, Carolyn Schweda, McKayla Bullock, Haley Bowers, Alexis Maier and Nathan Klug (Dr. David Lishner)
Psychology
Poster Presentation (P50)

Lishner, Oceja, Stocks, and Zaspel (2008) found that participants reported feeling more empathic concern for a person in need whose picture had infant-like facial characteristics than one whose picture had adult-like facial characteristics. Noll, DeBraal, McMullin, & Lishner (2018) conducted four direct replication experiments using a procedure and materials very similar to those of Lishner et al. However, one potentially important difference between both sets of studies is that Lishner et al. presented participants with color pictures, whereas Noll et al. presented participants with grayscale pictures. In the present research, three experiments were conducted using the same procedure and materials as Noll et al., except color pictures were presented instead of grayscale pictures. Using randomized blocks, undergraduate participants (N = 180) were randomly assigned to one of three direct replication experiments. Within each experiment participants (N = 60) read an article about a student in need. Participants were randomly assigned to view a picture of the student with either infant-like or adult-like facial characteristics and then reported their feelings of empathic concern. It was predicted that feelings of empathic concern would be higher for the student with infant-like characteristics than for the student with adult-like characteristics. Data collection is ongoing.

The Effect of Infant-Like Characteristics on Empathic Concern III: An Examination of Replication Variability across Seven Direct Replication Studies

Kevin Mohawk♦, Rebecca Timmins♦, Sean Conway♦
(Dr. David Lishner)
Psychology
Poster Presentation (P51)

Replicability is a growing issue in psychology. Currently, much debate exists about whether the apparent difficulty in replicating psychological findings reflects problematic practices in the production and publication of research findings or reflects an underestimation of the extent to which random error creates variability across study findings (Pashler & Harris, 2012; Schmidt, 2009; Stanley & Spence, 2014). To more closely examine how random error may affect variability in findings across replication studies, findings from seven direct replication studies conducted to investigate the infant-like characteristic effect on empathic concern were examined. These studies (N = 60 in each) were reported by Noll, DeBraal, McMullin, & Lishner (2018) and by Blankenship, Schweda, Bullock, Bowers, Meier, Klug, & Lishner (2018). The present analyses sought to determine the extent to which results varied (in terms of variability in effect sizes) across the seven replication studies despite their reliance on highly similar procedures and materials. A variety of analyses were employed to examine the degree of effect size variability across studies due to random error and to examine the potential sources of this random error (e.g., researcher effects, research collective effects). Data analyses are ongoing.

Work Disengagement Explains the Relationship between Work Overload and Work Strain

Markus Oechsner* (Dr. Lixin Jiang)
Psychology
Poster Presentation (P52)

Although a positive relationship between work overload and work strain has been found, there is limited research on how work overload translates into work strain. Thus, this study was designed to discover what coping method (e.g., work disengagement) may explain why employee work overload may lead to work strain over time. To investigate this, we conducted a cross-lagged three-wave data collection via Amazon Mechanical Turk where work overload was measured at Time 1, disengagement from work was measured at Time 2, and work strain was measured at Time 3. We found a significant mediation effect of work disengagement in the relationship between work overload and work strain. In other words, if an employee coped with work overload by disengaging from one's work, he/she is likely to experience work strain as a result. The results indicate that work disengagement may not be a proactive coping strategy when faced with work overload.

Can You Picture This?: Imagability and Specific Language Impairment

Kyra Piette and Kaitlin Beattie (Dr. Sarah Kucker)
Psychology
Poster Presentation (P53)

Language is the primary way people communicate and is an imperative facet of learning and everyday interactions. Children with Specific Language Impairment (SLI) experience a variety of difficulties with speech and language including understanding abstract words, having more limited vocabularies, and creating difficult mental representations of such words when compared to typically developing (TD) children. Previous research indicates that children with SLI experience impairments with tasks that support speech including articulation, encoding, speech perception and discrimination. The present study looks to elucidate any differences between TD children and children with SLI with regards to their respective abilities to picture abstract or concrete words. Data was collected by coding definitions of words with various levels of imagability. Researchers compared the number of errors children made according to a words level of concreteness or imageability. Overall results show, children with SLI have smaller vocabularies and make more errors than TD children. Furthermore, children with SLI have a difficult time encoding and understanding abstract words. Such results indicate that educators and clinicians might have to alter teaching practices in order to best help and effectively teach children with SLI.

