

16th Annual

● Undergraduate
● Research
● Conference

Southwest Minnesota State University



**WEDNESDAY,
DEC. 1, 2021**

**Conference
Begins at 8:30 a.m.**

ABSTRACTS

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Purpose

The purpose of the Annual SMSU Undergraduate Research Conference is to highlight the original and creative work done by SMSU undergraduate students at a one-day conference to be held annually at the SMSU campus. The public, including the University and Marshall community, friends, parents, alumni, prospective students and employers are all encouraged to attend and enjoy the excitement of intellectual accomplishments of our students.

How the Conference Started

The conference was initiated fall of 2006 by Dr. Emily Deaver, Professor Emeritus of Environmental Science. After she and Dr. Thomas Dilley conducted an Environmental Science program review in 2005-2006, it was clear that their science students needed more experience conducting research and communicating the results of that research to the broader community. The 1st Annual SMSU Undergraduate Research Conference was designed as a mechanism for SMSU science students to engage in a professional exchange of scientific ideas, as well as a means to showcase and celebrate their hard work and accomplishments. The first year program included 21 oral and 27 poster presentations from science students in Environmental Science, Biology, Physics and Chemistry. Because of the positive feedback from the academic community, the conference was expanded to include all disciplines across campus. Fall 2007 the 2nd Annual SMSU Undergraduate Research Conference doubled the number of presenters with 13 different programs across campus participating. This year, the 16th year of the SMSU Undergraduate Research Conference, there are 17 different programs participating, with 26 different faculty advisors. In total, there are 128 different undergraduate students presenters, divided between 33 oral, 56 poster, and 8 virtual presentations, as well as 5 students participating in a musical recital.

The hope is that the conference will continue to be a vibrant highlight of the academic year that emphasizes and celebrates the intellectual achievements of SMSU undergraduates.

Thank you to the David B. Jones Foundation for their generous support.



**16th Annual Undergraduate Research Conference
at Southwest Minnesota State University**

WELCOME AND KEYNOTE

Zoom Link: <https://minnstate.zoom.us/j/98546707508>

Password: URC2021

Room Moderator: Dr. Alyssa Anderson

- 8:30 Dr. Ross Wastvedt, SMSU Provost, Opening Remarks
- 8:40 Tracy Rosenberg, M.F.A Creative Writing; M.S. Kinesiology and Exercise Science, Educator and Grassland Restorationist
Keynote Address: "Life Purpose: How College and Career Leads to One's Calling"

ORAL SESSION A

SMSU Conference Center Upper Level

Biology, Environmental Science, Philosophy, and Political Science

- 10:00 Zachary Stute, Philosophy, Hobbes, Machiavelli, and Roblox
- 10:15 Ryan Fohrman, Political Science, Causes of Metro vs. Greater Minnesota School Funding Disparities
- 10:30 Cory Becker, Political Science, Broadband: Connecting Rural America
- 10:45 BREAK
- 11:00 Dylan Lauer, Political Science, Does Duluth Need the Northern Lights Express?
- 11:15 Joey Heinen, Biology, The Consistency of Aggression in Madagascar Hissing Cockroaches and its Relation to Body Size
- 11:30 Kaytlen Heacock, Environmental Science, The Change in Biota from Edge Effects in a Minnesota Tallgrass Prairie
- 11:45 Courtney Snyder, Environmental Science, The Effectiveness of Constructed Wetlands in Reducing Nutrients from Crop Tile Drainage in Rural Southwest Minnesota
- 12:00-1:00.... LUNCH BREAK
- 1:00 King Saenz and Jackson Vierstraete, Biology, Effects of Fertilized Diluted Feed on *Vanessa cardui*
- 1:15 Mikaela Lawrence, Biology, Abundance and Diversity of Collembola as a Result of Soil Management Practices
- 1:30 Mason Johnson and Brandon Parish, Biology, Effect of Audio Stimulation on Avian Feeding Behavior
- 1:45 Katelynn Urness, MacKenzie Klett, and Mieraf Dagne, Biology, Analysis of Food Preference and Selection Time on Male *Betta splendens*
- 2:00 Jason Turner, Alexander Hillesheim, Nicholas Putnam, and King Blanchette, Biology, Efficacy of Essential Oils on Coccinellidae
- 2:30 BREAK
- 2:45 Casey Wahl and Alyssa Enevold, Biology, The Effects of Permethrin on Dragonfly Nymph Behavior
- 3:00 Noah Pankonin, Brandon Parish, and Trust Amitaye, Biology, Effects of Differing Concentrations of Pesticide on Crickets

- 3:15 Regan Truedson and Alexis Freese, Biology, Feeder Preferences and Their Effect on Frequency of Bird Visits
- 3:30 Regan Truedson and Alexis Freese, Biology, Patterns of Food Aggression and Dominance in Black-capped Chickadees (*Poecile atricapillus*)
- 3:45 Bailey Bingen, John Palmer, and Madelynn Singsank, Biology, Autotomy-Induced Stotting Behaviour in Opiliones
- 4:00 Courtney Snyder, Paige Shwaluk, Madeleine Shwaluk, and Emma Polchow, Biology, Water Quality Assessment of the Redwood River in Southwest Minnesota using Macroinvertebrates as Biological Indicators

ORAL SESSION B

Charter Hall 201

Accounting, Communication Studies, History, Sociology, and Theatre

- 10:00 Alexander Duus, Communication Studies, Panic and Anxiety: A Poetry Program
- 10:15 Jenna Zeug, Communication Studies, Humanity, Liminality, and Ghosts: An Oral Interpretation of "Haunt" by Carmen Maria Machado
- 10:30 Devyn Halvorson, Communication Studies, Repurposing the Spectacle: A Debordian Analysis of "L'Après M"
- 10:45 BREAK
- 11:15 Domonique McPhail, Communication Studies, Drama/Drama: A Performative Comparison of Sean Grennan's "The Tin Woman"
- 11:30 Kylie Kessler-Gross, Sociology, Physician-Assisted Suicide
- 12:00-1:00 LUNCH BREAK
- 1:15 John Dwire, History, Colonel Henry Clay Lester's Actions at the Battle of Murfreesboro
- 1:30 Braeden Kluver, History, A Regional and National Examination of the National History Standards
- 1:45 Rees Lehman, History, Effects of 1980's Farm Crisis on Farmer
- 2:00 Noah Streed, History, Burial Practices Amidst Spanish Flu
- 2:15 Cory Becker, History, The Minnesota Massacre of 1978: An Election Like No Other
- 2:30 BREAK
- 2:45 Carter Haugrud-Damlo, History, The Impact of Native Boarding Schools
- 3:00 Ojasope Ale, Theatre, Drag Makeup
- 3:15 Jennifer Homan, Theatre, Nature Fairy
- 3:30 Bassam Mian, Accounting, The Impact of The Student Loan Debt
- 3:45 Mark Ezenezi, Accounting, How To Improve DMCA for Streamers

VIRTUAL SESSION A

VIA ZOOM - 10:00 - 10:45AM

Zoom Link: <https://minnstate.zoom.us/j/6699068969>

Password: URC2021

Room Moderator: Ruthe Thompson

English

- 10:00 Autumn Hess, English, Archetypal Themes in Stephen King's *Desperation*: Setting, Plots, and Characters
- 10:15 Melissa Yahr, English, Tara Westover's *Transformation*: How Educational Standards Changed a Life
- 10:30 Maggie Biegert, English, Archetypal Analysis of the Farmer

VIRTUAL SESSION B

VIA ZOOM - 1:00 - 2:15PM

Zoom Link: <https://minnstate.zoom.us/j/91526117789>

Password: URC2021

Room Moderator: Dr. Cindy Aamlid

Sociology, Theatre, and Psychology

- 1:00 Kayla Chester, Sociology, Working for Children
- 1:15 Morgan Malakowsky, Sociology, The Differences Between Same-Sex and Heterosexual Weddings
- 1:30 Molly McGough, Sociology, Youth Homelessness
- 1:45 Elizabeth Zoya, Theatre, The Make-up of the Fae
- 2:00 Amy Leervig, Psychology, Cognitive Control and Spontaneous Recognition Memory of Distracting Information

STUDENT RECITALS

1:00 - 1:50PM

Fine Arts Theatre

Cheyenne Volk Music "*Le Violette*" from *Pirro e Demetrio*, Act. III 2Alexis Christensen, Music, *Air*Kevin Totusek, Music, *Filibuster*Megan Thooft, Music, "Una donna a quindici anni" from *Così fan Tutti* Act II, Scene 1Jenna Vick, Music, *Srpska igra* No. 9 from *Funny Marimba Book*

POSTER PRESENTATION SESSION A

SMSU Conference Center Lower Level

Posters displayed 8:30AM – 5:00PM

Times shown indicate when authors will be present at the poster

Agribusiness, Biology, Computer Science, Environmental Science, Exercise Science, Hospitality Management, Mathematics, Psychology

- 1..... Cassy Platz and Ashley Zwack, Agribusiness Management, Economic Development in Brazil, 10:30 - 12:00
- 2..... Alexis Freese, Biology, The Potentials and Concerns of Targeting the Type IV Pili, in Vaccination Against Infectious Bovine Keratoconjunctivitis (IBK) 9:45-11:15
- 3..... John Palmer, Biology, The Impact of Human-Caused Noise Pollution on Marine Mammals 10:30 - 12:00
- 4 Alexis Freese, Drake Vlaminck, and Stephen Emrich, Biology, Effect of Soil pH on the Height of Radish Varieties 10:30 - 12:00
- 5 Noah Pankonin, Brandon Parish, Mary Grace Hinkle, and King Saenz, Biology, Assessing Plant Diversity in the SMSU Restored Prairie, 10:30 - 12:00
- 6 Abigail Schotter, Biology, The Effects of Grain-Free Diets and Taurine on Canine Dilated Cardiomyopathy, 1:00-2:30
- 7 Trust Amitaye, Biology, The Efficacy and Mechanism of Vitamin D in the Treatment and Prevention of Hypertension, 2:30-4:00
- 8 Katelynn Urness, John Palmer, Courtney Snyder, and Alyssa Enevold, Biology, Comparing Plant Diversity Between a Recent and Older Prairie Restoration at Camden State Park, 2:30-4:00
- 9 David Adigun, Computer Science, Online Store Application, 9:45-11:15
- 10 Suman Baniya, Computer Science, See-Me, 9:45-11:15
- 11 Camden Barta, Computer Science, Web Application for North Dakota Heritage Party, 10:30 - 12:00
- 12 Deepak Karki, Computer Science, Kathmandu Real State, 1:00-2:30
- 13 Seanan Sweeney and Gwendolen Sior, Computer Science, Robot Controls, 1:00-2:30
- 14 Courtney Snyder, Environmental Science, Mapping and Quantifying Bird Window Strikes at the SMSU Campus, 9:45-11:15
- 15 Ivan Carrillo, Cesar Carrillo, and Cooper Martens, Exercise Science, Effects of Intermittent Fasting on 100yds Swimming Time and Diving Distance in Collegiate Female Swimmers, 9:45-11:15
- 16 Jenna Borchers, Olivia Drummer, Lauren Klein, and Bryan Peralta Garces, Exercise Science, The Difference in Reaction Time Between Division II Women's Basketball Players and Softball Players, 10:30 - 12:00
- 17 Daniel Jonah, Steven Nava, and Marshawn Reese, Exercise Science, The Effects of Active and Passive Rehearsal on Field Reaction Time in College Football Athletes, 1:00-2:30
- 18..... Kendra Moyars, Ethan Goldman, and Teresa Tynio, Hospitality Management, Examining Student's Experience and their Satisfaction on the 2021 Southwest Minnesota State University Homecoming Events, 9:45-11:15
- 19..... Jill Remmele, Sara Pistello, and Lenna Ribar, Hospitality Management, Measuring Southwest Minnesota State University Student Satisfaction of Chartwells Residential Dining, 10:30 - 12:00
- 20..... Deepak Sharma, Mathematics, Approximate Solutions of Nonlinear Algebraic Systems using Power Series Method, 9:45-11:15
- 21..... Robert Shields, Mathematics, The Incompleteness of Mathematics, 9:45-11:15

- 22Alexandrea Samuelson, Mathematics, Solving Sudoku with Mathematical Methods, 1:00-2:30
- 23Olivia Drummer, Katelyn Johnson, Joy Krossschell, and Madelyn Wade, Psychology, Cognitive Control Affects Memory for Distracting Information, 10:30 - 12:00
- 24Courtney Hedeem, Julianne Pankow, Isabella Rickmyer, and Abigail Satterlee, Psychology, Cognitive Control and Spontaneous Recognition Memory of Distracting Information, 1:00-2:30
- 25Gracie Lenz and Madelyn Wade, Psychology, Pessimistic Vs. Optimistic COVID-19 Outlook: Effects on Meaning in Life, 1:00-2:30

POSTER PRESENTATION SESSION B

SMSU Student Center Upper Level (SC 216)

