

*17<sup>th</sup> Annual*  
**Undergraduate  
Research  
Conference**  
Southwest Minnesota State University

**WEDNESDAY,  
NOV. 30, 2022**

**SMSU Conference Center**

**Upper Level\* 8:30 a.m.**

*\*Keynote will also be broadcast via Zoom.*

**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.



**17<sup>th</sup> Annual Undergraduate Research Conference  
at Southwest Minnesota State University**

**WELCOME AND KEYNOTE**

**Zoom Link:** <https://minnstate.zoom.us/j/98549449437>  
Password: URC2022

- 8:30. . . . . Dr. Kumara Jayasuria, SMSU President, Opening Remarks
- 8:40. . . . . Dr. Justin Zajic, EdD, Chamberlain School District, Superintendent, Chamberlain, SD  
Keynote Address: Opportunity Knocks; When is it Going to Be Your Turn?

**ORAL SESSION**

Upper Level SMSU Conference Center & via Zoom  
**Zoom Link:** <https://minnstate.zoom.us/j/98549449437>  
Password: URC2022

*Biology, Computer Science, Environmental Science,  
Justice Administration, Management, Theatre*

- 9:45. . . . . Katelynn Urness, Environmental Science, Analysis of Microplastics in Sea Salts from Various Countries
- 10:00. . . . . Noah Pankonin, Environmental Science, Assessing Plant Diversity and Soil Respiration in a Natural and a Restored Prairie
- 10:15. . . . . Hailey Caron, Environmental Science, Water Quality Assessment of Lake Shetek and Lake Sarah in Southwest Minnesota
- 10:30. . . . . Regan Truedson, Environmental Science, Species Diversity Comparison between Two Tributaries of the Cottonwood River in Southwest Minnesota
- 10:45. . . . . BREAK
- 11:00. . . . . Alyssa Enevold, Environmental Science, Correlating Macroinvertebrates to Water Quality in the Minnesota River Mankato Watershed
- 11:15. . . . . MacKenzie Klett, Environmental Science, Winter Wind Erosion of Soil Off Farm Fields in Southwest Minnesota
- 11:30. . . . . Iyke Yeboah, Management, Assessing The Interpersonal Competence Of Southwest Minnesota State University (SMSU) Students
- 11:45. . . . . Adam Barka, Management, Managing Ethical and Social Responsibility Challenges in a Multinational Labor Force
- 12:00-1:00 LUNCH BREAK
- 1:00. . . . . Jasper Ale, Theatre, Theatrical In-Depth Research on the Seconds Shepherds Play
- 1:15. . . . . Alexander Duus, Theatre, A Dramaturgical Study of Doctor Faustus by Christopher Marlowe
- 1:30. . . . . Nijie Nauden & Lileya Kebos, Biology, Impact of the Insecticide Permethrin on Behavior, Growth, and Survival of Coccinellidae
- 1:45. . . . . Katelyn Schauer, Environmental Science, Water Quality Assessment of Cottonwood Lake Southwest Minnesota

- 2:00. . . . . Mason Johnson & Blessing Ogbonna, Biology, Where We Share with Insects
- 2:15. . . . . Katelynn Urness, MacKenzie Klett, & Alyssa Enevold, Biology, Survey of Insect Pollinator Diversity in the SMSU Prairie and Pollinator Plots
- 2:30. . . . . BREAK
- 2:45. . . . . Bityana Yishak, Computer Science, Chrome Extension
- 3:00. . . . . Molly Green, Theatre, A Dramaturgical Study of Shakespeare's A Midsummer Night's Dream
- 3:15. . . . . Colton Jensen, Theatre, Commedia Dell'arte and The Deceived Ones
- 3:30. . . . . Tailer Benson, Theatre, A Deep Dive into "The Scottish Play"
- 3:45. . . . . Brady Berg, Theatre, William Shakespeare's The Taming of The Shrew: Story Origins and Historical Contexts

**MID-MORNING VIRTUAL SESSIONS**

VIA ZOOM - 10:00 - 11:45AM

**Zoom Link: <https://minnstate.zoom.us/j/91568192105>**

Password: URC2022

Room Moderators: Kaitlyn Giles & Prof. Sheila Tabaka

*Sociology, Theatre*

- 10:00. . . . . Kody Moorese, Sociology, Why Believing in Alien Life is Deviant
- 10:15. . . . . Andrew Scheiber, Theatre, Lysistrata: A Dramaturgical Analysis
- 10:30. . . . . Andrew Ryan, Theatre, Medea
- 10:45. . . . . Emma Stringer, Theatre, Sound Editing and Design
- 11:00. . . . . Christian Tesch, Theatre, The Mandrake
- 11:15. . . . . Shawn Bollinger, Theatre, The Merchant Of Venice
- 11:30. . . . . Zachary Thompson, Theatre, Dramaturgical Project on Post-Apocalyptic Hamlet