Mindfulness and the Effect on Helping Behaviors towards Older Adults

Margaret Schroeder, Madison Malcore, Aimee Waraxa and Tiffany Thompson (Dr. Phan Hong)
Psychology
Poster Presentation (P54)

Mindfulness in promoting helping behavior towards older adults was examined. Participants (N = 144) were randomly assigned to a mindfulness or control condition and a helping or nonhelping condition. In the helping and nonhelping conditions, participants completed word searches and anagrams as quickly as possible. In the helping condition, they were told the money donations to feed older adults, through the AARP's Drive to End Hunger, were dependent on their performance on the tasks. Two ANOVAs (with and without controlling for trait mindfulness) assessing number of correct responses with mindfulness and helping condition were conducted and yielded non-significant results. Mindfulness main effects were not significant, $F(1,139) = .311$, $p = .578$, *partial* $\eta^2 = .002$ and $F(1,140) = .304$, $p = .582$, *partial* $\eta^2 = .002$, respectively. The predicted main effect of helping condition was not significant, $F(1,139) = .883$, $p = .349$, *partial* $\eta^2 = .006$ and $F(1,140) = .903$, $p = .344$, *partial* $\eta^2 = .006$, respectively. There was no significant interaction between the mindfulness and helping condition, $F(1,139) = .251$, $p = .617$, *partial* $\eta^2 = .002$ and $F(1,140)=.259$, $p = .612$, *partial* $\eta^2 = .002$, respectively. Descriptive trends indicated that the results were in the predicted direction.

Exploring the Transfer Deficit through Novel Noun Generalization

Alyssa Scott* (Dr. Sarah Kucker)
Psychology
Poster Presentation (P55)

Children's ability to generalize labels for objects to other items with similar shape is essential for language comprehension. Little work, however, examined if children are able to use the same characteristics (e.g. shape) to learn object labels from technological devices (e.g. tablets/smartphones). Children are unable to transfer information from 2D images to 3D objects, known as the Transfer Deficit (Barnett & Ceci, 2002). Using a Novel Noun Generalization (NNG) task with tablets, smartphones and real life objects, children ages 18–36 months were asked to generalize a label from an exemplar to another item that matched the exemplar in either shape or material. Children were placed in four conditions: mixed 2D screen to 3D objects, consistent 2D screen to 2D screen, consistent 3D objects to 3D objects, and mixed 3D objects to 2D screen. The results are consistent with previous literature (Smith, 2000; Landau, Smith, & Jones, 1988); children selected the shape-matching objects more often than the material-matching objects when the exemplar was a 3D object. Results show that children fail to generalize shape when exemplar and test objects were presented on a screen (2D), specifically demonstrating poorer performance when generalizing from 2D to 3D.

The Effects of Mindfulness on Helping Children

Aimee Waraxa, Madison Malcore, Tiffany Thompson and Margaret Schroeder (Dr. Phan Hong)
Psychology
Poster Presentation (P56)

Mindfulness in promoting helping behavior towards children was examined. Participants (N = 151) were randomly assigned to either a mindfulness or control condition and either a helping or nonhelping condition. In the helping and nonhelping conditions, participants were told to complete word searches and anagrams as quickly as possible. In the helping condition, they were told donations to feed hungry children, through the Feed the Children charity, were dependent on their performance on the tasks. Two ANOVAs (with and without controlling for trait mindfulness) examining number of correct responses with mindfulness and helping condition yielded non-significant results. The predicted main effect of mindfulness condition was not significant, $F(1,139) = .108$, $p = .742$, *partial* $\eta^2 = .001$ and $F(1,147) = .081$, $p = .776$, *partial* $\eta^2 = .001$, respectively; and neither was the predicted main effect of helping condition, $F(1,139) = 2.322$, $p = .130$, *partial* $\eta^2 = .016$ and $F(1,147) = 2.315$, $p = .130$, *partial* $\eta^2 = .016$, respectively. There was no significant interaction between the mindfulness and helping condition, $F(1,139) = .187$, $p = .666$, *partial* $\eta^2 = .001$ and $F(1,147) = .212$, $p = .646$, *partial* $\eta^2 = .001$, respectively. Descriptive trends suggest results were in the predicted direction.