Posters displayed 8:30AM – 5:00PM

Times shown indicate when authors will be present at the poster *Communication Studies, History, Music, Philosophy, Political Science, and Theatre*

- 26Sarah Spieker, Communication Studies, SMSU Student Performance Anxiety: Public Speaking vs. Musical Performances, 9:45-11:15
- 27.....Rylie Brown, Communication Studies, Are Female Athletes Treated Differently Than Male Athletes? 10:30 - 12:00
- 28.....Morgan Johnson, Communication Studies, Press Secretary Non-Verbals, 10:30 - 12:00
- 29.....Hanna Vos, Communication Studies, Nonverbal Immediacy Behavior of YouTubers, 1:00-2:30
- 30Darren Winkelman, Communication Studies, The Suspense of the Prehistoric: Jurassic Park, 1:00-2:30
- 31Kristen Neumann and Devyn Halvorson, Communication Studies, Impression Management Via Personal Appearance of University Faculty Who Identify as Women, 1:00-2:30
- 32Adihia Bell, Communication Studies, Words Is Strength: Motivating The Collegiate Athlete, 2:30-4:00
- 33Neil Hanson, History, The Miracle on Ice, 9:45-11:15
- 34Palmer Hittesdorf, History, How German Prisoners-of-War Helped Alleviate The Labor Shortage in Sleepy Eye, Minnesota During the Second World War, 9:45-11:15
- 35Cheyenne Volk, Music, "Già il sole dal Gange" and "Le Violette": A Stylistic Comparison of the Works by Alessandro Scarlatti, 9:45-11:15
- 36Kevin Totusek, Music, Differences Between Writing a Jazz Chart and a Classical Composition, 10:30 - 12:00
- 37Megan Thooft, Music, Mozart's Cosi Fan Tutti: Comedy or Misogyny? 10:30 - 12:00
- 38Alexis Christensen, Music, Toru Takemitsu and His "Air", 2:30-4:00
- 39Jenna Vick, Music, A Comparative Analysis of Selections from the Funny Marimba Book by Nebojsa Jovan Zivkovic, 2:30-4:00
- 40Carter McLaughlin, Philosophy, Using Rawls' Veil of Ignorance to Colonize Space, 1:00-2:30
- 41Carter McLaughlin, Philosophy, Space Exploration: A Philosophical Cost-Benefit Analysis, 2:30-4:00
- 42Matthew Hartley, Political Science, Prospects for Broadband Expansion in Minnesota, 10:30 - 12:00
- 43Tucker Machart, Political Science, The Effects of Coronavirus on Law Enforcement in Greater Minnesota, 1:00-2:30
- 44Jesutofunmi Segun-Alao, Political Science, Immigrants in the Greater Minnesota Workforce, 2:30-4:00
- 45Molly Green, Theatre, Joe Dulude ii, 9:45-11:15
- 46Dimitri Richard, Theatre, The Illusion of Age Makeup, 9:45-11:15

- 47 Colton Jensen, Theatre, The Makeup of Mrs. Doubtfire, 9:45-11:154
- 48 Bryn Mongeau, Theatre, Blurring the Binary - The History of Drag, 10:30 - 12:00
- 49 Alexander Duus, Theatre, Creating Pennywise, 10:30 - 12:00
- 50 Alexis Christensen, Theatre, The History and Development of Makeup in Kabuki, 10:30 - 12:00
- 51 Domonique McPhail, Theatre, Radium in Cosmetics, 1:00-2:30
- 52 Matthew Hartley, Theatre, How Makeup Contributes to Coulrophobia, 1:00-2:30
- 53 Brady Berg, Theatre, Villain Makeup in the Bond Films, 1:00-2:30
- 54 Allyson Thuringer, Theatre Dangerous Makeup: the Wizard of Oz, 2:30-4:00
- 55 Emma Lipinski, Theatre, Egyptian Stage Make-Up Application Process, 2:30-4:00
- 56 TJ Tjeerdsma, Theatre, Zombie TV and Movie Makeup, 2:30-4:00

**CLOSING SESSIONS AND
PRESENTATION OF LIBRARY RESEARCH AWARD**

SMSU Conference Center Upper Level & Zoom
Zoom Link: <https://minnstate.zoom.us/j/98546707508>
Password: URC2021
Room Moderator: Dr. Alyssa Anderson

- 4:30 Closing Remarks and Presentation of Library Research Award

Keynote Address: *Life Purpose: How College and Career Leads to One's Calling*

Keynote Speaker: **Tracy Rosenberg**, M.F.A Creative Writing;
M.S. Kinesiology and Exercise Science
Educator and Grassland Restorationist

Tracy Rosenberg is an educator that believes in life-long learning as personal regenerative growth. She holds an undergraduate degree in Secondary Education, a master's degree in Exercise Science, and a Master's of Fine Arts degree in Creative Nonfiction.

Her journey has taken a circuitous route from an Iowa farmstead where her family raised cattle on pasture while growing commodity crops, but then sod-busted until there was a total cropland conversion by the time she'd graduated from high school. Her second life chapter was an urbanite in Des Moines, raising her family while earning two master's



degrees, managing a successful wellness consulting business, and pursuing separate volunteer work with indigenous populations in the Southwest. She later became faculty at a tribal college on the Lake Traverse Reservation teaching English courses and environmental science while stewarding her own rangelands—nearly a thousand acres of Northern tallgrass remnant in the prairie pothole region of northeast South Dakota where she's circled back to agricultural work.

Today, Rosenberg's work ethic is driven by the rapid decline of biodiversity; grasslands continue to be converted to corn, wheat, and soy monocultures by industrial agriculture. As a restoration grass farmer, she believes that the grasslands are not poor land, rough land, or wasteland, but is the most important ecosystem in North America that's disappearing at a disturbing rate. The retreat of the last glaciers gave birth to a vital ecosystem that stretches from Texas to Canada; South Dakota holds a unique position of offering prairie habitat as well as potholes and wetlands for migrating waterfowl. Native prairie is filled with an abundance of native grasses and herbaceous forbs, roots that may reach twelve feet deep anchoring soils rich with microbes, nourishing grazing herds, providing habitat to badgers, ground squirrels, foxes, coyotes, insects, and grassland birds like bobolinks, meadowlarks, and grasshopper sparrows. Her rangeland work includes intensive management grazing, prescribed fire, integrated pest management, and seed harvest and redistribution, in an effort to save a contiguous tract of virgin prairie.

Her most recent rangeland project includes installation of a three-mile interpretive trail for private tours, complete with plant identification markers, QR Codes for smartphones, and an option for Dakota signage for local indigenous groups that are striving to revitalize their native language while recovering traditional ecological knowledge.

Rosenberg's keynote address will use her own life's trajectory to discuss the intersect between career and calling, that life isn't a straight line, but often a circuitous journey: *Life Purpose: How College and Career Leads to One's Calling*

Oral Presentation Abstracts

Oral Session A – Upper Level Conference Center

*Biology, Environmental Science,
Philosophy, and Political Science*

1

Title: Hobbes, Machiavelli, and Roblox

Presenter(s): Zachary Stute

Presentation time: 10:00

Advisor: Dr. Brett Gaul (Philosophy)

Abstract: Hobbes and Machiavelli are a pair of philosophers rather infamous for their cynical and bleak outlooks on the nature of society and power, with the usefulness and accuracy of their ideas being questioned for a long time. One unlikely place where their ideas prevail, though, is within the virtual confines of a Roblox videogame. Through an analysis of the gameplay and what it incentivizes as optimal, the themes of the politics of Hobbes and Machiavelli are definitely detectable. The ultimate takeaway from this game and its inadvertent philosophical theming is that the observations and conjecture of these two authors can be demonstrated in this simulation of a society, lending credence to their ideas.

2

Title: Causes of Metro vs. Greater Minnesota
School Funding Disparities

Presenter(s): Ryan Fohrman

Presentation time: 10:15

Advisor: Dr. David Sturrock (Political Science)

Abstract: Within all levels of government, the problem of how to best allocate scarce resources gets addressed in some compacity. More specifically, the issue of how to best allocate E-12 government education funds in Minnesota gets addressed, in part, by the various components of the general education revenue program. Through cross-comparison of funding received by metro area schools versus schools in Greater Minnesota, this project aims to find the reasons behind present education funding disparities. While it is largely recognized that poverty, disabilities, and school attendance numbers increase funds to certain school districts, there are many more factors to take into consideration, such as what districts these additional funds get taken from. In the end, it is recognized that more consideration needs to

be taken when distributing government funds for E-12 education.

3

Title: Broadband: Connecting Rural America

Presenter(s): Cory Becker

Presentation time: 10:30

Advisor: Dr. David Sturrock (Political Science)

Abstract: Broadband is an important issue for millions across America, specifically, Greater Minnesota. Connectivity, or lack of it, affects Americans in their day-to-day lives. This was further showcased during the COVID-19 pandemic with millions of Americans working from home, and digital learning from elementary school to college. Hundreds of policy forums, think tanks and government agencies have dived into the topic to analyze and see what can be done to assist in getting more Americans connected. Governments from township boards to the President of the United States have all acknowledged this as an important issue and vowed to help. While the demand for internet increases, with new technology constantly being invented, the infrastructure of the internet cannot provide for the new devices. With all levels of government being involved, it also presents a challenge. Each level of government looks for funding help from the others. This in turn has left much work to be done. Many think of internet as a luxury, but 2020 showed that broadband is a necessity not a luxury.

4

Title: Does Duluth Need the Northern Lights
Express?

Presenter(s): Dylan Lauer

Presentation time: 11:00

Advisor: Dr. David Sturrock (Political Science)

Abstract: The Northern Lights Express (NLX) is a proposed passenger train service that would go from Duluth to Minneapolis. In my research, I found that supporters of the NLX assert that the project will provide an alternate form of transportation in Minnesota, increase tourism and give passengers an easier commute to the Twin Cities. Those in opposition believe the project is too costly, doubt it will break even on the \$19 million needed to operate it each year and fear the potential consequences of putting passenger trains on existing BNSF freight rails. The NLX has yet to receive funding to begin construction, but that could change as Minnesota is set to receive \$818 million from the federal government to improve public transportation through the Infrastructure Investment and Jobs Act. I believe that the NLX would benefit Duluth, but the positive

effects would not be seen in other areas of Greater Minnesota.

5

Title: The Consistency of Aggression in Madagascar Hissing Cockroaches and its Relation to Body Size

Presenter(s): Joey Heinen

Presentation time: 11:15

Advisor: Dr. Alyssa Anderson (Biology)

Abstract: Male Madagascar hissing cockroaches (*Gromphadorhina portentosa*) rely on aggressive displays to establish a hierarchy within their social groups and prevent fighting. There is no consensus whether cockroach aggression correlates with body size. This experiment aims to determine whether body size affects aggression in similarly sized males, as well as to measure the consistency in aggression against rivals of different sizes. Cockroaches were divided into small, intermediate and large size classes and individuals were paired against others in the same size class to create a personality profile. Subsequently, they were paired with males of different sizes to determine whether aggression levels were static or adaptive. Data were analyzed using Chi-squared tests. Preliminary results suggest no strong correlation between body size and aggression. These findings allow us to better understand the species's behavior for conservation and husbandry purposes, as well as how social hierarchies may work in other species.

6

Title: The Change in Biota from Edge Effects in a Minnesota Tallgrass Prairie

Presenter(s): Kaytlen Heacock

Presentation time: 11:30

Advisor: Dr. Thomas Dilley (Environmental Science)

Abstract: The U.S. Great Plains have been converted into some of the most productive croplands in the world. The Native Prairie was a very diverse ecosystem, but with the introduction of agriculture, many of these habitats have been severely disturbed. This study investigated the effects of urbanization and agriculture on a restored tallgrass prairie. Vegetation transects were conducted across three habitats in the study area: factory, cropland, and edge. Plant diversity varies between the three habitats. The cropland has four different types of plants. The factory has a different set of four plants. The edges have nine different types of plants. The Shannon-Weiner index indicates the cropland was the least diverse habitat with the edges being the most diverse. With the

Principal Component Analysis, indicates small relations between the factory plant group and the cropland plant group. It appears that edge effects do influence habitats within a restored prairie.

7

Title: The Effectiveness of Constructed Wetlands in Reducing Nutrients from Crop Tile Drainage in Rural Southwest Minnesota

Presenter(s): Courtney Snyder

Presentation time: 11:45

Advisor: Drs. Elliot Vaughan and Thomas Dilley (Environmental Science)

Abstract: Wetlands are an important part of an ecosystem. This study investigated if constructed wetlands remove nutrients from crop tile drainage systems. Samples were collected before the drainage runoff reached the wetland and as the water left the wetland to see if nutrient concentrations varied. Parameters measured include, temperature, dissolved oxygen, pH, phosphorus, and nitrate using both LaMotte test kits and LabQuest methods. Nitrate was significantly reduced as water flowed through the wetland using the LaMotte method, but the reduction was statistically insignificant using LabQuest results. Phosphorus ranged from 0.4-0.6PPM at the inlet and 0-0.2PPM at the outlet. Dissolved oxygen was also reduced from the inlet to the outlet. Parameters that increased or had no significant difference between each location were temperature and pH. Overall, the wetland did remove nutrients from crop tile drainage systems making them useful filters.