VIA ZOOM - 10:00 - 11:45AM

**Zoom Link: <https://minnstate.zoom.us/j/99826391136>**

Password: URC2022

Room Moderators: Matt Suby & Dr. Ben Walker

*Psychology, Communication Studies*

- 10:00. . . . . Pamela Crislip & Anna Stroh, Psychology, How Has COVID Affected People's Orientation of Time
- 10:15. . . . . Katelyn Nichols, Communication Studies, How Argumentative are SMSU Volleyball Players when the Result of a Play is in Question?
- 10:30. . . . . Samuel Lund, Communication Studies, Argumentativeness for Grading Disputes
- 10:45. . . . . Shantel Quaintance, Communication Studies, Argumentation in LGBTQ+ Community Regarding Stereotyping in Social Media Platforms
- 11:00. . . . . Jim Radloff, Communication Studies, Education Department Students' Comfort Level Discussing Politics and Religion
- 11:15. . . . . Anna Reiner & Yesenia Gomez Ciriaco, Communication Studies, How Students Living on Campus Deal with Arguments that Arise

**EARLY AFTERNOON VIRTUAL SESSION**

VIA ZOOM - 1:00 - 2:30PM

**Zoom Link: <https://minnstate.zoom.us/j/93320582609>**

Password: URC2022

Room Moderators: Kaitlyn Giles & Dr. Sang Jung

*Agribusiness Management*

- 1:00. . . . . Isaac Nett, Agribusiness Management, China’s Agricultural Economic Boom
- 1:15. . . . . Hope Hicks & Luke Grannes, Agribusiness Management, Agricultural Economic Development in Mexico
- 1:30. . . . . Ruby Radunz & Emily Ratajczak, Agribusiness Management, Agricultural Economic Development in Peru and Venezuela
- 1:45. . . . . Gina Huhnerkoch & Stephanie Eisenbraun, Agribusiness Management, Agricultural Economic Development in the Dominican Republic
- 2:00. . . . . Tallin Johnson, Agribusiness Management, Agricultural Economic Development in Peru
- 2:15. . . . . Brayden Tofteland, Agribusiness Management, Agri-Economic Development of Kenya

**LATE AFTERNOON VIRTUAL SESSION**

VIA ZOOM - 2:45 - 4:00PM

**Zoom Link: <https://minnstate.zoom.us/j/93320582609>**

Password: URC2022

Room Moderators: Dr. Sang Jung & Melissa Scholten

*Agribusiness Management, Communication Studies, Sociology, Theatre*

- 2:45. . . . . Jack Hanson, Agribusiness Management, The Impact of Agriculture in Brazil
- 3:00. . . . . Kenzie Christensen, Communication Studies, First Years Verbal Aggressiveness Online
- 3:15. . . . . Cassidy Hoffmann & Ashley Trongard, Agribusiness Management, Agricultural Economic Development Issues in the Republic
- 3:30. . . . . Tracy Munsterman, Sociology, COVID-19, School Closures, and the Effect on Students
- 3:45. . . . . Cole Race, Communication Studies, To What Extend do Sports Fans Tolerate Arguments with Others?

**STUDENT RECITALS**

Fine Arts Theatre

1:00 - 1:50PM

Harrison Rigenhagen-Risch, Music: The Sound of a Snare

Daniel Junker, Music: Songs of Travel: How Music Tells a Story

Sydney Diebold, Music: Compositional and Technical Comparisons of Traditional and Novelty Snare Drum Literature

Cheyenne Volk, Music: The Compositional Devices used in “A Walk Through the Forest” by Cheyenne Volk

### POSTER SESSION

Lower Level of the SMSU Conference Center

Posters displayed 8:30AM - 4:30PM

*Biology, Communication Studies, Computer Science, English,  
Environmental Science, Exercise Science, History,  
Hospitality Management, Management Mathematics, Music,  
Philosophy, Political Science, Psychology, Sociology, Spanish*