How Higher Education Influences a Woman's Views on Traditional Marriage Norms

Ariannah Albrecht-Hanke (Dr. Orlee Hauser)
Sociology
Poster Presentation (P57)

The focus of this research is an examination of whether higher education influences a woman's views on traditional marriage norms. I will be looking at

whether or not a higher education delays one's marriage age as well as looking at one's views on adopting surnames and also if their education has either strengthened or weakened one's thoughts on marriage. The research project will take place online through a survey using SPSS to calculate my findings.

How Leisure Activities Impact Our Local Communities

Aaron Batterton (Dr. Orlee Hauser)
Sociology
Oral Presentations Session IV
Reeve Union Room 306 (9:30 – 10:30 a.m.)

The purpose of this study is to discuss the impact public spaces have on leisure activities, more so within disc golf, in the Fox Valley area. This paper will cover three main items that impact our local community's public leisure areas, which are economic, environmental, and socioeconomic factors. Information regarding this study was collected qualitatively through interviews with local Parks and Recreation Departments and disc golf course designers. I found through my research that over 90 percent of disc golf courses are attached to existing park structures. Disc golf doesn't have the monetary draw as do more popular activities, such as baseball, but it does benefit parks because the cost to install a course is very reasonable. The environmental impact of disc golf is minimal and with proper planning can be counteracted. This impact can be seen with erosion near equipment but can be decreased by different basket placement on the course. Socioeconomic issues affect our communities' leisure activities. However, these are common problems in our society today. These issues can be seen by the demographic that disc golf attracts, which are white, middle-aged males. Through disc golf we can see how leisure activities impact our local parks.

Bodybuilding Changing Femininity

Miranda Behringer (Dr. Orlee Hauser)
Sociology
Poster Presentation (P58)

Many women who body build today are looked at differently. Most often they are judged for participating in a sport mostly known for the men in it. Regardless of the judgment they receive they experience many positive things and often have people who support them. This was explored through interviewing a few women who had experienced bodybuilding. A content analysis was used to compare men's and women's fitness magazines to see the differences between the article content. Many of the women interviewed proved that they were somehow treated differently when they identified as being a part of this sport, but often had a positive takeaway from it whether it be feeling stronger or proud of themselves. The content analysis showed differences between the article content. Both were geared towards what was stereotypical of each gender, women being more fat loss or exercises that didn't focus on weights and men were more focused on lifting weights and gaining muscle. In the end, women bodybuilding is still new to society, but many of the women have proved that competing was worth it regardless of the negatives.

How Social Characteristics Affect Climate Change Attitudes

Cheyenne Burchell (Dr. Orlee Hauser)
Sociology
Poster Presentation (P59)

The main purpose of my study was to study how a person's political ideology, political affiliation, religion and strength of religiosity affects their views on climate change. My research project also looks at how basic demographic characteristics such as age, sex, gender, income and education affects a person's view on climate change. My data was collected via an anonymous survey sent out to the UWO community. Previous research has repeatedly found that white, conservative males are the most likely to not believe in climate change and I expect my findings to have similar results.

War on Drugs: Perspectives from Officers

Ashley Derks (Dr. Orlee Hauser)
Sociology
Poster Presentation (P60)

The War on Drugs has been an issue as far back as most students can remember. Over the years, drug use has grown to be a more concerning epidemic than ever before. This issue affects people of all ages and is starting to target young teenagers which is the most concerning factor. Society is wondering why this epidemic is struggling to reside and looking at law enforcement, more than ever, to put an end to this issue. The focus of this research will be to try to figure out how drugs have changed over the years and how it has affected policing tactics and styles.