8

Title: Effects of Fertilized Diluted Feed on *Vanessa cardui*

Presenter(s): King Saenz and Jackson Vierstraete

Presentation time: 1:00

Advisor: Dr. Alyssa Anderson (Biology)

Abstract: The use of fertilizers today has shown to be beneficial in many ways, from agriculture to recreational floral beds, fertilizer is a highly used item in plant growth. While it may be beneficial, there are many indirect impacts that can be made to the environment and non-target organisms from these fertilizers. *Vanessa cardui*, known as Painted Lady Butterflies, are commonly found around the world and in many of these fertilized environments and are great representatives of non-targeted organisms. Observations of these caterpillars' behavior and survivorship were made of 3 separate groups, a control, a 5% fertilizer dilution feed, and a 10% fertilizer dilution feed. From what has been observed thus far, Painted Lady caterpillars that were reliant on

the contaminated food source were less active and had lower quality of health than those of our control suggesting that fertilizers may have a direct effect on non-target organisms.

9

Title: Abundance and Diversity of Collembola as a Result of Soil Management Practices

Presenter(s): Mikaela Lawrence

Presentation time: 1:15

Advisor: Drs. Adam Alford (Agronomy), Alyssa Anderson (Biology), Elliot Vaughan (Environmental Science)

Abstract: Collembola (Arthropoda) are important decomposers that play a vital role in the breakdown of plant and other organic matter. However, various chemical and tillage practices can harm them and their environments. Literature shows collembola aid in assessing soil substrate quality because they are found all over the world. The purpose of this study was to determine the abundance of collembola in four environments: control, corn field, garden, and organic raised bed. Twenty soil cores were taken from a control, garden, organic raised bed, and corn field environment near Lorimor, Iowa in August of 2021. The cores were allowed to sit for 24 hours in a Berlese funnel with a wide mouth container below to preserve the specimens. Preliminary data suggests the control contained the most collembola (432 specimens), and the field contained the least (155 specimens). This suggests farming practices such as tillage and chemical treatments may affect collembola population.

10

Title: Effect of Audio Stimulation on Avian Feeding Behavior

Presenter(s): Mason Johnson and Brandon Parish

Presentation time: 1:30

Advisor: Dr. Alyssa Anderson (Biology)

Abstract: Urbanization often has large impacts on animal behavior. Like many animals, birds rely on sound for their survival, and we sought to identify how these sounds effect bird behavior. Three feeders with a bird feed mixture were placed in areas easily accessed by local birds. The sounds of hawks, domestic dogs, and power tools were used for testing. Results indicated that artificially reproduced animal sounds alone appear to be insufficient to cause major disruption to feeding behavior. Anthropogenic sounds had a more prolonged and dramatic effect than natural sounds. These behavior changes, if any, are important to identify as cities grow and populations of birds adapt to more urban environments.

11

Title: Analysis of Food Preference and Selection Time on Male *Betta splendens*

Presenter(s): Katelynn Urness, MacKenzie Klett, and Mieraf Dagne

Presentation time: 1:45

Advisor: Dr. Alyssa Anderson (Biology)

Abstract: Male *Betta splendens* (Siamese fighting fish), are known for their aggressive behaviors. Beta fish show their agitation by gill flaring, fin erection, and charging. The goal of this experiment was to see how their dominance displays impacted the time it took them to choose their food. We completed a food preference study for the first five weeks while recording selection time, and the sixth week included a dominance study to see whether selection time changed with the presence of another male. Our results showed no significant difference in food preference, while selection time change depended on the fish. Knowing whether the male betta fish spent more time acquiring food or exhibiting dominant behavior can translate to males across other species who exhibit similar behavior.

12

Title: Efficacy of Essential Oils on Coccinellidae

Presenter(s): Jason Turner, Alexander Hillesheim, Nicholas Putnam, and King Blanchette

Presentation time: 2:00

Advisor: Dr. Alyssa Anderson (Biology)

Abstract: Ladybugs (Coleoptera: Coccinellida) are an insect that serves as an indicator species and feeds upon petite pests such as crop-devouring aphids. Ladybugs can also reflect and signal a biological condition of an environment. Our study highlights the effects of natural pesticides and any adverse effects on natural biological controls, such as ladybugs. We examined two types of essential oils, cedarwood and orange, used in varying amounts diluted in water to assess potency effects and overall lethality. Preliminary results show orange extract has a more lethal impact on ladybug populations in comparison to cedarwood extract. These data could be helpful when eliminating harmful pest species while at the same time protecting beneficial bystander species.

13

Title: The Effects of Permethrin on Dragonfly Nymph Behavior

Presenter(s): Casey Wahl and Alyssa Enevold

Presentation time: 2:45

Advisor: Dr. Alyssa Anderson (Biology)

Abstract: Insecticide use has increased in recent years and these pesticides, such as permethrin, a synthetic pyrenoid, can runoff into freshwater bodies, harming non-target insects including beneficial insects such as dragonfly nymphs (Insecta: Odonata). Previous research found that dragonfly nymphs cannot thrive in permethrin solutions exceeding 0.1ppb. Here, we used this quantity of permethrin to assess the effects of permethrin on dragonfly nymph behavior. Eighteen nymphs were collected from the SMSU Wildlife Area. Of these, nine were exposed to 0.1ppb permethrin twice per week, while the rest were held in pond water as a control. We predicted that the permethrin would cause abnormal behavior including aggression toward each other, slower reaction times, and death. As exposure length increased, so did differences in behavior. Of the exposed nymphs, 44% died, while no control nymphs died, supporting the hypothesis. Assessing the effects of insecticide can shine a light on the harmful impacts to non-target insects and the health of an ecosystem.

14

Title: Effects of Differing Concentrations of Pesticide on Crickets

Presenter(s): Noah Pankonin, Brandon Parish, and Trust Amitaye

Presentation time: 3:00

Advisor: Dr. Alyssa Anderson (Biology)

Abstract: Research shows that pesticides often have adverse effects on non-target insect species. Thus, it is of interest to ecologists and agronomists to understand the potential impacts of commercial and domestic pesticide use on various non-target organisms. Here, we tested the effects of differing concentrations of a domestic pesticide (Pyrethrin) on a representative non-target organism, crickets (Orthoptera: Gryllidae). Each treatment contained 20 crickets exposed to a different concentration (0, 0.1, 1.0, and 10 ppb) of the pesticide, and reactions were assessed; specifically, cricket vocalization, mortality rate, and general reaction to the pesticide were noted. After approximately three weeks, data was compiled and compared between the different treatment groups. Preliminary results indicate Pyrethrin had an adverse effect on vocalization and survival of crickets, even at low dosages. Our results are significant because Pyrethrin is commonly used in domestic

gardens where non-target organisms can be exposed to the poison, influencing their long-term vitality.

15

Title: Feeder Preferences and Their Effect on Frequency of Bird Visits

Presenter(s): Regan Truedson and Alexis Freese

Presentation time: 3:15

Advisor: Dr. Alyssa Anderson (Biology)

Abstract: Bird feeding is common in backyards. Feeders attract a variety of birds due to availability and accessibility of food, especially during winter. We aim to determine whether there is a significant difference in feeder preferences of birds. Tray, tube and suet feeders were filled with black oil sunflower seed and monitored at deciduous, coniferous, and prairie sites for two weeks. Observations were recorded with Browning Trail Cameras set to take motion-triggered videos for 30 seconds. In total, 246 birds were spotted, with the deciduous site having the most visitors at 124, followed by prairie with 85, and coniferous with 39. One-way ANOVA was used to analyze which feeders were preferred in each site. Trends show that birds preferred tray feeders most, with suet feeders next, and tube feeders last. Knowing which type of feeder birds prefer can maximize knowledge about birds, visits of bird species, and affordability of bird feeding.

16

Title: Patterns of Food Aggression and Dominance in Black-capped Chickadees (*Poecile atricapillus*)

Presenter(s): Regan Truedson and Alexis Freese

Presentation time: 3:30

Advisor: Dr. Alyssa Anderson (Biology)

Abstract: Competition occurs when resources are needed but unavailable. Birds that flock and associate with other species, such as black-capped chickadees, may experience competition. We aim to determine whether black-capped chickadees show patterns of food aggression or dominance between members of the same species or members of different species. For four weeks, three feeders were put up at three sites: prairie, deciduous, and coniferous in the SMSU Wildlife Area. After two weeks, two feeders were removed, and one remained to trigger competition. Browning Trail Cameras were used to observe dominant or submissive behaviors exhibited by black-capped chickadees. Using two chi-squared tests, we determined that there was no difference in dominance or food aggression when all three feeders were present, however differences were seen when one feeder was available. Increased competition leads to increased dominant behaviors found in

black-capped chickadees, which is useful for studies of interactions between chickadees and other species.

health of the river. This experiment can serve as a baseline for future water quality assessments of the Redwood River.

17

Title: Autotomy-Induced Stotting Behaviour in Opiliones

Presenter(s): Bailey Bingen, John Palmer, and Madelynn Singsank

Presentation time: 3:45

Advisor: Dr. Alyssa Anderson (Biology)

Abstract: Certain Opiliones (Arthropoda: Arachnida), commonly referred to as Daddy Long-Legs, are known to autotomize up to four of their legs if trapped. Despite this, studies have shown they are largely unhindered by this process. Autotomy was tested with members of a species native to the SMSU wildlife Area. Arachnids were caught, placed in terrariums, and given time to acclimatize. Each subject was then removed with one leg pinched until autotomy. Ambulation patterns and speed were recorded before and after limb loss. The study was done to explore the effects of autotomy and an investigation into an already-existing behavior for better understanding.

18

Title: Water Quality Assessment of the Redwood River in Southwest Minnesota using Macroinvertebrates as Biological Indicators

Presenter(s): Courtney Snyder, Paige Shwaluk, Madeleine Shwaluk, and Emma Polchow

Presentation time: 4:00

Advisor: Dr. Alyssa Anderson (Biology)

Abstract: Macroinvertebrates play an important role in determining the health and diversity of stream systems due to their abundance and range of tolerance levels to various pollutants. The purpose of this experiment was to conduct a longitudinal study identifying how water quality and aquatic insect communities of the Redwood River change from upstream to downstream. Water quality was assessed in fall 2021 by testing chemical parameters and collecting macroinvertebrate samples from three different locations on the Redwood River (Lyon County, MN). Data analysis from the LaMotte test kits determined there was no significant difference in water chemistry between the three locations. Preliminary results from macroinvertebrate samples suggest that species diversity is highest in the upstream location. Hilsenhoff biotic index values ranged from fair to good throughout all locations. Further inspection and identification of macroinvertebrates will help to determine the overall

Oral Session B – Charter Hall 201

*Accounting, Communication Studies,
History, Sociology and Theatre*

19

Title: Panic and Anxiety: A Poetry Program

Presenter(s): Alexander Duus

Presentation time: 10:00

Advisor: Dr. Julie Walker (Communication Studies)

Abstract: My whole life I've struggled with moderate levels of anxiety and occasional panic attacks. However, last year during the pandemic panic attacks began inhibiting my life. For the first time, I was having panic attacks in public, which was disruptive and embarrassing. Performance is one of the ways I explore experiences in my life, and I decided this year I wanted to focus on panic attacks. Thinking back to other performances I've seen about anxiety, those performances focused on either an analytical, factual, statistical approach, or how the individual has anxiety but will "overcome" it. This performance focuses on how anxiety and panic attacks impact the individual while also attempting to demonstrate and instill in the audience a feeling of panic. Poetry is the best medium to explore this topic because of the artistic style of rhythm and emphasis on words. Spoken word, itself, fits the chaotic experience of panic. I wanted to do my best to demonstrate this feeling of panic, not to just say what this is, but show it, and to make it a palpable in the performance.

20

Title: Humanity, Liminality, and Ghosts: An Oral Interpretation of "Haunt" by Carmen Maria Machado

Presenter(s): Jenna Zeug

Presentation time: 10:15

Advisor: Dr. Ben Walker (Communication Studies)

Abstract: In 1967, cultural anthropologist Victor Turner popularized the concept of liminality, where someone's identity is briefly unknown, as they transition from one identity to another. We see this in important stages in life, like when teenagers are figuring out how to stop being kids and start being adults. We also see this when people move to an entirely new career, or lose a loved one. Finding a path to the new normal is unnerving, and can lead many to wish to return to their previous identity. However, embracing uncertainty is the only way to make it through the transition. Sometimes, we just can't know.