- 1 . . . . . Mason Johnson, Biology, HLA Manipulation by Breast Cancer Leads to Increased Immune Evasiveness, 9:45-11:15
- 2 . . . . . Emma Polchow, Biology, The Effect of Fatty Acids on Rheumatoid Arthritis, 10:30-12:00
- 3 . . . . . Morgan Hughes, Biology, The Role of Interleukin-6 and Interleukin-8 in Post-Operative Delirium, 10:30-12:00
- 4 . . . . . Addison Schroeder, Claudia Lensing, & Trent Paulsen, Biology, Interspecific Competition between Duckweed (*Lemna minor*) and Algae in a Simulated Eutrophic Environment, 10:30-12:00
- 5 . . . . . Addison Schroeder, Biology, Methylmercury Bioaccumulation in Marine Mammals and Neurotoxic Effects on Indigenous Peoples in the Canadian Arctic, 1:00-2:30
- 6 . . . . . Morgan Hughes, Kaaryna Smidel, & Franky Sesay, Biology, Plant Diversity in Vegetative Plots on Southwest Minnesota State University's Campus, 1:00-2:30
- 7 . . . . . Brandon Medina, Biology, Optimizing Carnivorous Plant Growth for Increase Plumbagin Production, 1:00-2:30
- 8 . . . . . Brandon Medina, Lileya Kebos, & Madison Foutz, Biology, Effects of Imidacloprid on Germination Rate and Biomass Between Monocots and Dicots, 2:30-4:00
- 9 . . . . . Regan Truedson, Biology, Using Pheromones as a Control for Sea Lamprey Population, 2:30-4:00
- 10 . . . . . Zachary Stute, Communication Studies, Tolerance for Disagreement Among SMSU Faculty, 9:45-11:15
- 11 . . . . . Sebastian Flores, Communication Studies, Tolerance for Disagreement in Minorities, 9:45-11:15
- 12 . . . . . Cassy Herding, Communication Studies, Comparing Levels of Argumentativeness Between SMSU Communication and Justice Administration Majors, 9:45-11:15
- 13 . . . . . Amanda Meyer, Communication Studies, Argumentativeness of Undergraduate Education Majors at SMSU, 10:30-12:00
- 14 . . . . . Tailer Benson, Communication Studies, The LGBTQ+ Community in Small Towns, 1:00-2:30
- 15 . . . . . Devyn Halvorson, Communication Studies, The Sexualization of Women in Political Positions, 1:00-2:30
- 16 . . . . . Kharmen Saysirisanh & Jennifer Aguilar, Communication Studies, Comparing Argumentative Levels of Abortion on Social Media with SMSU Students, 2:30-4:00
- 17 . . . . . Raymond Leonard & Jacob Myers, Communication Studies, How do Undergraduate Students who Work in the Food Industry Feel when Arguing with Each Other? 2:30-4:00
- 18 . . . . . Jessica Boafoh, Communication Studies, To What Extent does Social Media have Effect on College Students, 2:30-4:00
- 19 . . . . . Tesfa Desta, Computer Science. Interactive Chatbot for IT Support, 9:45-11:15
- 20 . . . . . Nick Polfliet, Computer Science, Performing Business Processes using Robotics, 9:45-11:15
- 21 . . . . . Doran Samples, Computer Science, FitHelp Application with Tkinter, 10:30-12:00

- 22 . . . . . Ridip Prajapati, Computer Science, D'Square Cafe (Webpage), 1:00-2:30
- 23 . . . . . Deepak Sharma, Computer Science, Creating an Online Website for Restaurant, 1:00-2:30
- 24 . . . . . Ansar Kassim, Computer Science, Project Management Ticketing System, 1:00-2:30
- 25 . . . . . Patrick Cassidy, Computer Science, Table Tennis in VR, 2:30-4:00
- 26 . . . . . Natalia Mila Florez, English, What is Technical Writing? What Does a Technical Writer do in the Workfield? 9:45-11:15
- 27 . . . . . Trent Paulsen & Natalie Jorschumb, Environmental Science, Analyzing Bird Deaths Relating to Window Strikes on the SMSU Campus, 9:45-11:15
- 28 . . . . . Noah Pankonin, Environmental Science, Effects of Salinity on Germination and Biomass Production of Prairie Cordgrass and American Slough Grass, 1:00-2:30
- 29 . . . . . Candace Thomas, Environmental Science, Measurement and Analysis of Key Water Quality Parameters in the Redwood River near Marshall, MN, 2:30-4:00
- 30 . . . . . Rachel Fink, Alisa Bengen, Morgan Hughes & Madi Heiderscheidt, Environmental Science, The Effects of Salinity on the Germination of *Panicum virgatum*, 2:30-4:00
- 31 . . . . . Evan Oetter & Onte Burns, Exercise Science, Effects of in Season Training on Agility and Physiological Variables in Collegiate Division II Football Players in Different Positions, 9:45-11:15
- 32 . . . . . Zachary Stute, History, The City, the Cooperative, and the Company: A Fight for Power, 10:30-12:00
- 33 . . . . . Nathaniel Morrow, Sawad Sani & Cordell Plass, Hospitality Management, Acceptance of Self-Service Technology in the Hotel Industry, 2:30-4:00
- 34 . . . . . Ebuka Aniebonam, Management, Leadership Styles: A Review of Literature on Transformational and Transactional Leadership Styles, 10:30-12:00
- 35 . . . . . Tayyaba Rehman, Management, The Impact of Leadership Competency on Project Success with the Moderating Role of Role Conflict: A Study based on the Telecom Industry of Pakistan, 1:00-2:30
- 36 . . . . . Annika Freiburger, Management, The Effects of Destructive Management on Organizational Performance, 1:00-2:30
- 37 . . . . . Esther Oluborode, Management, Gender Differences in Leadership Styles, 2:30-4:00
- 38 . . . . . Biruk Ayalew, Math, Cryptography: The Mathematics Behind RSA Public Key Cryptosystem, 1:00-2:30
- 39 . . . . . Omar Abouel Maaty, Math, Using Graph Theory to Analyze University Course Scheduling, 1:00-2:30
- 40 . . . . . Levi Hedman, Math, Modeling, Analyzing, and Animating the Nonlinear Damped Pendulum, 2:30-4:00
- 41 . . . . . Cheyenne Volk, Music, The Compositional Devices used in "A Walk Through the Forest" by Cheyenne Volk, 9:45-11:15
- 42 . . . . . Daniel Junker, Music, Songs of Travel: How Music tells a Story, 9:45-11:15
- 43 . . . . . Sydney Diebold, Music, Compositional and Technical Comparisons of Traditional and Novelty Snare Drum Literature, 9:45-11:15
- 44 . . . . . Harrison Rigenhagen-Risch, Music, The Sound of a Snare, 10:30-12:00
- 45 . . . . . Jessica Stai, Philosophy, Why a Woman's Perspective is Beneficial to Ethics? 9:45-11:15
- 46 . . . . . Terry Van Note, Philosophy, Would it be Ethical to let a Child be Born and Raised in Space? 10:30-12:00
- 47 . . . . . Shealyn Tom, Philosophy, Is Lying ever Morally Permissible? If so, When? Why? 10:30-12:00
- 48 . . . . . Braeden Kluver, Philosophy, Ethics of Armageddon, 2:30-4:00