Relationships in the Modern World

Taylor Esser (Dr. Orlee Hauser)
Sociology
Poster Presentation (P61)

As humans, interpersonal relationships are an inevitable part of our everyday lives. Though there are many types of relationships people maintain, among the most important are the individual(s) with whom we choose to spend our lives. As the structures in society change, so do the way our relationships operate. As sexuality becomes more fluid, it's important to note our society's understanding of different relationship styles and their attitudes about them. Historically, monogamy has been the ideal type relationship in our culture. Consensual nonmonogamies like polyamory and open relationships are becoming increasingly prevalent in our culture. Understanding people's attitudes about these distinctive styles will help us see whether monogamy is still the ideal type relationship in our society. One of the most common problems in monogamous relationships is infidelity, which can only exist in monogamous relationships. Through in-depth interviews with a diverse group of individuals, I hope to find commonalties and differences in the way these different relationship styles are defined. I also hope to uncover the underlying issues as to why infidelity occurs and whether the phenomenon is inescapable. Above all, I hope to find whether individuals believe that consensual nonmonogamy is a viable alternative to the traditional monogamous relationship.

Too Much of a Good Thing? Social Media and Dating Behaviors

Amber Heller (Dr. Orlee Hauser)
Sociology
Poster Presentation (P62)

The purpose of this study is to examine online dating behaviors in relationships with social media as the focus. The study will look at the positives of social media use in relationships, including an increased sense of connection, as well as being able to see your partner's other side of their personality. The study will examine negatives of social media use in relationships that can include jealousy, and uncertainty within relationships. This topic is relevant to study because it could provide insight on the shift in dating amongst millennials, and how this change affects relationships, both positively and negatively. Also, this shift in dating could potentially indicate potential psychological issues related to certain negative dating behaviors. The data for this study will be collected via an online survey done through Qualtrics Survey. The survey will be administered through a link that will be emailed to a random sample of approximately 100 students from the University of Wisconsin Oshkosh.

Commercialization and Coffee Shops: An Ethnography on Coffee Consumption across Cultures

Karenna Jolin (Dr. Orlee Hauser)
Sociology
Poster Presentation (P63)

Coffee shops have historically been important places for daily informal public life. However, coffee shops are being used for productive work environments instead of places of socialization. For my research, I will seek to address how people spend their time in coffee shops, such as on the computer, scrolling through their phone, or reading. I will study a local coffee shop and a Starbucks across three different locations including Manila, Chicago, and Oshkosh for a period of five hours each. For each location, I will take pictures and detailed ethnographic notes. I will also record customers who came in, whether or not they sat down, their length of stay, and what they spent their time doing. Due to the business nature of Chicago and Manila, I expect to find more business meetings occurring. I expect to find that more groups of people will be going to local coffee shops rather than Starbucks and while the majority of Starbucks customers are to-go, the majority of local shop patrons sit down. I expect that there will be more socialization occurring at local coffee shops than Starbucks, but overall people are using coffee shops for individualistic pursuits.

A Look into the Networks That Tie Us Together

Mark Krueger (Dr. Orlee Hauser)
Sociology
Poster Presentation (P64)

The world we live in today is more connected than any other time in human history. This project aims to discover the different networks that are held between the online world with the real one. This is one of the many ways that our networks are being held together

and updated every minute of every day. But what if there was another network that hasn't been looked at before? The world of online gaming has become the most popular form of leisure activity for young people all over the world. This is leading to new networks that are being formed between people who would have otherwise never met. The networks that are arising could be a subnetwork of people who only know each other through the internet. To study the idea of two networks, we will become a part of an online network of friends and see how many of them know each other in the real world. Reading about social networks will further help understand if we can hold two different identities with two different networks. The two networks will be analyzed for overlap and to identify the ways that they interact with one another.