21

Title: Repurposing the Spectacle: A DeBordian Analysis of "L'Après M"

Presenter(s): Devyn Halvorson

Presentation time: 10:30

Advisor: Dr. Ben Walker (Communication Studies)

Abstract: In France's second city, Marseille, immigrants are forced to live within concrete slabs and Syrian refugees scrawl pleading messages on cardboard signs. The only thing keeping them together is a building standing tall with the world famous golden arches. However, when COVID-19 hit and the restaurant was scheduled to be closed down there was panic in the community. In April of 2020, former employees turned the building into something that could help their community: a food bank. This sudden and dramatic shift leads many to question: how in the world did this happen? How was an abandoned McDonald's in Marseille re-appropriated for the purposes of food justice? This question will be explored through French theorist Guy Debord and his theory of "the Spectacle" who teaches us that there might be better things to add to the menu that we call life.

22

Title: Drama/Drama: A Performative Comparison of Sean Grennan's "The Tin Woman"

Presenter(s): Domonique McPhail

Presentation time: 11:15

Advisor: Drs. Ben and Julie Walker (Communication Studies)

Abstract: Often times Forensics and Theatre are seen as two opposite ends of Performing arts. In my studies I explore the differences and similarities of the two. I use Sean Grennan's "The Tin Woman" as a platform to dive deeper into how a piece might be performed different in Forensics then as in a play on stage. I look at things such as how a character might be portrayed different, how movements will vary, how the performance method might remain the same, etc.

23

Title: Physician- Assisted Suicide

Presenter(s): Kylie Kessler-Gross

Presentation time: 11:30

Advisor: Dr. Cindy Aamlid (Sociology)

Abstract: When looking at the ways we can end our pain and suffering when we have terminal incurable illness it is important to be able to have choices. Looking into this matter it is important to make sure readers have a basic understanding of the topic. The ways that I was able to do this is by comparing 6 articles with data and views of this topic. When doing

so I found that there was many different views and reasons regarding this topic. The findings of these articles were that this is a very difficult topic to talk about. There is not going to have a solution in the near future doing to be a high moral topic.

24

Title: Colonel Henry Clay Lester's actions at the Battle of Murfreesboro

Presenter(s): John Dwire

Presentation time: 1:15

Advisor: Dr. Mike Hofstetter (History)

Abstract: On July 13, 1862, Colonel Henry Clay Lester refused to engage the forces of the Confederate General, Nathan Bedford Forrest, at Murfreesboro. Colonel Lester marched his men to within half a mile of Murfreesboro then stopped. Upon discovering a Confederate unit moving toward Third Minnesota's camp at Murfreesboro, Colonel Lester refused to engage the enemy to defend or aid the soldiers at the base.

25

Title: A Regional and National Examination of the National History Standards

Presenter(s): Braeden Kluver

Presentation time: 1:30

Advisor: Dr. Mike Hofstetter (History)

Abstract: The American education system has been a catalyst for many culture wars in recent memory, and 1994 was no exception. Starting with the Bush administration, policy and lawmakers spent nearly half a decade creating standards to make American youth intellectually competitive with the rest of the globe. Unlike other standards, the National History Standards would ignite a cultural firestorm that would divide the nation about what and how children learn history. The local impact, however, was much different. Interviewing multiple educators from South Dakota, Minnesota, and Wyoming allowed for a comparison of local and national reactions to see if this particular zeitgeist would trickle down. In the end, the educators in this part of the nation saw little to any push-back but also had very little incentive to adopt activities and lessons from the National History Standard.

26

Title: Effects of 1980's Farm Crisis on Farmer

Presenter(s): Rees Lehman

Presentation time: 1:45

Advisor: Dr. Mike Hofstetter (History)

Abstract: This piece is on researching farmers in the 80's and seeing how the finance their farms

during a difficult time economically. Some objects of examination will be how was debt handled and what costs were cut to save on operating expenses.

Labor will be observed to see if any trends will be identified. Off farm income will also be examined.

Farmers and their business decisions will be examined to see who survived and who didn't.

27

Title: Burial Practices Amidst Spanish Flu

Presenter(s): Noah Streed

Presentation time: 2:00

Advisor: Dr. Mike Hofstetter (History)

Abstract: The Spanish Flu resulted in mass deaths in the United States population in the late months of 1918 posing an immense stressor on the funeral industry at the time. The industry attempted to bury the dead to their best of their ability. However, they were severely restricted in their ability to bury the mass number of corpses. Through questioning of 3 active funeral directors, research findings from 1918, and developments in modern day funeral practices, the United States funeral industry will be able to respond to a similar event in a much more responsible and pragmatic way, rather than resorting to the unbelievable methods of 1918.

28

Title: The Minnesota Massacre of 1978: An Election Like No Other

Presenter(s): Cory Becker

Presentation time: 2:15

Advisor: Dr. Mike Hofstetter (History)

Abstract: Following years of Democratic-Farmer-Labor control in Minnesota politics, Minnesota voters pitted the House of Representatives against each other. The Democratic-Farmer-Labor party had control of the Governorship, Senate, a supermajority in the House and both United States Senate seats. After the General Elections of 1978, the Minnesota House of Representatives was evenly split, 67 to 67. Minnesota Independent-Republicans gave their opponents the upset of the century. It became known in history as "The Minnesota Massacre of 1978." The Independent-Republicans won the Governorship, both United States Senate seats, and made a tie in the House of Representatives. What followed was months of bitter debate over who would control the legislative body.

29

Title: Native Boarding Schools: Dakota War-Present

Presenter(s): Carter Haugrud-Damlo

Presentation time: 2:45

Advisor: Dr. Mike Hofstetter (History)

Abstract: Ever since the U.S. and Dakota war ending in 1862, boarding schools have been a tool of assimilation for the United States of America. "Kill the Indian, Save the Man", this came from the words of Col. Richard Henry Pratt who ran the Carlisle Indian School for 25 years in the late 1800's. This idea began with what we now know as off-reservation boarding schools and had this intention of stripping Native Americans of their beliefs and self-identity. Some of the practices and traditions that were stripped from them included the following: standard uniforms, haircuts, new names, new food, and a completely new language.¹ One of the biggest factors that has been a motivation of assimilation throughout the entire history of Native boarding schools is the role of Christianity. While Christian-Government run schools thought that they had good intentions. They actually practiced cultural genocide and systematically broke down every part of the Native American way of life. They were taught that being Native was a sin and that they should be ashamed that they were even born this way. Throughout this research it will be shown the immoral and ugly truths about the United States and Christian-Government ran boarding schools.

30

Title: Drag Makeup

Presenter(s): Ojasope Ale

Presentation time: 3:00

Advisor: Prof. Sheila Tabaka (Theatre)

Abstract: Drag is magic

31

Title: Nature Fairy

Presenter(s): Jennifer Homan

Presentation time: 3:15

Advisor: Prof. Sheila Tabaka (Theatre)

Abstract: This presentation will include my makeup design, and a demonstration of some of the last steps to complete the look. "You will see a fairy becoming a part of the nature and flowers she sleeps in and helps grow." Is what the inspiration was from in the art work of fairies too.

32

Title: The Impact of The Student Loan Debt

Presenter(s): Bassam Mian

Presentation time: 3:30

Advisor: Dr. Will Thomas (Accounting)

Abstract: N/A

33

Title: How to Improve DMCA for Streamers

Presenter(s): Mark Ezenezi

Presentation time: 3:45

Advisor: Dr. Will Thomas (Accounting)

Abstract: N/A

Virtual Session Abstracts

Virtual Session A – English

Zoom Link:

<https://minnstate.zoom.us/j/6699068969>

Password: URC2021

1

Title: Archetypal Themes in Stephen King's Desperation: Setting, Plots, and Characters

Presenter(s): Autumn Hess

Presentation time: 10:00

Advisor: Dr. Ruthe Thompson (English)

Abstract: American author Stephen King has written both nonfiction and fiction works, with his fiction works taking the forms of novels, short stories, and novellas. In his 1996 novel Desperation, King employs various literary archetypes. A literary archetype is a device that has qualities or traits that are easily identifiable for readers and can be found in a literary work's settings, plots, characters, symbols, or images. This presentation examines the archetypal themes in Stephen King's Desperation: specifically, the archetypal setting, plots, and characters. The presentation will cover the wasteland/desert archetypal setting; the archetypal plots known as the journey, battle of good vs evil, the wound that never heals, boy meets girl, loss of innocence, and the initiation; and the following archetypal characters: the hero, innocent, loyal companion, devil, patriarch, everyman, and prophet.

2

Title: Tara Westover's Transformation: How Educational Standards Changed a Life

Presenter(s): Melissa Yahr

Presentation time: 10:15

Advisor: Dr. Ruthe Thompson (English)

Abstract: In her 2018 memoir, Educated, Tara Westover describes her journey to gain an education while living in a repressive Mormon household. Her determination took her from a timid high school student to an author with a degree from Cambridge University. This presentation will examine Westover's struggle through the lens of cultural materialism. We will apply goals and standards from contemporary education pedagogy to demonstrate how the pursuit of knowledge is transformational, both emotionally and intellectually.

3

Title: Archetypal Analysis of the Farmer

Presenter(s): Maggie Biegert

Presentation time: 10:45

Advisor: Dr. Ruthe Thompson (English)

Abstract: This presentation is an archetypal analysis of poets from Southwest Minnesota and beyond. It will examine the characters of the Jester and the Everyman and interpret these from a rural perspective.

Virtual Session B – Sociology, Theatre, and Psychology

Zoom Link:

<https://minnstate.zoom.us/j/91526117789>

Password: URC2021

4

Title: Working for Children

Presenter(s): Kayla Chester

Presentation time: 1:00

Advisor: Dr. Cindy Aamlid (Sociology)

Abstract: Protecting our children to ensure that they are safe is the ultimate goal of Child Protection. Neglect and sexual abuse are traumatic events that impact the lives of our children negatively and it is our job to provide the services needed to help children cope through these traumatic events. When children are removed from the home, it is our job to always aim for reunification. It is crucial that all steps are taken to try to get the children back in the home because children usually feel more safe and happy with their biological parents. If reunification is not possible, other family is always the first option otherwise we look into foster homes that would be the best fit for the child. Child Protection is very rewarding in the sense of being that support to a child that they may not have had in life.

5

Title: The Differences Between Same-Sex and Heterosexual Weddings

Presenter(s): Morgan Malakowsky

Presentation time: 1:15

Advisor: Dr. Cindy Aamlid (Sociology)

Abstract: In recent years same-sex marriage has become legalized in the United States. Sociologically, this is unknown territory for same-sex

couples because only heterosexual couples were able to marry in the past. There are many traditions and rituals that same-sex couples must decide to keep, leave out, or change for their weddings. Same-sex couples have a variety of reasons for keeping or changing traditions that have come from heterosexual marriages. Through the analysis of published articles, several distinctions and methods of handling wedding traditions have been considered by same-sex couples. This presentation will share the findings on how same-sex couples navigate wedding traditions. This will be discussed from the perspective of the Looking Glass Self.

6

Title: Youth Homelessness

Presenter(s): Molly McGough

Presentation time: 1:30

Advisor: Dr. Cindy Aamlid (Sociology)

Abstract: Youth under the age of 18 are the most unseen and vulnerable people experiencing homelessness. Not only are these youth experiencing homelessness and hunger, but they are also experiencing the turmoil of their home-life, or what they thought was home. Some families are able to assist in these situations, and some are not. The priority of helping the youth experiencing homelessness is addressing the individual and family needs moving forward in a short period of time. This includes finding a stable adult, assisting an adult to be stable, or providing the resources to a young adult without family assistance to be capable of supporting a structured and safe day to day living. This presentation will provide information on a youth homeless shelter being proposed to Dakota County, as well as information from The Bridge, which is a youth homeless shelter in the cities.

7

Title: The Make-up of the Fae

Presenter(s): Elizabeth Zoya

Presentation time: 1:45

Advisor: Dr. Sheila Tabaka (Theatre)

Abstract: The magic of makeup is powerful; it can completely change the look and construct of an individual's face. This presentation will show the design process and application of makeup to change the structure of a human's face into something that belongs in the realm of the Fae through a step-by-step demonstration of how makeup can change the structure of one's face. Watch as an everyday face turns into one that is unworldly.

8

Title: Cognitive control and spontaneous recognition memory of distracting information

Presenter(s): Amy Leervig

Presentation time: 2:00

Advisor: Dr. Benjamin Anderson (Psychology)

Abstract: Anderson et. al (2011) discussed different forms of recognition, distraction control, and involuntary memory. They introduced the Memory Stroop task, which involves studying pictures and words followed by recognition memory tests on target pictures and words superimposed with old or new distractors. The current study replicated the memory Stroop task with an additional between subject's variable of feedback or no feedback provided during the memory tests. We also included a "foils" test on previously seen distractors and a Trail Making task in which participants were timed to accurately trace numbers and letters in the correct order. We expect participants who received feedback during the Memory Stroop task to be more focused on the task, and less prone to distraction. We also hypothesize participants in the feedback condition to recognize less distractors on the foils test.