- 49 . . . . . Evan Schotzko, Philosophy, Is Contemplation Central to Happiness? 2:30-4:00
- 50 . . . . . Troy Nelson, Political Science, Financial Oversight Challenges with Minnesota’s Community Residential Service Programs, 10:30-12:00
- 51 . . . . . Emily Vos, Emily Kern, Kaia Jordahl, & Sabrina Condelli, Psychology, Is Perception Perfection? Task Complexity and Perceived Time, A Prospective Design, 1:00-2:30
- 52 . . . . . Courtenay Leonard & Deborah Leier, Psychology, The Effect of Dynamic Visual Noise on Spatial Imagery, Size Perception and Recognition Memory, 1:00-2:30
- 53 . . . . . Matthew Maloney & Allison Quarrella, Psychology, Time Perception During COVID-19: An Examination of How Ego- and Time-Moving Perspectives Have Affected the Perception of Time During and after the COVID-19 Pandemic Quarantine, 2:30-4:00
- 54 . . . . . Emily Skluzacek, Anna Clark, Jessica Stai, & Katherine Holcomb, Psychology, Effects of Observing Facial Expressions on Time Perception, 2:30-4:00
- 55 . . . . . Emily Vos, Psychology and Sociology, Is Alcohol a Deal-Breaker? Alcohol as a Valued Factor in Romantic Relationship Formation, 2:30-4:00
- 56 . . . . . Nye Becker, Spanish, Agricultural Economic Development in Argentina, 1:00-2:30

**CLOSING SESSION & LIBRARY RESEARCH AWARD ANNOUNCEMENT**

Upper Level SMSU Conference Center & Zoom  
**Zoom Link: <https://minnstate.zoom.us/j/98549449437>**  
Password: URC2022

- 4:15. . . . . Closing Remarks and presentation of Library Research Award



**Keynote Address: “Opportunity Knocks; when is it going to be your turn?”**

**Keynote Speaker: Dr. Justin Zajic, EdD**

Justin Zajic currently resides in Chamberlain, South Dakota with his wife, Kacie Zajic, and three children. Dr. Zajic graduated SMSU in 2007 with a Bachelor of Arts degree in Social Studies Education. After graduation from Southwest Minnesota State University, Dr. Zajic moved to South Dakota to teach social Studies and pursued a Master in American History, a Specialist Degree in PK-12 Administration, and a doctoral degree in PK-12 Administration from the University of South Dakota.

In his professional career, Dr. Zajic has worked as a middle school social studies teacher, college professor, middle school principal and superintendent of schools. In each of these roles, Dr. Zajic earned local and state awards for his forward thinking, educational ingenuity, and ability to lead a district through the COVID pandemic that plagued his first year as superintendent.

Dr. Zajic is the superintendent of the Chamberlain School District in Chamberlain, South Dakota. The Chamberlain School District is in central South Dakota along the Missouri River. It spans 931 square miles and serves 875 students K-12.

Dr. Zajic will discuss two key questions that undergraduate students need be able to answer during their time at SMSU. In addition, he will explain how the coursework and research conducted while at SMSU allowed him to become a successful public-school administrator, grant writer, and lifelong student through the implementation of practical research.



## Oral Presentation Abstracts

Upper Level of the SMSU  
Conference Center & via Zoom

*Biology, Computer Science,  
Environmental Science,  
Management, Theatre*

*Zoom Link:*

<https://minnstate.zoom.us/j/98549449437>

Password: URC2022

1

**Title:** Analysis of Microplastics in Sea Salts from Various Countries

**Presenter(s):** Katelynn Urness

**Presentation Time:** 9:45

**Advisor:** Dr. Thomas Dilley

**Abstract:** Microplastics (MP's) are broken down larger plastics that cause environmental, and potential human health issues. Humans commonly ingest them from consumption of aquatic organisms and sea salts. Sea salts from Bahamas, Italy, Mexico, and Spain were dissolved and filtered using a gridded, 5mm filter paper to collect the microplastics, while the number, size, shape, and color were quantified. Salt from the Bahamas was hypothesized to have the most microplastics because the Bahamas is a sink for marine plastics due to their proximity to ocean currents. Results showed that the Bahamas had 793 MP's/kg, Italy had 525 MP's/kg, Spain had 347 MP's/kg, and Mexico had 187 MP's/kg. Of the 1852 MP's found, 1138 were fibers, 705 were fragments, and 9 were sheets, and the most abundant color found was black. Microplastics are becoming increasingly worse due to increased production of plastics, environmental impacts, and potential human health impacts.