Corporal Punishment and Views Regarding Race, Gender, Religion and Age

Michael Lockwood (Dr. Orlee Hauser)
Sociology
Poster Presentation (P65)

This research aims to get viewpoints from parents about corporal punishment and what factors play into views concerning their beliefs. It will consist of interviews with parents that fit the criteria for high risk for corporal punishment. I hope to assess whether society plays a role in corporal punishment and whether corporal punishment occurs at random or whether there are steps taken before corporal punishment is used.

Which High School Kids Do Drugs?

Nicholas Mand (Dr. Orlee Hauser)
Sociology
Poster Presentation (P66)

The scope of this research resolves around the question: Which High School Kids Do Drugs? Pointing out causal factors for students doing drugs is important to identify, especially in a time where there are social and health problems revolving around drug use. Monitoring the Future administers yearly surveys to high school students asking a wide range of questions from substance use to weekly allowance, providing an insight into the lives of these students. After gathering the 2016 MTF codebook and survey results there are variables that influence a higher risk of drug use. The variables examined in this research are gender, race, employment, extracurricular activities, and social network. Through data analysis and SPSS these variables are extracted and put into cross tabulation tables and regression models that examine their relation to drug use. Other scholars have conducted similar research and published articles pertaining to the effects that gateway adolescent drug use promotes. Finding relationships between variables is the first step in slowing down drug-related deaths.

Proximity to "Nature" for College Student Majors; a Meaningful Discussion on Food, Recreation, and Transportation

Ian Murphy (Dr. Orlee Hauser)
Sociology
Poster Presentation (P67)

An estimated 56% of people are living in an urbanized setting today; this trend is set to increase. By 2050, predictions range as high as 66% urbanized. Existing bodies of literature support the idea that cities provide communal benefits, a sense of diversity, and walkable/proximal environments that may contribute to better physical health and disease prevention for residents. Others would argue that rurality and other nature-rich environments provide us with nutritious food to eat, a sanctuary from the stress of everyday life, as well as an abundance of natural resources, so long as the health of the land is cared for and preserved for future generations. For students majoring in different subjects who are educated on such topics, who are willing to share what it means to be close or distant to nature through the photovoice method (picture-interviews), there may be less of a dichotomy involved in understanding accessibility in terms of recreation (what students like to do and why), transportation (when, why, and what is important), and food (the structure and consumption of edible commodity). The goal of this research is focused on students, and aims to assess patterns among the next population of educated young adults.

Status and Police Perception

Jeremy Norris (Dr. Orlee Hauser)
Sociology
Oral Presentations Session IV
Reeve Union Room 306 (9:30 – 10:30 a.m.)

A person's status affects the way they lead their daily lives and engagements with the police are no different. Movements like Black Lives Matter and

Thin Blue Line have put these status markers in the mainstream and have been scrutinized in the media. Often a person's status has been linked to institutional discrimination and can disrupt their lives.

The purpose of this study is to observe how an individual's status markers influence how they perceive the police. Understanding this connection can improve relationships between public and police, or at the least identify problems. This study is conducted as a survey to students exclusively on the University of Wisconsin Oshkosh campus and they are asked questions regarding UWO Police policies, actions, and norms. The answers and the respondent's demographics (class, race, sex, major) are then cross examined.

It is hoped that this study will create a better understanding of a how a person's status markers and background lead to their current perception of law enforcement.

The Role of Society in Preventing Juvenile Delinquency

Lauren Ott (Dr. Orlee Hauser)
Sociology
Poster Presentation (P68)

Juvenile offending is considered normative adolescent behavior due to the fact they typically commit non-violent crimes, a crime once or twice, and only during young ages. But those minor crimes can lead to addictive criminal behavior and eventually they can commit a bigger crime or continue their criminal behavior into their adult years. The criminal influences these adolescents learn or experience can be prevented or reduced by their upbringing in life or by society around them. This project examines the importance of the role society has in preventing juvenile delinquency. What learning environment are youth surrounded by? Does poverty or low family income influence behavior? Do current 21st century issues have an influence? How can delinquent behaviors be prevented? I have conducted interviews with officers in the area to gather information on how juveniles develop inside the jail and outside with the help of a probation officer or programs. I have also used data from previous studies and interviews on the roles society has had on preventing juvenile delinquency or supporting rehabilitative programs.