URC Student Recital

Fine Arts Theatre, 1:00pm

1

Work Performed: "Le Violette"
from *Pirro e Demetrio*, Act. III
Composer: Alessandro Scarlatti
Performer: Cheyenne Volk
Area of Study: Voice
Collaborative Pianist: Cheryl Jeska
Instructor: Brittany Rudoj
URC Project Title: "Già il sole dal Gange" and "Le Violette": A Stylistic Comparison of the Works by Alessandro Scarlatti
Advisor: Dr. Stephen Kingsury (Music)

2

Work Performed: *Air*
Composer: Toru Takemitsu
Performer: Alexis Christensen
Area of Study: Flute
Instructor: Holly Nester
URC Project Title: Toru Takemitsu and His "Air"
Advisor: Dr. John Ginocchio (Music)

3

Work Performed: *Filibuster*
Composer/Performer: Kevin Totusek (bass)
Area of Study: Composition
Performers of Work: Dr. Peter Lothringer (guitar)
Jack Elbert (drums)
Instructor: Dr. Peter Lothringer
URC Project Title: Differences Between Writing a Jazz Chart and a Classical Composition
Advisor: Dr. Peter Lothringer (Music)

4

Work Performed: "Una donna a quindici anni"
from *Così fan tutti* Act II, Scene 1
Composer: Wolfgang Amadeus Mozart
Performer: Megan Thoof
Area of Study: Voice
Collaborative Pianist: Cheryl Jeska
Instructor: Brittany Rudoj
URC Project Title: Mozart's *Così fan tutti*:
Comedy or Misogyny?
Advisor: Dr. Stephen Kingsury (Music)

5

Work Performed: *Srpska igra*
No. 9 from *Funny Marimba Book*
Composer: Nebojsa Jovan Zivkovic
Performer: Jenna Vick
Area of Study: Percussion
Instructor: Dr. Scotty Horey
URC Project Title: A Comparative Analysis of
Selections from the *Funny Marimba Book* by
Nebojsa Jovan Zivkovic
Advisor: Dr. John Ginocchio (Music)

Poster Session Abstracts

Poster Session A – Lower Level of the SMSU Conference Center

*Agribusiness, Biology, Computer Science,
Environmental Science, Exercise Science,
Hospitality Management, Mathematics &
Psychology*

1

Title: Economic Development in Brazil

Presenter(s): Cassy Platz and Ashley Zwack

Presentation time: 10:30 - 12:00

Advisor: Dr. Sang Jung (Agribusiness
Management)

Abstract: The discovery of economic development challenges faced by Brazil. Brazil is a large and extremely diverse country with high potential for becoming more developed economically, but many domestic problems hold them back. Brazil is known for their poverty and inequality, population growth, rural to urban migration, education and health, agriculture development, environment and resource, and domestic policy issues. Brazil is working to improve their economic development through foreign trade improvements. This has been challenging as a large agricultural commodity exporter, so current low raw material prices have hurt their economy. Other macroeconomic topics of concern for Brazil include inflation targeting, floating exchange rates, and a primary fiscal policy. The focus on Brazil will include their guiding principles of non-intervention, self-determination, international cooperation, and peaceful settlement of conflicts when dealing internationally with other countries. Economic development ultimately plays a key role in all these aspects.

2

Title: The Potentials and Concerns of Targeting the Type IV Pili, in Vaccination Against Infectious Bovine Keratoconjunctivitis (IBK)

Presenter(s): Alexis Freese

Presentation time: 9:45-11:15

Advisor: Dr. Sandy Craner (Biology)

Abstract: Infectious bovine keratoconjunctivitis (IBK) is a contagious eye disease in cattle caused by *Moraxella bovis*. In cases of IBK, the cow may experience impaired vision, which directly affects

factors like weight, milk production, treatment cost, and auction price. The bacteria require pili to attach to the corneal tissue. Prieto et al. (2013) tested the abilities of *M. bovis* forming a biofilm on abiotic surfaces under various culturing conditions; demonstrating that the Type IV Pili influence the development of the biofilm. Complications in creating an effective vaccine targeting the pili may result from the loss of pili as bacteria are grown. Prieto et al. (2008) tested the sheer force of bioreactors along with protective additives and their effects on piliated *M. bovis* cells. The results showed that pili were lost during the continued growth of bacteria but altering the culture conditions along with protectant additives helped maintain the pili.

3

Title: The Impact of Human-Caused Noise Pollution on Marine Mammals

Presenter(s): John Palmer

Presentation time: 10:30 - 12:00

Advisor: Drs. Sandy Craner and Alyssa Anderson
(Biology)

Abstract: Ambient noise pollution caused by human activity has negative impacts on animals, including marine mammals (cetaceans). In this survey of the topic, two articles are analyzed to present an image of our increasing noise pollution and how it affects cetaceans. Vessel noise levels were quantified in the Canadian Arctic by Kochanowicz et al., and compared to cetacean ranges using satellite tracking data, utilization distributions and indigenous knowledge. Segments of the region were found to exceed dangerous noise levels during the shipping season. In an article by Romano et al., a captive Bottlenose Dolphin and a captive Beluga Whale were exposed to increased noise, with blood samples taken before and after exposure to analyze blood chemistry. A significant change after exposure was found. Our increasing output of marine noise pollution has harmful impacts on the biology and behavior of cetaceans, and efforts should be taken to mitigate this effect.

4

Title: Effect of Soil pH on the Height of Radish Varieties

Presenter(s): Alexis Freese, Drake Vlaminck, and Stephen Emrich

Presentation time: 10:30 - 12:00

Advisor: Dr. Shelby Flint (Biology)

Abstract: Soil is important for plant growth and development. Soil provides roots with water and nutrients that are used in many metabolic reactions.

However, changes in soil pH can alter the nutrients and heavy metal concentrations in the soil directly affecting the biomass and height of the plant. In the Southwest Minnesota State University's greenhouse, three radish varieties were grown in soil with the pH being altered by acidity treatments. The goal was to demonstrate how manipulating soil pH would affect the height and biomass of the radish variety. The effects of pH treatment on plant height and biomass were analyzed by two-way ANOVA. Results showed that one radish variety was consistently larger than the others, regardless of pH treatment and for all radish varieties, biomass and height were greatest for radishes grown under control conditions and lowest for radishes growth with a treatment with a pH of 4.0.

5

Title: Assessing Plant Diversity in the SMSU Restored Prairie

Presenter(s): Noah Pankonin, Brandon Parish, Mary Grace Hinkle, and King Saenz

Presentation time: 10:30 - 12:00

Advisor: Dr. Shelby Flint

Abstract: Prairie restoration projects are an integral part of efforts to maintain or increase native plant diversity. Assessing the status of these projects through surveys of plant diversity and community composition is a key component of prairie management. To date, no such survey has been conducted in the restored prairie of the SMSU Environmental Learning Area. We conducted a timed-meander survey of plant diversity in this restored prairie, using 1-square-meter quadrats to measure abundance data for observed species. Shannon-Wiener indices of diversity were calculated for each quadrat, and the total number of species (richness) observed was compared to a prairie plant list compiled at SMSU in 2017. Preliminary results indicate greater species richness exists now compared to 2017. This research should serve as a baseline for future assessments of plant diversity in the SMSU prairie restoration, informing continued management strategies.

6

Title: The Effects of Grain-Free Diets and Taurine on Canine Dilated Cardiomyopathy

Presenter(s): Abbagail Schotter

Presentation time: 1:00-2:30

Advisor: Drs. Sandy Craner and Shelby Flint (Biology)

Abstract: Each year, more pets are dying from diet-associated Dilated Cardiomyopathy (DCM). This appears to correlate with an increase in owners

feeding grain-free diets. There are questions about whether DCM could be caused by a grain-free diet or a nutrient deficiency in taurine. Freid et al. (2021) hypothesized that a grain-free diet was causing DCM. Their retrospective study looked for a link between different signalments of DCM and diets. They found that a grain-free diet was often associated with DCM, and, when the diet was changed to a traditional diet, the DCM could be reversed. Donadelli et al. (2020) hypothesized that it was the taurine deficiency that was causing the DCM. They found that the dogs' taurine levels rose with taurine supplementation. While these two studies look at different aspects, it shows that there are many variables that need to be researched before drawing a conclusion.

7

Title: The Efficacy and Mechanism of Vitamin D in the Treatment and Prevention of Hypertension

Presenter(s): Trust Amitaye

Presentation time: 2:30-4:00

Advisor: Dr. Sandy Craner (Biology)

Abstract: Hypertension is a condition where blood pressure levels stay elevated consistently. It is a leading cause of death worldwide. Vitamin D, a fat-soluble vitamin presently known for its role in bone metabolism has been shown to have an inverse relationship with hypertension. There is however no consensus among researchers on this hypothesis, so it brings me to my question: Can vitamin D be a possible treatment for high blood pressure? Chen et al. (2014) investigated the interactions between blood pressure and vitamin D serum levels in hypertensive patients. They found that vitamin D caused a significant decrease in blood pressure levels when compared to control. Arora et al. (2015) analyzed the effect of vitamin D therapy in individuals with and at high risk of hypertension. They found that vitamin D had no effect on the blood pressure levels. These studies showed that the results of this research were not unanimous. Further studies should be done to reach a consensus.

8

Title: Comparing Plant Diversity Between a Recent and Older Prairie Restoration at Camden State Park

Presenter(s): Katelynn Urness, John Palmer, Courtney Snyder, and Alyssa Enevold

Presentation time: 2:30-4:00

Advisor: Dr. Shelby Flint (Biology)

Abstract: Plant diversity has many benefits to the environment, people, and animals who live there. In the past, Southwest Minnesota had a great deal of plant diversity within its native prairie communities

before the repurposing of land for large-scale agriculture. Recently, prairie restoration has become a topic of interest within the field of ecology, with many organizations taking part in restoring some plant communities to a state more akin to their native form. Camden State Park has several restored prairies areas planted in different years. In this study, two prairie restorations seeded in different years were surveyed, and indices of diversity were calculated to determine how diverse the communities have become in the years since. Statistics were generated to show that there is no significant difference between the levels of diversity within the two sites.

9

Title: Online Store Application

Presenter(s): David Adigun

Presentation time: 9:45-11:15

Advisor: Dr. Dan Kaiser (Computer Science)

Abstract: or the second part of my capstone, I decided to build a functioning online store using php. The store would have all the essential features that any online store would. The application was built using the Amazon store blueprint. The store was made as simple as possible so that it would be accessible and usable to anyone with a simple computer or phone and access to the internet.

The entire program was built in the xampp local server. The finished product is completely functional and has all the essential features that online store applications have. The entire application was built using php, JavaScript, bootstrap css , mysql and jquery. PHP is a general-purpose scripting language geared towards web development. JavaScript, often abbreviated as JS, is a programming language that is used in building responsive web pages.

10

Title: See-Me

Presenter(s): Suman Baniya

Presentation time: 9:45-11:15

Advisor: Dr. Dan Kaiser (Computer Science)

Abstract: 'See-Me' is web application that allows the user to compare the prices between two e-commerce stores. The app will compare two or more e-commerce businesses from Nepal. As there are many ecommerce businesses, it is desirable to have an app that can let you know which website has the best deals. See-Me was created using Python, JS, HTML and CSS.

11

Title: Web Application for North Dakota Heritage Party

Presenter(s): Camden Barta

Presentation time: 10:30 - 12:00

Advisor: Dr. Dan Kaiser (Computer Science)

Abstract: My research is on the creation and use of web applications. North Dakota Heritage Party needed a spot for people to know what they are and what they stand for, so I created a web application for them. They wanted it to be the main hub for all their newsletters, social media, policy positions, what they're about, meet the members, and a way to contact them. From the research and testing, creating portions of web apps, I found that using Angular for the frontend, Django for the backend, MySQL for the database, and a Digital Ocean droplet server would suit them best and be the most cost-effective.

12

Title: Kathmandu Real State

Presenter(s): Deepak Karki

Presentation time: 1:00-2:30

Advisor: Drs. Dan Kaiser & Kouroush Morteza pour (Computer Science)

Abstract: Kathmandu Real Estate (KRE) is a web-based application designed as an interactive user interface for its customers. The project aims to provide positive outcomes of selling and buying houses through online simplicity and navigation that provides aesthetic appearance, accuracy, and desired content for the browsing process. This project designs an online business platform for the administrators to achieve a successful eCommerce real state website. The deployment of the KRE project will allow clients, customers, and agents to browse, buy and sell listings, modify, create accounts, and communicate directly with its prospects.