2

**Title:** Assessing Plant Diversity and Soil Respiration in a Natural and a Restored Prairie

**Presenter(s):** Noah Pankonin

**Presentation Time:** 10:00

**Advisor:** Dr. Elliot Vaughan

**Abstract:** Prairie ecosystems provide numerous ecological benefits and ecosystem services due to their unique plant communities. Due to loss through agriculture and urbanization, prairie restoration and conservation efforts have intensified. Plant diversity and soil respiration can be used to assess the status of restored and remnant prairies. This study examined relationships between plant diversity and soil respiration and between restored and native prairies. Plant diversity was measured along transects with 1-meter square quadrats to calculate Shannon's diversity indices. Soil respiration was measured with specialized probes and PVC collars to calculate carbon flux. Plant diversity was found to be greater in the restored prairie, with soil respiration negatively correlated with plant diversity. No significant difference was found in plant diversity between native and restored prairies. Prairie restorations should focus on site characteristics as a basis for plant diversity goals.

3

**Title:** Water Quality Assessment of Lake Shetek and Lake Sarah in Southwest Minnesota

**Presenter(s):** Hailey Caron

**Presentation Time:** 10:15

**Advisor:** Drs. Elliot Vaughan and Thomas Dilley

**Abstract:** Zebra mussels were found in two eutrophic lakes in southwest Minnesota, Lake Sarah in 2018 and Lake Shetek in fall 2022. To test the effects of zebra mussels on water quality, these lakes were sampled and tested at the beginning of each month, May-September. The following parameters were measured– turbidity, dissolved oxygen, phosphate, nitrate, Secchi depth, pH, and water temperature. It was hypothesized that turbidity would be higher in Lake Shetek than Lake Sarah. Secchi depth would be higher in Lake Sarah than in Lake Shetek. Results found that overall, Lake Sarah had higher Secchi depth and lower turbidity than Lake Shetek throughout the summer. Dissolved oxygen was typically higher in Lake Shetek. Phosphate and nitrate results were measured to be very low. Zebra mussels could have an influence on the lower turbidity and higher Secchi depth, but we cannot be certain that is the only cause of these results.

4

**Title:** Species Diversity Comparison between Two Tributaries of the Cottonwood River in Southwest Minnesota

**Presenter(s):** Regan Truedson

**Presentation Time:** 10:30

**Advisor:** Dr. Elliot Vaughan

**Abstract:** Habitat biodiversity ensures healthy ecosystems. Macroinvertebrates are integral to stream health and their absence can indicate pollution. Plum Creek and Unnamed Creek are two tributaries of the Cottonwood River, which has low species diversity and high pollution rates. This study compares the species diversity of macroinvertebrates in Plum Creek and Unnamed Creek. Hester-Dendy samplers and D-frame nets were used to collect macroinvertebrates from three sites on each creek. Macroinvertebrates were identified at the family level. The Hilsenhoff Biotic Index found that Unnamed Creek has a higher value (5.85) than Plum Creek (4.96). The Shannon-Weiner Index found that Unnamed Creek has higher diversity (1.47) than Plum Creek (1.07) but has lower evenness (0.395) than Plum Creek (0.542). An unpaired t-test p-value of 0.36 indicates there is no significant difference in species diversity. Stream biodiversity is important as it allows more taxa to inhabit the area by increasing productivity and food sources.

5

**Title:** Correlating Macroinvertebrates to Water Quality in the Minnesota River Mankato Watershed

**Presenter(s):** Alyssa Enevold

**Presentation Time:** 11:00

**Advisor:** Dr. Elliot Vaughan

**Abstract:** The Minnesota River Mankato watershed traverses through agricultural and urbanized areas where runoff impacts water quality in the river and its tributaries. As biological indicators, macroinvertebrates respond to these changes, allowing assessment of water quality over time. The purpose of this study is to provide a comprehensive picture of river health in the Mankato Watershed. Here, macroinvertebrates were collected during the summer of 2022 with a d-frame net from six sites along the Minnesota River and identified to family. Following identification, known tolerance values were used to assess water quality at each site; diversity at each site was also assessed. Physical and chemical water quality parameters were also assessed and compared to macroinvertebrate results. Overall, results indicated that the Mankato Watershed of the Minnesota River has fair water quality, with mid-river sections exhibiting slightly better water quality. This can be used as a baseline for future water quality

assessments, aiding in important ecological assessments.

6

**Title:** Winter Wind Erosion of Soil off Farm Fields in Southwest Minnesota

**Presenter(s):** MacKenzie Klett

**Presentation Time:** 11:15

**Advisor:** Dr. Thomas Dilley

**Abstract:** Winter erosion of soil due to wind is a common issue in Southwest Minnesota. Erosion of topsoil can lead to loss of nutrients which negatively impacts crops and can reduce water and air quality. Crop residue is important for slowing near-surface winds, reducing erosion potential. Snow-soil cores were collected from five different ditch locations between Marshall and Minnesota. Each snow-soil core was dried and weighed to calculate average mass of soil eroded from each site. Average soil mass ranged from 0.693 grams to 28.26 grams but there was no significant difference between sites ( $p=0.119$ ). There was no correlation between fetch and soil mass ( $R^2=0.0482$ ). Erosion rates were higher from fields with less crop residue and in north facing ditches. This study shows significant winter wind erosion and provides a base for future studies.