Student Athletes vs. Traditonal Students: Social, Academic, and Lifestyle Differences

Nolan Peterson (Dr. Orlee Hauser)
Sociology
Poster Presentation (P69)

This research paper will be looking at the differences between collegiate student athletes vs. non-student athletes (or just traditional students). The project will more specifically be looking at the differences socially, academically, and overall health/lifestyle between the two groups of students. Interviews will be conducted of both athletes and non-athletes asking questions to get back to the three themes of social, academic, and health or lifestyle. The participants will be randomly chosen at the University of Wisconsin Oshkosh. The research questions and interview questions will be looking to answer those three themes and the difference between athletes and traditional students. The last interview question that will be asked will also be the overall main research question. That question will be, "What have been your biggest challenges so far as a college student?" That question will give data to compare the participants. Some research has already been done on this topic. What makes this research different is the interview aspect and bringing all the themes into one research project. This research should complement other research done on colligate student athletes vs. non-student athletes. It is expected to see many differences between the two groups of student athletes and traditional students. The exact differences will be determined when the research is done.

Suicide Affects Everyone

Cydney Pufahl (Dr. Orlee Hauser)
Sociology
Poster Presentation (P70)

Suicide is a public health problem that affects millions of people each year. Suicide does not just affect the individual but also the families and communities associated with the individual. Many people do not realize how many are affected by suicide every year. The focus of this research is on the number of people affected by suicide, prevention and support groups, and the degree people are comfortable talking about suicide. A major focus of the study is to make people aware that not just the individual who commits the act is affected but people around them too. People who are affected by suicide need to realize they are not alone, and are part of a larger

group. Another area the research focuses on is prevention and support groups. The research looks at if society believes prevention and support groups are proactive or reactive. Do these groups form before or after the suicide happens? Does society think these groups are doing enough or do they need to do more? I have noticed that people are uncomfortable or do not want to talk about suicide. This paper explores why society is uncomfortable about this topic.

Athletes of the Past and Present: A Content Analysis

Charlie Scott (Dr. Orlee Hauser)
Sociology
Poster Presentation (P71)

Recently there has been an increase in the number of protests by professional athletes. Some of these protests, particularly in the NFL and NBA, have received much attention from the media. I looked at how people are reacting to the current protests compared to how people reacted to past protests by professional athletes. My research question was "How do responses to athlete protests from the 1960s and 1970s compare to athlete protests from 2000–present?"

I conducted a content analysis of U.S. newspaper articles regarding athlete protests and measured the direction of each article and sorted them into categories that are critical response, supportive response, and neutral response.

Structured Childhood vs. Free Play

Savannah Shaw (Dr. Orlee Hauser)
Sociology
Poster Presentation (P72)

This study examines parenting styles portrayed in *Parents* magazine with an eye to whether the content in the articles has changed over time. The advice in the magazine emphasizes styles such as concerted cultivation or accomplished natural growth. *Parents* was first published in October 1926. It has remained a primary media source for parenting advice. It features articles on a wide variety of topics that parents navigate daily. *Parents* has a readership of 13.7 million making it the dominant parenting magazine. I have conducted a content analysis of articles in this magazine focusing on whether and how natural growth or concerted cultivation child rearing practices of parenting are emphasized.

College Student Perceptions on Electronic Device Policies in Class

Melanie Thao (Dr. Orlee Hauser)
Sociology
Poster Presentation (P73)

The purpose of this research is to look at how college students perceive the use of electronic devices in class. Today, students are reliant on electronic devices for many reasons, such as socialization, entertainment, and specifically school work but most college courses prohibit electronic devices. The reason for prohibiting electronic devices in class is because it's a distraction and not all students use their devices appropriately during class. The goal is to find whether students support the decision of prohibiting electronics or are against prohibiting electronics.