13

Title: Robot Controls

Presenter(s): Seanan Sweeney and Gwendolen Sior

Presentation time: 1:00-2:30

Advisor: Drs. Dan Kaiser & Kouroush Morteza pour

Abstract: This project was created with the intention of exploring ways of operating a robot. As such, we created a robot that was built, designed, and programmed to have three methods of control. These methods consist of being controllable by a remote, being controllable by a phone app connected via Bluetooth, and being capable of operating by itself in an autonomous mode. Additionally, the robot has programmed sequences of movements which can be

initialized by both the remote and the phone application. The robot was assembled using an Elegoo Arduino uno card, an ultrasonic sensor, an IR receptor, a Bluetooth module, a driver motor card, jumping wires, and two batteries. The phone application was designed and programmed using MIT App Inventor software. All other sections of the project were programmed using C++.

14

Title: Mapping and Quantifying Bird Window Strikes at the SMSU Campus

Presenter(s): Courtney Snyder

Presentation time: 9:45-11:15

Advisor: Dr. Elliot Vaughan (Environmental Science)

Abstract: Since 1970, bird populations have declined by 29 percent, which is equivalent to about three billion birds. Approximately one billion birds die each year in the United States alone from striking windows on buildings. The purpose of this study was to map and quantify bird window strikes on the Southwest Minnesota State University (SMSU) campus and evaluate whether window strikes occur more frequently in academic buildings linked by glass hallways. Over the seven weeks of this study in fall 2021, 141 bird strikes comprising at least 32 species were observed, of which 134 died. The data show clear spatial and temporal patterns of bird strikes on the SMSU campus. Bird strikes were greatest during fall migration and around the glass links. Based on these data, making bird-safe retrofits to a small number of windows on campus could significantly reduce window strikes.

15

Title: Effects of Intermittent Fasting on 100yds Swimming Time and Diving Distance in Collegiate Female Swimmers

Presenter(s): Ivan Carrillo, Cesar Carrillo, and Cooper Martens

Presentation time: 9:45-11:15

Advisor: Dr. Taner Erdogan (Exercise Science)

Abstract: Intermittent fasting (IF) is a new form of dieting that allows you to consume a certain calorie intake in a time restricted eating period. IF was first introduced subconsciously when wars and pandemics started to ensure food supply did not run out. Recently, IF and the impact it has on sport performance is a new topic that researchers are trying to find out if there's any correlations. Four out of seven athletes' data were analyzed (Age:20.00±0.81yrs, Height:168.63±6.29cm, Weight:59.2±2.90kg). The purpose of this study is to

measure whether IF has effects on female collegiate swimmers' performance and diving distance. Swimmers would swim a pretest of 100m freestyle. A three day IF was completed between tests. Finally, swimmers would complete their 100m freestyle post-test. The 100m pre-test time was lower than the posttest (pre- posttest). There was a significant difference between pre and posttest in swimming time (58.15s–56.85s; $t_3=3.49, p<0.05$).

16

Title: The Difference in Reaction Time Between Division II Women's Basketball Players and Softball Players

Presenter(s): Jenna Borchers, Olivia Drummer, Lauren Klein, and Bryan Peralta Garces

Presentation time: 10:30 - 12:00

Advisor: Dr. Mostafa Hegazy (Exercise Science)

Abstract: Basketball players utilize power, agility, strength, speed, and reaction time to succeed in their sport. Sport specific reaction tasks have been shown to distinguish between athletes of different sports. The purpose of this study was to determine if a basketball specific choice reaction time task can distinguish between division 2 women basketball and softball players. Twelve basketball players and twelve softball players reacted to a non-sport specific task reacting to directional ques, as well as a basketball specific tasks which included different directions of attack. Softball players showed significantly faster reaction, movement, and total response times in comparison to basketball players for the non-sports specific task ($p<0.05$). These differences were non-significant for the basketball-specific task ($p>0.05$). A control group with similar responses on the non-sport specific task may give a better indication of whether the basketball-specific task could distinguish between groups, which should be investigated in future studies.

17

Title: The Effects of Active and Passive Rehearsal on Field Reaction Time in College Football Athletes

Presenter(s): Daniel Jonah, Steven Nava, and Marshawn Reese

Presentation time: 1:00-2:30

Advisor: Dr. Taner Erdogan (Exercise Science)

Abstract: All sports require a combination of strength, agility, endurance, flexibility, and balance and motor skills are critical for success in sporting activities. Reaction time is one of the factors that allows athletes to achieve high levels of performance. A total of 24 college football players (age, weight: 106.78 ± 24.74kg, height: 188.07 ± 7.63cm)

participated in the study. Participants were divided into 3 groups (Field Group-FG, Online Group-OG, Control Group-CG). All groups participated in a pre-test every other day for two weeks then a post test was carried out in the end. The purpose of this study was to observe the effectiveness of active and passive rehearsal of reaction time and identify which technique provides the best improvement for college football players in field that are sports specific. There was a significant difference between the Pre ($2.32 \pm 0.17s$) and Posttest ($2.25 \pm 0.14s$) in FG group in Tennis Ball test ($t_7=4.88$, $p<0.05$) but not in the T-test ($t_7=1.265$, $p>0.05$).

18

Title: Examining Student's Experience and their Satisfaction on the 2021 Southwest Minnesota State University Homecoming Events

Presenter(s): Kendra Moyars, Ethan Goldman, and Teresa Tynio

Presentation time: 9:45-11:15

Advisor: Dr. Yumi Lim (Hospitality Management)

Abstract: This study explored student satisfaction of the Southwest Minnesota State University (SMSU) Homecoming experience, specifically pertaining to three major events of SMSU Homecoming: Mustangs-Got-Talent, the Homecoming Bonfire, and the Homecoming Tailgate. Related experiences include event program guides, event information and signage, and event facilities and services. Self-administered questionnaires were distributed after the Homecoming events, with 74 usable responses collected. The results of the study revealed that the students were only slightly satisfied with the Homecoming event. The Homecoming Tailgate received the highest satisfaction level, followed by Mustangs-Got-Talent, and finally the Homecoming Bonfire. Regarding event-related experience, Event Information was rated the lowest, followed by Event Program, then Facilities. Recommendations on how overall satisfaction of these homecoming events can be enhanced are discussed.

19

Title: Measuring Southwest Minnesota State University Student Satisfaction of Chartwells Residential Dining

Presenter(s): Jill Remmele, Sara Pistello, and Lenna Ribar

Presentation time: 10:30 - 12:00

Advisor: Dr. Yumi Lim (Hospitality Management)

Abstract: The objective of this research was to perform an Important-Performance Analysis (IPA) on students' main dining hall experience as a service

quality measure at Southwest Minnesota State University along with their satisfaction level with their dining experience. Due to COVID-19 pandemic negatively affecting the food service industry, the perceived importance of preventive measures and their performance were specifically included in the study. Self-administered questionnaires were distributed, and 101 completed responses were collected. It was found that students' overall satisfaction level on their dining experience was relatively low. Also, the results revealed that food quality attributes including flavor & taste of food, wide assortment of food items, and unique and different food items were perceived as important attributes, but their performance was rated poorly. Practical implications/recommendations to improve overall satisfaction were discussed.

20

Title: Approximate Solutions of Nonlinear Algebraic Systems using Power Series Method

Presenter(s): Deepak Sharma

Presentation time: 9:45-11:15

Advisor: Dr. Heather Moreland (Mathematics)

Abstract: Nonlinear systems of equations occur frequently in mathematical applications. We demonstrate how the Power Series Method can be utilized to approximate solutions of such systems. Several examples are provided to illustrate the implementation of the method. These approximate solutions are compared with known exact solutions and show a high level of accuracy. Furthermore, the results we have found with this method are compared with Adman decomposition method which constructs the solution to a nonlinear system of equations as an infinite series. We demonstrate that the Power Series Method is way better to solve nonlinear system of equations than other numerical methods as it is free from round off errors and does not have a large computational cost.

21

Title: The Incompleteness of Mathematics

Presenter(s): Robert Shields

Presentation time: 9:45-11:15

Advisor: Dr. Heather Moreland (Mathematics)

Abstract: Is everything in math provable? Kurt Gödel's Incompleteness Theorems are tools that help mathematicians gain a better understanding of this question. These theorems show that for any formal system in mathematics, that formal system is neither complete nor consistent. In this project, we look at the history of how Kurt Gödel created the Incompleteness Theorems, how he proved these theorems, and

illustrate an example of the undecidability result from these theorems. Gödel's Incompleteness Theorems helped expand the fields of mathematics and logic; creating further implications in both fields. These theorems show that no system can be perfect in any field of logic and helped lay the foundations of computer science.

22

Title: Solving Sudoku with Mathematical Methods

Presenter(s): Alexandra Samuelson

Presentation time: 1:00-2:30

Advisor: Dr. Heather Moreland (Mathematics)

Abstract: Sudoku is an internationally popular game that employs strategic decision-making to solve. Using mathematical methods, one can define and solve this number assignment puzzle. This paper delves into two main categories of methods: graph theory and linear systems combined with game theory. For the first method, this paper discusses specifically graph vertex coloring. By assigning a different color to each of the indices, having each cell represented by a vertex, and cells that share a block being adjacent, completing the vertex coloring will give the unique solution of the puzzle. For the method using linear systems and game theory simultaneously, the linear system is used to define the rules and constraints of the game. Then, the game can be solved using many different strategies in game theory that comply with the linear system, which are built upon the "one-block" and "pigeon-hole" methods.

23

Title: Cognitive Control Affects Memory for Distracting Information

Presenter(s): Olivia Drummer, Katelyn Johnson, Joy Krossschell, and Madelyn Wade

Presentation time: 10:30 - 12:00

Advisor: Dr. Benjamin Anderson (Psychology)

Abstract: Spontaneous recognition, or the involuntary feeling of familiarity, occurs when an old distractor stimulus influences recognition of a target stimulus. In order to further investigate spontaneous recognition, this experiment included a feedback manipulation and tasks that require cognitive control. The Memory Stroop task involved studying words and pictures followed by recognition memory tests on target stimuli superimposed with distractor stimuli. The distractor recognition task further tested the extent to which participants were influenced by distractor stimuli. The trails task measured how fast participants can switch between tasks. We expect to find the picture superiority effect, less spontaneous recognition of distractors for participants given feedback, and less subsequent memory of distractors

for participants given feedback. We also expect to find a correlation between Trails task performance and overall distractor processing.

24

Title: Cognitive Control and Spontaneous Recognition Memory of Distracting Information

Presenter(s): Courtney Hedeem, Julianne Pankow, Isabella Rickmyer, and Abigail Satterlee

Presentation time: 1:00-2:30

Advisor: Dr. Benjamin Anderson (Psychology)

Abstract: Anderson et. al (2011) discussed different forms of recognition, distraction control, and involuntary memory. They introduced the Memory Stroop task, which involves studying pictures and words followed by recognition memory tests on target pictures and words superimposed with old or new distractors. The current study replicated the memory Stroop task with an additional between subject's variable of feedback or no feedback provided during the memory tests. We also included a "foils" test on previously seen distractors and a Trail Making task in which participants were timed to accurately trace numbers and letters in the correct order. We expect participants who received feedback during the Memory Stroop task to be more focused on the task, and less prone to distraction. We also hypothesize participants in the feedback condition to recognize less distractors on the foils test.

25

Title: Pessimistic Vs. Optimistic COVID-19 Outlook: Effects on Meaning in Life

Presenter(s): Gracie Lenz and Madelyn Wade

Presentation time: 1:00-2:30

Advisor: Dr. Laura Koenig (Psychology)

Abstract: Threat to meaning of life was examined in relation to the COVID-19 pandemic, based on the meaning maintenance model (Heine, Proulx, & Vohs, 2006). We examined if participants who were threatened with a pessimistic outlook for COVID-19 would report greater meaning in their lives. 96 participants were randomly assigned a fake newspaper editorial about COVID-19 with either an optimistic or a pessimistic perspective. We expected those with the pessimistic essay to overcome this threat manipulation by reporting more meaning in life (e.g., higher meaning, spirituality, etc.). We did not support our hypotheses: There were no significant differences in meaning in life search, religiousness, spirituality, belongingness, need to belong, or need for control scores, and we found the opposite effect as expected in meaning in life presence scores. Further analyses need to be completed on the effects of the threat for those with different political orientations and COVID-19 experiences.

Poster Session B – Student Center Upper Level

Communication Studies, History, Music, Philosophy, Political Science, & Theatre

26

Title: SMSU Student Performance Anxiety: Public Speaking VS Musical Performances

Presenter(s): Sarah Spieker

Presentation time: 9:45-11:15

Advisor: Dr. Ben Walker (Communication Studies)

Abstract: While previous research has been done on individual types of anxiety, there is not much research focusing on performance anxiety in different types of performances. In order to determine if SMSU students feel more anxious in different types of performances, two questions were proposed: How much speech anxiety do SMSU college students experience when publicly speaking? and, How much speech anxiety do SMSU college students experience when performing musically, vocally or instrumentally? Participants were asked to complete one, or two surveys on performance anxiety in different types of performances. The results showed that both types of performances cause moderate levels of anxiety in students. However, public speaking causes slightly more anxiety than musical performances. One of the main benefits of this research is that SMSU faculty and students will have a better understanding of the amount of performance anxiety SMSU students feel in various performance situations.