7

**Title:** The Benefits of Effective Interpersonal Communication for College Students: A Systematic Literature Review

**Presenter(s):** Iyke Yeboah

**Presentation Time:** 11:30

**Advisor:** Dr. Ken Chukwuba

**Abstract:** This research study sought to explore the importance of effective interpersonal communication and how college students can take advantage of it both in their personal and professional life. The study reviewed interpersonal communication terminology and approaches within the research literature prior to 2022 mainly from the fields of communication, psychology, business and education. Findings from the reviewed literature consistently supported the importance of communicative competence in a variety of relational contexts including, especially college success, persistence, emotion, learning outcomes, life satisfaction and even future occupations. The review contributes to previous knowledge on interpersonal relationships by providing a comprehensive overview on the importance of interpersonal communication for college students. Going forward, the findings from the review revealed that the communication discipline should be viewed as central on college campuses.

8

**Title:** Adam Barka

**Presenter(s):** Managing Ethical and Social Responsibility Challenges in a Multinational Labor Force

**Presentation Time:** 11:45

**Advisor:** Dr. Ken Chukwuba

**Abstract:** Corporate Social Responsibility (CSR) is a growing movement in the modern world. This paper explored the opportunity for domestic organizations to use the experiences of multinational corporations (MNC) in implementing CSR. Sixteen peer-reviewed Journals were screened, selected, and systematically reviewed. The database used includes Academia.edu and Google Scholar. The review demonstrated that MNCs customize their CSR to meet the needs of local communities while maintaining western-centric corporate results.

9

**Title:** Theatrical in Depth Research on the Seconds Shepherds Play

**Presenter(s):** Jasper Ale

**Presentation Time:** 1:00

**Advisor:** Prof. Sheila Tabaka

**Abstract:** Go in depth with me on the history of an amazing play by one of the greatest and mysterious playwright know to man "the Wakefield master"

10

**Title:** A Dramaturgical Study of Doctor Faustus by Christopher Marlowe

**Presenter(s):** Alexander Duus

**Presentation Time:** 1:15

**Advisor:** Prof. Sheila Tabaka

**Abstract:** The Tragical History of Doctor Faustus, also known more simply as Doctor Faustus is a play written by renaissance writer and contemporary of Shakespeare, Christopher Marlowe. This play delves into the mysterious Faust legend of Germany and serves as a cautionary tale to those practicing dark magics. This play has a rich and mysterious history with influences tracing back to biblical history. In this study I looked back at the historical contexts, inspirations, and influences surrounding the play, The Tragical History of Doctor Faustus, by Christopher Marlowe. By studying over twenty books and articles about religion, magic, demonology, and customs of renaissance Europe, I have compiled a presentation outlining the history of the play and how it could be performed with historical accuracy.

11

**Title:** Impact of Insecticide Permethrin on Behavior and Survival on Lady Beetles (Insecta: Coccinellidae)

**Presenter(s):** Nijie Nauden & Lileya Kebos

**Presentation Time:** 1:30

**Advisor:** Dr. Alyssa Anderson

**Abstract:** While insecticides can reduce numbers of pest species, they can unintended, adverse effects on non-target, beneficial species. Experiments were conducted to determine the impact of synthetic insecticide permethrin on behavior and survival of lady beetles (Insecta: Coccinellidae). The four groups were held in environmental chambers exposed to varying doses of permethrin for fifteen days. Treatment groups included those exposed to a manufacturer recommended permethrin solution, half and quarter dosage solutions, and a control. Three replicates of each were conducted. Observing their behavior was assessed at the beginning and end of the study. The measurement will be death rate compared which has a higher impact given each dosage of permethrin. The dosage among lady beetles showed there was a statistically significant difference between each dosage (ANOVA,  $p < 0.05$ ). Results indicate that the dosage of insecticide permethrin has an effect on lady beetles.

12

**Title:** Water Quality Assessment of Cottonwood Lake Southwest Minnesota

**Presenter(s):** Katelyn Schauer

**Presentation Time:** 1:45

**Advisor:** Dr. Elliot Vaughan

**Abstract:** Agricultural activity and the application of fertilizers can result in water pollution from nitrogen and phosphorus. Cottonwood Lake in Southwest Minnesota was once a healthy body of water but is now largely impaired and riddled with algae each year. This study assessed the water quality of Cottonwood Lake to determine nutrient pollution and the nutrient source. Results indicate that phosphorus and nitrate levels are beyond the recommended EPA standards which puts the lake at risk for eutrophication. Nitrate levels ranged between 12 and 20 mg/L and orthophosphate was between 0.4 and 0.6 mg/L at the start of summer. The nutrients were sourced largely from the golf course and the lake's inlet which involves runoff from over 10,000 acres of agricultural land. Dissolved oxygen and ammonium were also measured but they were not significantly below standards and did not indicate extreme impairment.