My God(s)(?): A Chapbook on Religion and Queerness

Constance Bougie (Dr. Liz Cannon)
Women's and Gender Studies
Oral Presentations Session II
Reeve Union Room 306 (8:30 – 9:15 a.m.)

My gender identity (or lack of one) and sexuality (or, again, lack of one) aren't the only frustratingly bewildering aspects of my being—my religion, or possible lack of one, is another. I've called myself an atheist for months now, but I almost ought to refer to myself as an agnostic, trapped as I am in the throes of all my identity dysphoria. I've been looking into Hellenic polytheism: modern worship of the ancient Greek gods and goddesses. I might be genderless. I'm pretty aromantic, and fairly asexual, but referring to my sexuality in such small terms excludes my pansexuality. *My God(s)(?):A Chapbook on Religion and Queerness* is a collection of poems exploring the intersections between religion and queerness, involving both those crossed lines that exist within myself, and those that exist inside others. My hope is that the resulting work will prove, as they say, a comfort to the disturbed, and a disturbance to the comfortable.

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Alphabetical by students' last names.

* Denotes a recipient of the FY 2017–18 Student/Faculty Collaborative Research program grant and Small Grants awarded by the Office of Student Research and Creative Activity.

♦ Denotes a graduate student.

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Poster Session~ #38	**Michael Tylor Losser** *Psychology*	Memory for Perceptually Similar Environmental Sounds and Words	**18**
Poster Session~ #38	**Maggie Loy** *Psychology*	Memory for Perceptually Similar Environmental Sounds and Words	**18**
Poster Session ~ #37	**Deanna Luttenberger** *Psychology*	Perceptual Fluency and Price Perception	**18**
Poster Session~ #38	**Deanna Luttenberger** *Psychology*	Memory for Perceptually Similar Environmental Sounds and Words	**18**
Poster Session ~ #39	**Deanna Luttenberger** *Psychology*	Eliminating the Detrimental Impact of Multifaceted Questions on Eyewitness Accuracy After Exposure to Misleading Post-Event Information	**19**
Poster Session ~ #40	**Deanna Luttenberger** *Psychology*	Examining the Grain-Size Lineup While Making Cross-Race Identifications	**19**
Poster Session ~ #50	**Alexis Maier** *Psychology*	The Effect of Infant-Like Characteristics on Empathic Concern II: An Examination across Three Direct Replication Studies (in Color)	**23**
Poster Session~ #54	**Madison Malcore** *Psychology*	Mindfulness and the Effect on Helping Behaviors towards Older Adults	**24**

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Poster Session~ #56	**Madison Malcore** *Psychology*	The Effects of Mindfulness on Helping Children	**25**
Poster Session~ #66	**Nicholas Mand** *Sociology*	Which High School Kids Do Drugs?	**28**
Poster Session~ #49	**Margaret McMullin♦** *Psychology*	The Effect of Infant-Like Characteristics on Empathic Concern I: Does It Replicate?	**23**
Poster Session ~ #2	**Jamie Mikrut** *Anthropology*	A Test of the Standard Method for Morphological Sex Determination of the Human Crania	**1**
Poster Session~ #51	**Kevin Mohawk♦** *Psychology*	The Effect of Infant-Like Characteristics on Empathic Concern III: An Examination of Replication Variability across Seven Direct Replication Studies	**23**
Poster Session ~ #31	**David Morser*** *Physics and Astronomy*	Homogeneous Metallicity Estimates of F-Type Dwarf Stars and Open Clusters	**16**
Poster Session~ #67	**Ian Murphy** *Sociology*	Proximity to "Nature" for College Student Majors; a Meaningful Discussion on Food, Recreation, and Transportation	**28**
Poster Session~ #8	**Samantha Nixon** *Biology*	Isolation and Identification of Cellulose Degrading Bacteria from the UW Oshkosh Biodigester	**5**
Poster Session~ #48	**Samantha Noll♦** *Psychology*	The Effect of Language on Perception of Ingroups and Outgroups	**22**
Poster Session~ #49	**Samantha Noll♦** *Psychology*	The Effect of Infant-Like Characteristics on Empathic Concern I: Does It Replicate?	**23**
Oral Session II Reeve Room 306 8:30 – 9:15 a.m.	**Brynne Norgard*** *English*	Questioning *Post*coloniality: The Patriarchal Colonization of Irish Women in Edna O'Brien's 1990s Trilogy	**10**
Oral Session IV Reeve Room 306 9:30 – 10:30 a.m.	**Jeremy Norris** *Sociology*	Status and Police Perception	**28**
Poster Session~ #9	**Nathan Nozzi*** *Biology*	The Impacts of Stream Habitat and the Surrounding Terrestrial Habitat on the Diversity of Fish Communities in Waukau Creek	**5**