27

Title: Are Female Athletes Treated Differently Than Male Athletes?

Presenter(s): Rylie Brown

Presentation time: 10:30 - 12:00

Advisor: Dr. Ben Walker (Communication Studies)

Abstract: The problem involving the unfair treatment between male and female athletes has been an ongoing issue. A survey was sent out to a large majority of the SMSU women's athletes in order to come to a conclusion regarding how these athletes feel they are treated with the gender differentiation. The survey included questions about the sport they are involved in, what gender their coaches are, and some of their thoughts on how they feel they are treated compared to the men. Anticipated results will indicate that many women's collegiate athletes will

feel they are not treated fairly or equally compared to their male counterparts.

28

Title: Press Secretary Non-Verbals

Presenter(s): Morgan Johnson

Presentation time: 10:30 - 12:00

Advisor: Dr. Ben Walker (Communication Studies)

Abstract: Non-verbal communication is an essential part of communication. This is even more true when it comes to the realm of politics. In this study, non-verbals of press secretary Jen Psaki were evaluated in regard to the press conference after the Kabul Airport bombing and death of the 13 U.S. service members. There were three videos reviewed. Two of the videos were of previous standard press conferences to become familiar with Jen Psaki's non-verbals. The third video was the press conference directly addressing the situation. It was thought that the results would indicate that the verbal and non-verbal communication would align with some conflict between the communication based on the sub questions from reporters.

29

Title: Nonverbal Immediacy Behavior of YouTubers

Presenter(s): Hanna Vos

Presentation time: 1:00-2:30

Advisor: Dr. Ben Walker (Communication Studies)

Abstract: Nonverbal immediacy behavior, especially as it relates to educational and workplace settings, has been studied by other researchers in the past. However, there has been significantly less study into the nonverbal immediacy behaviors of successful YouTubers. Because nonverbal immediacy behaviors can lead to positive connections between people, one might wonder if the use of nonverbal immediacy behaviors could lead to YouTube videos performing more successfully. In this study, three recent YouTube videos of the successful and long-running YouTube channel Good Mythical Morning were studied through methods inspired by those used by other reputable studies. Within those three videos, the nonverbal immediacy behaviors of both hosts were analyzed separately. This study's expected findings include high use of nonverbal immediacy behaviors by both hosts. The particular nonverbal immediacy behaviors used by both hosts were also compared and contrasted.

30

Title: The Suspense of the Prehistoric: Jurassic Park

Presenter(s): Darren Winkelman

Presentation time: 1:00-2:30

Advisor: Dr. Ben Walker (Communication Studies)

Abstract: Have you thought what suspense can do to a person? It's a simple question but not allow people think about it all that much. Have you ever thought how it extends to movies in general? This text will give you an inside look on how suspense can pull you into a movie or in this case a very specific movie, Jurassic Park. When I set out to do this project I knew I needed to know how to spot suspense overall first. I went to multiple different sources using articles about suspense and techniques to incite suspense in an audience. I also watched the original Jurassic Park movie several times over. One of the main points I found was affect of the prehistoric wonder and fear of dinosaurs. This up and down roller coaster of beauty and danger is what gives Jurassic Park a great setting for suspense. These implications I believe come to support why I think Jurassic Park is a beautiful suspense movie.

31

Title: Impression Management Via Personal Appearance of University Faculty Who Identify as Women

Presenter(s): Kristen Neumann and Devyn Halvorson

Presentation time: 1:00-2:30

Advisor: Dr. Julie Walker (Communication Studies)

Abstract: The personal appearance of professional people who identify as women has been a topic of scrutinizing conversation for as long as women have been in the workforce, especially in academia. Through a survey and interviews, university female faculty members were asked how they handle impression management. Initial results indicate university female faculty do alter their appearance for professional and connection purposes; alteration methods and rationales were explored through interviews with participants. This study adds to the conversation about the influence and perceptions of women's professional appearance on the people around them. Additionally, this data will also be used by the SMSU's Women's Caucus to continue their drive toward equality for women in the workplace.

32

Title: Words Is Strength: Motivating the Collegiate Athlete

Presenter(s): Adihia Bell

Presentation time: 2:30-4:00

Advisor: Dr. Ben Walker (Communication Studies)

Abstract: When participating in competitive sports it is important that athlete is stimulated. Coaches are constantly learning new ways to adjust to players and different ways they can communicate with various players and stimulate them in that competitive sport. Therefore, a study was conducted using 30 players that are currently apart of the SMSU athletic program (Football). Asking these players multiple questions (Survey rating 1-5) to help understand how these players are stimulated and what truly motivates them. Each player was motivated differently and desired a different form of communication to be used by the coach. The results showed that players desire a form of motivational communication that is consistent.

33

Title: The Miracle on Ice

Presenter(s): Neil Hanson

Presentation time: 9:45-11:15

Advisor: Dr. Mike Hofstetter (History)

Abstract: N/A

34

Title: How German Prisoners-of-War Helped Alleviate The Labor Shortage in Sleepy Eye, Minnesota During the Second World War

Presenter(s): Palmer Hittesdorf

Presentation time: 9:45-11:15

Advisor: Dr. Mike Hofstetter (History)

Abstract: During World War Two, thousands of American men and women enlisted in the military and departed for the European and Pacific fronts. This subsequently created a massive labor shortage on the home front, with agricultural production taking a severe hit. Seeking to alleviate demands for labor, the United States War Manpower Commission created a program in which German prisoners of war were utilized in Minnesota's factories and farms. Creating a prisoner camp in New Ulm, the United States Government leased out these prisoners to local businesses. The California Packing Corporation plant in Sleepy Eye, Minnesota was amongst these businesses who signed contracts. Supplementing the lost civilian production in this factory, these German prisoners helped save crucial pea and corn harvests during 1944-1945. Gathering data from government reports, eyewitness testimony, and contemporary news sources, this paper discovers the impact that

these former German soldiers had on Sleepy Eye's agricultural production.

35

Title: "Già il sole dal Gange" and "Le Violette": A Stylistic Comparison of the Works by Alessandro Scarlatti

Presenter(s): Cheyenne Volk

Presentation time: 9:45-11:15

Advisor: Dr. Stephen Kingsury (Music)

Abstract: The way in which a composer creates his or her compositions changes over time. You can see the growth in how Alessandro Scarlatti writes his pieces from "Già il sole dal Gange", which he wrote at the age of nineteen, in contrast to "Le Violette", which he wrote at the age of thirty-three. It is important to see how a composer's life experiences impacts their artistic expression. To achieve these results, I studied the sheet music to both of these pieces by Scarlatti. Additionally, I studied books and articles about Scarlatti's life. Primarily, as Scarlatti aged, his pieces became more complex. His pieces also have different influences based on his age, the culture surrounding him, and his patrons. Based on these different factors, the simplicity of his earlier pieces went away, and they became more intricate, but not necessarily better.

36

Title: Differences Between Writing a Jazz Chart and a Classical Composition

Presenter(s): Kevin Totusek

Presentation time: 10:30 - 12:00

Advisor: Dr. Peter Lothringer (Music)

Abstract: Jazz and Classical music are two of the most intellectual genres of music. Yet when we hear music from these genres, we have entirely different listening experiences. What exactly is going on in each genre to make them sound the way they do? Is it the instrumentation/orchestration? Is it chord choices and progressions? What are the differences composers take into account when writing one or the other? These are questions I asked myself while writing my own jazz chart and that I will answer based on my experiences.

37

Title: Mozart's *Così fan tutti*: Comedy or Misogyny?

Presenter(s): Megan Thooff

Presentation time: 10:30 - 12:00

Advisor: Dr. Stephen Kingsury (Music)

Abstract: Some would argue that Mozart's *Così fan tutti* is problematic due to its depiction of women. The very title means "All women are like that," answering the very question posed at the beginning of the opera before it is even asked, about whether women are fickle. McLary found that though Mozart's operas are misogynistic, they are less so than other composers' works of the time mainly because he does not kill off any women in his operas. The piece from *Così* that I will be performing is comparable to an aria from another more recently written opera that tackles the themes better. As I've found through my research, *Così* is misogynistic indeed, but I think audiences can still find the opera humorous.

38

Title: Toru Takemitsu and His "Air"

Presenter(s): Alexis Christensen

Presentation time: 2:30-4:00

Advisor: Dr. John Ginocchio (Music)

Abstract: Toru Takemitsu was a Japanese composer of much renown, known in the West for music that isn't quite Western, nor Japanese. His inspirations include jazz, French music, and traditional Japanese music and philosophy. His works often consist of multiple meter changes, causing a flowing feeling instead of the constant pulse many are used to hearing. This is exemplified in his work, "Air" for unaccompanied flute. The soloist gets to play with these brushstrokes of music, as well as the interspersed silence. It features advanced flute techniques such as flutter tonguing, wavering trills, and harmonics. This project was made to introduce people to Takemitsu and his music, as well as give an example of what his music is like via "Air" for unaccompanied flute.

39

Title: A Comparative Analysis of Selections from the *Funny Marimba Book* by Nebojsa Jovan Zivkovic

Presenter(s): Jenna Vick

Presentation time: 2:30-4:00

Advisor: Dr. John Ginocchio (Music)

Abstract: Nebojsa Jovan Zivkovic is an active performer and marimba composer. Zivkovic composes pieces that are very distinct from one another through rhythmic elements, style, and structure. The ultimate goal of this research is to provide insight into Zivkovic's compositions for other music performers. To perform this research, three pieces from the *Funny Mallets Marimba Book 1* by Nebojsa Jovan Zivkovic were compared by studying the form, harmonic structure, rhythmic structure, and

technical challenges of each piece. The most significant findings were found within the tempo, time signature, and the overall style of each piece. The results confirm the diversity of Zivkovic's compositions and will help performers of his music identify the compositional similarities and differences between these pieces to help them properly interpret and perform his compositions.

40

Title: Using Rawls's Veil of Ignorance to Colonize Space

Presenter(s): Carter McLaughlin

Presentation time: 1:00-2:30

Advisor: Dr. Brett Gaul (Philosophy)

Abstract: The future of humankind is beyond our skies. In time, humans will become a multiplanetary species. As technology continues to advance and investments are made into space exploration, the next logical step will be to settle on new celestial bodies. This means there will be a need for governance and law on these new bodies; however, there currently is little legal direction to follow. This research explores the possibility of using John Rawls's Veil of Ignorance as a tool for creating a favorable extraterrestrial human society, and whether this can provide for a normative approach to the modeling of new space settlements in a way that can be agreed to by any one individual potential inhabitant.

41

Title: Space Exploration: A Philosophical Cost-Benefit Analysis

Presenter(s): Carter McLaughlin

Presentation time: 2:30-4:00

Advisor: Dr. Brett Gaul (Philosophy)

Abstract: The future for Earth is bleak. Eventually, the planet will be consumed by the Sun; effectively ending all possibility of continued habitation on the planet. While there is cause for optimism, since this death sentence will not be imposed for another 7.5 billion years, it is critical that humans work to mitigate this risk now, rather than later. There are many challenges that must be overcome before settling on new celestial bodies; however, there are many advantages for humanity by exploring and settling in space. Some major challenges that will be discussed are: 1) the cost of space exploration, 2) the inhospitableness of space and other celestial bodies, and 3) the lack of technology to actualize these goals. These concerns will be contrasted with the following benefits: 1) the ability to save the human species, 2)

technological advancement, and 3) the ability to sate human desires for exploration and growth.

42

Title: Prospects for Broadband Expansion in Minnesota

Presenter(s): Matthew Hartley

Presentation time: 10:30 - 12:00

Advisor: Dr. David Sturrock (Political Science)

Abstract: The objective of my study is to gain insight into how much of Greater Minnesota is covered by broadband, the area of Minnesota that contains suboptimal broadband, as well as the areas in Minnesota that find themselves without any service. Additionally, I have researched the organizations in place that help to facilitate broadband development across Greater Minnesota. This research project endeavors to discover how all of the different organizations work together to bring all of Minnesota into the Internet age.

43

Title: The Effects of Coronavirus on Law Enforcement in Greater Minnesota

Presenter(s): Tucker Machart

Presentation time: 1:00-2:30

Advisor: Dr. David Sturrock (Political Science)

Abstract: In this study I will use interviews, and firsthand statements from leaders of law enforcement agencies in Greater Minnesota, to discuss the effects of Covid-19 on the law enforcement profession. I will be interviewing city, county, and state departments on an array of topics from employment issues, vaccinations, civil unrest, change of practice, and more. The idea behind this research is to have a better understanding of the administration process behind law enforcement in Greater Minnesota, and how Covid-19 has affected it. In my studies, I hope to better understand how law enforcement agencies have navigated these difficult waters and can be better prepared for the future. The past, present, and future of policing will be called into question, and I will be looking at ways that the law enforcement communities in Greater Minnesota can be best fit for another situation like Covid-19.