13

**Title:** Where We Share with Insects

**Presenter(s):** Mason Johnson & Blessing Ogbonna

**Presentation Time:** 2:00

**Advisor:** Dr. Alyssa Anderson

**Abstract:** Insects are adapted to almost every environment on Earth, from water to woods, and even the inside of our homes or commercial buildings. While some are beneficial or go unnoticed, others are considered significant pests. We sought to identify which insects and in what quantity live within the Southwest Minnesota State University campus. Utilizing varied liquid bait traps constructed with plastic bottles, we captured and identified insects. Insects were collected twice a week, for eight weeks, starting on September 10th. We found that most captured insects inside campus buildings were Dipterans, though a varied collection of dead insects were noted. The Social Sciences building had the most captured insects, followed by Science and Technology, Science and Math, and Manchester dorm. The considerable lack of species diversity may be the result of frequent, scheduled pest control measures which limit what species can survive on campus.

14

**Title:** Survey of Insect Pollinator Diversity in the SMSU Prairie and Pollinator Plots

**Presenter(s):** Katelynn Urness, MacKenzie Klett, & Alyssa Enevold

**Presentation Time:** 2:15

**Advisor:** Dr. Alyssa Anderson

**Abstract:** Pollination services by insects, such as wasps, bees, flies, beetles, and butterflies, are key to the reproductive success of flowering plants. They contribute to plant diversity and crop yield, however pollinator populations are declining, largely due to habitat loss. Here, we examine whether there is a difference in species composition, richness, and diversity between prairie habitat at Southwest Minnesota State University's (SMSU) Environmental Learning Area and residential pollinator plots. Five 10m transects were set up in the prairie area and pollinator plots in mid-September 2022. The number and type of insects found within 1m of the transect were recorded. Twelve families were found in the pollinator plots, while five were found in the prairie; correspondingly, Shannon's Diversity Index indicated lower diversity in the prairie. Chrysomelid beetles dominated both habitats. Understanding the utilization of current pollinator habitat on campus allows us to assess where necessary changes need to be made to promote pollinator abundance and diversity.

15

**Title:** Chrome extension

**Presenter(s):** Bityana Yishak

**Presentation Time:** 2:45

**Advisor:** Drs. Dan Kaiser, Shushuang Man, Kourosh Morteza pour

**Abstract:** The project that I am working on is chrome extensions. Chrome extensions are add-ons for chromium-based browsers like Google Chrome. The result of this project will be an extension that allows users to customize their chrome browsing experience by saving the file or the website that they want to return to. The reason why I chose my extension to be on chrome other than Safari, Edge, Firefox, Samsung Internet, or Opera is its popularity. Based on my research, Chrome has 65.7% while Firefox has 3.14, Safari has 18.66%, Edge has 4.32%, Samsung Internet has 2.75% and Opera has 2.25%. The usage of Chrome increases 0.48% yearly. Therefore, for this project I chose to develop a Chrome extension to increase the likelihood of eCommerce web builders adopting it.

16

**Title:** A Dramaturgical Study of Shakespeare's A Midsummer Night's Dream

**Presenter(s):** Molly Green

**Presentation Time:** 3:00

**Advisor:** Prof. Sheila Tabaka

**Abstract:** A study on the world of Shakespeare's A Midsummer Night's Dream. During this presentation the what, when, and where of the play will be discussed in depth to help with the understanding of the story. Generally thought of to be set in England though it is actually set in Athens, Greece, this study will go over what was happening during the time period and how society in was in Greece as a whole. This presentation will also go over when in Shakespeare's life he wrote the play and some possibilities of the reasons he wrote it for.

17

**Title:** Commedia Dell'arte and The Deceived Ones

**Presenter(s):** Colton Jensen

**Presentation Time:** 3:15

**Advisor:** Prof. Sheila Tabaka

**Abstract:** Commedia Dell'arte was a vital part of theatre history specifically during the Italian Renaissance. In this presentation I will be going over the history of this theatric style and will be dissecting one show written during this time called "The Deceived Ones"

**18**

**Title:** A Deep Dive into "The Scottish Play"

**Presenter(s):** Tailer Benson

**Presentation Time:** 3:30

**Advisor:** Prof. Sheila Tabaka

**Abstract:** The Scottish Play (or Shakespeare's "Macbeth") is known as a cursed play, where even uttering the name of the play can make things go horribly wrong in a theater. A dramaturgical approach was taken when researching this particular piece of text, meaning things outside the play were looked at, giving more life to the world of the play itself. With dramaturgical research, it goes more in-depth about things such as geography, customs of the time period, the playwright themselves, and significant locations mentioned in the show.

**19**

**Title:** William Shakespeare's The Taming of The Shrew: Story Origins and Historical Contexts

**Presenter(s):** Brady Berg

**Presentation Time:** 3:45

**Advisor:** Prof. Sheila Tabaka

**Abstract:** The goal of this presentation is to provide all the necessary dramaturgical research for The Taming of the Shrew by William Shakespeare. Standard research was performed to find information about things within the play such as setting, structure, and language. There was additional relevant information found in stories told long before and alongside Shakespeare.