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Poster Session ~ #68	**Lauren Ott** *Sociology*	The Role of Society in Preventing Juvenile Delinquency	**29**
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Visual Art Presentation Reeve Ballroom 227AB 11:00 a.m. – 1:00 p.m.	**Nicholas Pierson*** *Art*	Programmable Painting	**2**
Poster Session ~ #53	**Kyra Piette** *Psychology*	Can You Picture This?: Imagability and Specific Language Impairment	**24**
Poster Session ~ #10	**Lyndsay Poeschl**♦ *Biology*	Surveying the Diversity and Function of Stridulatory Plates in Longhorned Beetles	**5**
Poster Session ~ #27	**Monica Preston*** *Geology*	Exceptional Preservation of an Oligocene (ca. 28 Ma) Inverebrate Marine Benthic Fauna, South Island, New Zealand	**11**
Poster Session~ #11	**Amanda Prigan***♦ *Biology*	Microbial Co-Infection Rates in Black-Legged Ticks (*Ixodes scapularis*) and Small Mammal Hosts in Central Wisconsin	**6**
Poster Session~ #70	**Cydney Pufahl** *Sociology*	Suicide Affects Everyone	**29**
Poster Session ~ #32	**Christian Quiles** *Physics and Astronomy*	Rocketry at UW Oshkosh	**17**
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Poster Session ~ #34	**Caryssa Retrum**♦ *Professional Counseling*	Cohort Participation: Impact on Personal Learning Networks	**17**
Poster Session~ #38	**Dakota Richardson** *Psychology*	Memory for Perceptually Similar Environmental Sounds and Words	**18**
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Poster Session ~ #54	**Margaret Schroeder** *Psychology*	Mindfulness and the Effect on Helping Behaviors towards Older Adults	**24**
Poster Session ~ #56	**Margaret Schroeder** *Psychology*	The Effects of Mindfulness on Helping Children	**25**
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Oral Session I Reeve Room 220 8:30 – 9:30 a.m.	**Maxwel Schwid** *Geology*	Phosphate and Iron Minerals of the Marinoan Serra do Caeté Formation, Mato Grosso, Brazil: Diagenesis of a Glaciomarine Biochemical System	**12**
Poster Session ~ #55	**Alyssa Scott*** *Psychology*	Exploring the Transfer Deficit through Novel Noun Generalization	**25**
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Poster Session ~ #36	**Erin Seidler** *Psychology*	Reliability of Temperament in Late Talking Children	**18**
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Poster Session ~ #40	**Allison Smith** *Psychology*	Examining the Grain-Size Lineup While Making Cross-Race Identifications	**19**
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Poster Session ~ #44	**Kassidy Urbanek** *Psychology*	Let's Talk Temperament: Exploring Interactions between Parent Personality and Child Language	**21**
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Poster Session~ #29	**Brooke Vander Pas*** *Geology*	Effects of Micro-Organisms on Fossil Structure and Chemistry: An Example from the Terrestrial Gastropod *Poecilozonites* of Bermuda	**12**
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