44

Title: Immigrants in the Greater Minnesota Workforce

Presenter(s): Jesutofunmi Segun-Alao

Presentation time: 2:30-4:00

Advisor: Dr. David Sturrock (Political Science)

Abstract: The Greater Minnesota region is home to almost two million people and its economy drivers

include agriculture, mining, manufacturing, and hospitality. The Greater Minnesota regions contribute vastly to the economy of Minnesota, but the problem is there is an increasing labor shortage across its regions. This is due to the greying of the population and a decrease in the number of young people able to replace the aging population. For this project, Labor Market specialist and Regional Analyst Luke Greiner was interviewed to analyze how immigration can help this shortage and soften its impact on the economy. My conclusion indicates that shortages can be alleviated but additional help will be needed to remedy these labor shortages.

45

Title: Joe Dulude ii

Presenter(s): Molly Green

Presentation time: 9:45-11:15

Advisor: Prof. Sheila Tabaka

Abstract: Joe Dulude ii is a makeup designer who has worked on many different projects. From well known Broadway productions such as "Wicked" to movies like "Ghostbusters" and even television shows like the second season of "Castle Rock". Dulude has designed such a wide variety of makeup that almost everyone has seen at least one of his designs. He has also done a variety of master classes, presentations, and teachings during his career. Joe Dulude ii is definitely a name to remember in the makeup design industry.

Throughout his career Dulude has been nominated and won various awards. He received an Emmy nomination for his work on "Jesus Christ Superstar: Live", was the recipient of the 2017 Baker Grant for Artist in Residence at Muhlenberg, and the Local 706 Hair and Makeup Guild Award. Along with his awards and nominations Dulude is currently a President's Artist Fellow at Greenfield Community College.

46

Title: The Illusion of Age Makeup

Presenter(s): Dimitri Richard

Presentation time: 9:45-11:15

Advisor: Prof. Sheila Tabaka

Abstract: Using makeup to "age" a person is not an old concept, but what new things can be found within it? This presentation will discuss what colors, shapes and patterns make aging makeup so effective, both on stage and in motion pictures.

47

Title: The Makeup of Mrs. Doubtfire

Presenter(s): Colton Jensen

Presentation time: 9:45-11:15

Advisor: Prof. Sheila Tabaka

Abstract: My presentation will talk about the makeup that we see in both the theatrical and film versions of Mrs. Doubtfire. I will talk about the process of creating the silicone face structure used for both shows, how long they had to wear the makeup, the tasks required of the actors while in their makeup, and the process of designing the makeup designs.

48

Title: Blurring the Binary - The History of Drag

Presenter(s): Bryn Mongeau

Presentation time: 10:30 - 12:00

Advisor: Prof. Sheila Tabaka

Abstract: This presentation will be looking at the history of drag, with the intention of enlightening people who may not be aware of the persecution of cross-dressers throughout history. This presentation will show this by touching on topics like the prosecution of gay folks by government, law-enforcement, and general public. By exploring this facet of drag history we are able to see how the drag queens and kings of today are able to perform in safe spaces, and even be widely excepted. This presentation will also cover how drag performers persevered in the face of conflict, to do this I will show how drag artist put on shows in secret despite laws put in place to prevent them. The important historical drag figures that will be highlighted in this presentation are Princess Serafina, Marsha P Johnson, and RuPaul. These figures were chosen because they represent the past and present of drag.

49

Title: Creating Pennywise

Presenter(s): Alexander Duus

Presentation time: 10:30 - 12:00

Advisor: Prof. Sheila Tabaka

Abstract: This presentation will be exploring the makeup and facial prosthetic application process used to create Pennywise in the 2017 movie, "It". This presentation is mostly visual showing and describing the different stages of applying the makeup and facial prostheses used to give the character his signature look. This presentation will give the viewer a look behind the scenes to see a glimpse of what it takes to create a visually compelling character in film. I chose to explore the makeup application of Pennywise because he is a well-known pop-culture figure and his facial features are comprised of a mixture of regular

facial makeup and facial prostheses. Other characters tend to rely more heavily on one form or the other and may be less recognizable to my target audience of college students.

50

Title: The History and Development of Makeup in Kabuki

Presenter(s): Alexis Christensen

Presentation time: 10:30 - 12:00

Advisor: Prof. Sheila Tabaka

Abstract: The traditional art of Kabuki theatre is most known in the West by the one-of-a-kind sound of traditional instruments and narration, and makeup, called kumadori. Stark white faces with vibrant red or blue coloring is something that most will recognize. Using journals, researching the colors, and by studying prints of kabuki, I have learned much about its history. Kumadori was created in the Edo region by fourteen-year-old Danjuro Ichikawa in 1673 in a type of Kabuki called aragoto or "wild show". This show centered around samurai that fight the forces of evil, and for his performance, painted his face using a red and black pattern. Kumadori is not the only makeup found in kabuki, wagoto and onnagata being others, but is the most well-known. Kabuki, and subsequently kumadori and other kabuki makeup, is still around to this day, and can be viewed at Japan's National Theatre or Kabuki-za Theatre.

51

Title: Radium in Cosmetics

Presenter(s): Domonique McPhail

Presentation time: 1:00-2:30

Advisor: Prof. Sheila Tabaka

Abstract: Radium in the 1920's was used for everything, including cosmetics. In this research we will see what the cosmetics were used for, how they were applied, and lastly the effects that the radium caused. Radium was seen as a small miracle during this time period and recently it has come to light that it really wasn't all that it was made out to be. This is especially true for the girls who worked and painted with radium. However, what is still less known is that girls in this time period actually bought cosmetics containing radium to help them remain youthful and glowing. Products continued to be made despite the little success and outcome women saw when using them. After many years women started to experience the negative affects the small amount of radium used everyday had. Many developed cancer, and had major body defects.

52

Title: How Makeup Contributes to Coulrophobia

Presenter(s): Matthew Hartley

Presentation time: 1:00-2:30

Advisor: Prof. Sheila Tabaka

Abstract: The objective of my study is to determine how the makeup applied to clowns' attributes to the "scary" or "creepy" nature that some individuals feel towards them. I will be researching into Coulrophobia, the fear of clowns. Additionally, I will be looking into how makeup specifically can influence and illicit responses from individuals. From the uncanny valley effect of the exaggerated features to the mixed signals sent by the makeup's intention, I will be exploring how both of those and more contribute to the fear of clowns.

53

Title: Villain Makeup in the Bond Films

Presenter(s): Brady Berg

Presentation time: 1:00-2:30

Advisor: Prof. Sheila Tabaka

Abstract: The James Bond Franchise has often been scrutinized for its use of facial disfigurement in villains. The most recent film, No Time To Die, is a perfect example as it features multiple villains with disfigurements. The goal of this research project is to analyze the rhetorical purpose and symbolism behind each of these disfigurements in order to have a better understanding of why they are present or why this practice should be left in the past. These analyses are made by watching the Bond films, researching other analyses of the franchise, and reading accounts from individuals who worked on the franchise.

54

Title: Dangerous Makeup: the Wizard of Oz

Presenter(s): Allyson Thuringer

Presentation time: 2:30-4:00

Advisor: Prof. Sheila Tabaka

Abstract: This presentation will take a look at the makeup used to create the characters in the 1939 film the Wizard of Oz, and the hazards that came as a result of using unsafe materials. Many people do not know that one of the most easily recognizable movies of all time left numerous actors with various injuries and medical issues due to the makeup used to create these iconic characters in the land of Oz. This presentation will explore why such dangerous makeup application methods were used, and how the industry has made changes to prevent such injuries in the future.

55

Title: Egyptian Stage Make-Up Application Process

Presenter(s): Emma Lipinski

Presentation time: 2:30-4:00

Advisor: Prof. Sheila Tabaka

Abstract: I am showing the application of Egyptian stage make-up. I researched techniques that Egyptians used and then compared them to how to apply them for the stage. At the end of the process, I created make-up looks for a production of "Joseph and the Amazing Technicolor Dreamcoat." In conclusion, I found how to apply Egyptian make-up for theatre purposes.

56

Title: Zombie TV and Movie Makeup

Presenter(s): TJ Tjeerdsma

Presentation time: 2:30-4:00

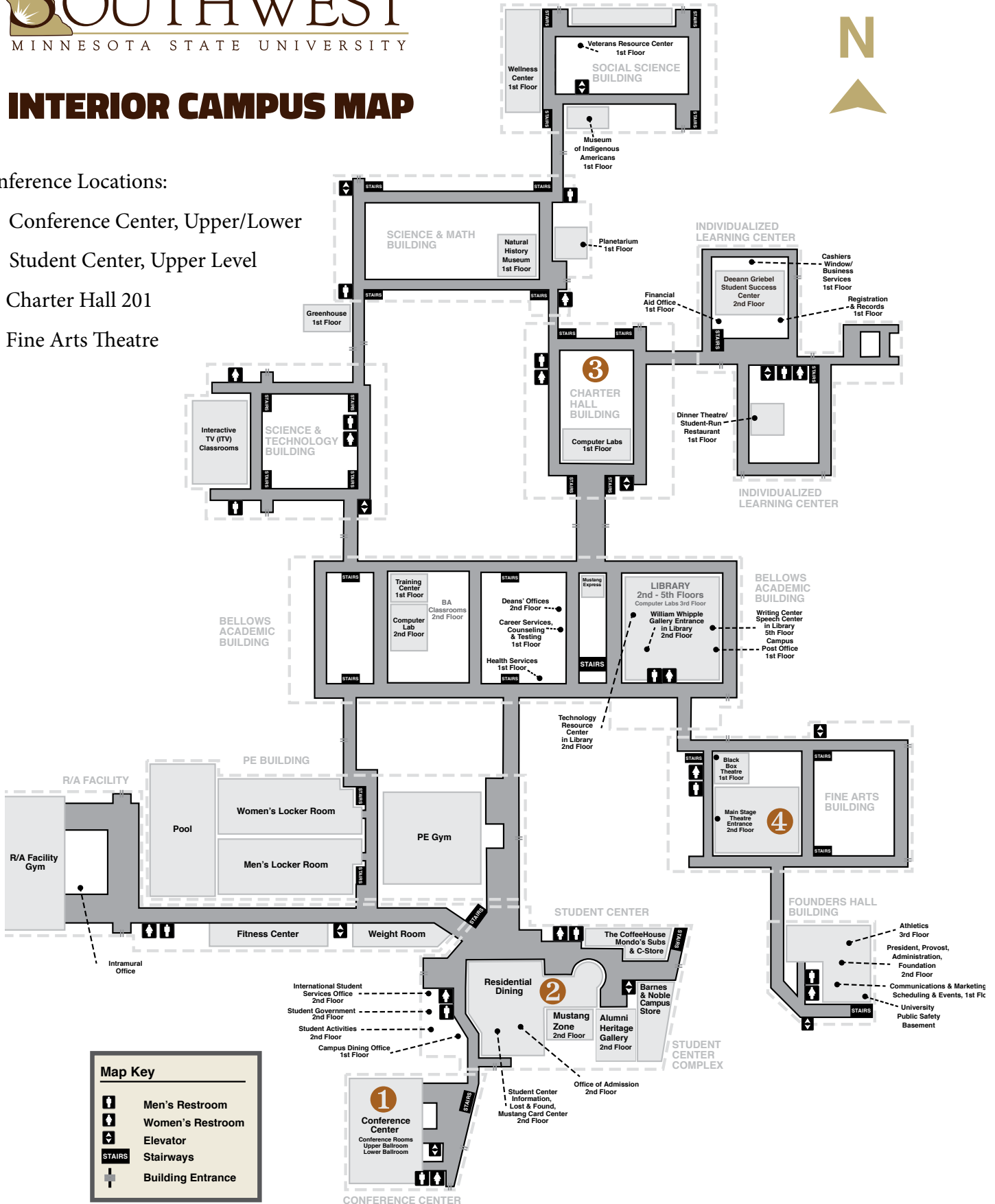
Advisor: Prof. Sheila Tabaka

Abstract: A combination of computer-generated imagery and makeup are used to create zombie looks in television shows and movies. This research project focuses on the way makeup is used in the creation of zombie looks. The goal of this research project is to compare and contrast makeup methods used to make zombie looks in various movies and television shows. These analyses are made by watching The Walking Dead, Warm Bodies, iZombie, Z-O-M-B-I-E-S, Zombieland, The Evil Dead, and more, researching the makeup methods used in the shows, and reading accounts from makeup artists who worked on these shows.

INTERIOR CAMPUS MAP

Conference Locations:

- ① Conference Center, Upper/Lower
- ② Student Center, Upper Level
- ③ Charter Hall 201
- ④ Fine Arts Theatre



Map Key

-  Men's Restroom
-  Women's Restroom
-  Elevator
-  Stairways
-  Building Entrance

DISCOVER.
ENGAGE.
LEAD.



For more information contact conference coordinators:
Dr. Alyssa Anderson (Alyssa.Anderson@SMSU.edu) or
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