# Virtual Session Abstracts

## Mid-Morning Virtual Session A – Sociology, Theatre

### *Zoom Link:*

<https://minnstate.zoom.us/j/915681921>

05

Password: URC2022

1

**Title:** Why Believing in Alien Life is Deviant

**Presenter(s):** Kody Moore

**Presentation Time:** 10:00

**Advisor:** Dr. Cindy Aamlid

**Abstract:** Whether we are alone in the universe is one of humanity's oldest unanswered questions. Recently there has been an increasing number of extraterrestrial abductees sharing their stories and expressing their experiences. Through studies done of abductees they share some common features. The finding shows that AAEs (alien abduction experiencers) are more educated than the general public, or at least more likely to attend higher education, and more likely to be women. This presentation will look at how we make sense of the belief in aliens and why this belief is considered deviant.

2

**Title:** Lysistrata: A Dramaturgical Analysis

**Presenter(s):** Andrew Scheiber

**Presentation Time:** 10:15

**Advisor:** Prof. Sheila Tabaka

**Abstract:** Lysistrata is one of the few surviving Comedies from Ancient Greece. In this presentation, we will look at the historical and social context in which this play was written. Findings such as details about the Peloponnesian War and the vastly different social roles women played in both Athens and Sparta help modern-day theatre artists better understand this classic play.

3

**Title:** Medea

**Presenter(s):** Andrew Ryan

**Presentation Time:** 10:30

**Advisor:** Prof. Sheila Tabaka

**Abstract:** In the era of 431 BC playwright Euripides wrote the play Medea, it dramatizes the fragmentation and alienation of humanity of that time period. Euripides was a playwright who wrote tragic verses for the voices of women, slaves, and addressed the social inferiority of social class, especially sex, class, femininity and masculinity. It is perhaps little wonder that his work finds such resonance in today's world at large. From my findings, what Euripides transcribed with great clarity and honesty between reality and tradition of his culture is not enough to say merely that Euripides was temperamentally drawn to such conflicts because they afforded him opportunities but rather for psychological analysis. In conclusion, the Greeks had identifiable classical historical tragedies in times of severe cultural crisis, not what we would expect in Athens in the late 5th century. Furthermore, the lack of literary criticism of the works of Euripides and the lack of scholars did not stop him from continuing to conceal truth beneath strata of irony, layered and elusive, in fact there is a modern bias in the ancient texts. and it is for the audience to unravel dissect the themes and not just notice the correlations but learn from them. To understand any poetic treatment of a traditional myth, it is important to know the extent of the author's changes and transformations knowledge of the details that have been added omitted or especially stressed, only then we can appreciate a work of art.

4

**Title:** Sound Editing and Design

**Presenter(s):** Emma Stringer

**Presentation Time:** 10:45

**Advisor:** Prof. Tetta Askeland

**Abstract:** For SMSU's production The Taming, there were two major sound effects that needed editing. The director asked for: a recording of someone singing to sound distorted and dreamlike, and the effect of "traveling through time" using various music clips from the last 2 centuries. Adobe Premiere Pro offers a wide range of edits to choose from. Research on Adobe Premiere was done by watching YouTube videos. Trial & error was utilized in creating the best sound effects possible. Reverbs and multiple delays turned a beautiful song into an eerie, distorted dreamscape as the characters' perception of reality changed. Music clips were chosen based on the script and the main themes of the play. Crossfades at the beginning and end of each clip created a

seamless flow of the last centuries' greatest hits as the characters traveled through time. This practice can be used for a multitude of sound design applications.

5

**Title:** The Merchant Of Venice

**Presenter(s):** Shawn Bollinger

**Presentation Time:** 11:15

**Advisor:** Prof. Sheila Tabaka

**Abstract:** William Shakespeare's work is some of the most prominently done theater in history but why do we continue to talk about him and perform his shows? More specifically, what is the significance of The Merchant Of Venice and what does an individual need to know about this show to put on a production of it? Compiled in this presentation are most of the answers to those questions from the basic knowledge needed to do a production of the show and why it is such a significant piece of theater history. The findings of the research done offer insight into the themes of the show and its messages as well as some of its characters. The conclusion of this project is that this show is so important because of the way Shakespeare wrote these characters and how his story brings to light some important social problems.

6

**Title:** Dramaturgical Project on Post-Apocalyptic Hamlet

**Presenter(s):** Zachary Thompson

**Presentation Time:** 11:30

**Advisor:** Prof. Sheila Tabaka

**Abstract:** World War II gave birth to weapons of mass destruction. Through Nuclear Fission and the study of Hydrogen Fusion, mankind is now capable of bringing about our very own destruction. Sometimes our most pertinent foe resides within ourselves, however, we are also capable of our own salvation. The Italian and English Renaissance did not give birth to a new understanding of devastating weapons, but rather a rebirth in art such as culture, music, and writing. One of the most renown and controversial writers and actor of this time; William Shakespeare, was fascinated by war and wrote or perhaps revised The Tragicall Historie of Hamlet, Prince of Denmarke. The tragedy of Hamlet befits a story of calamity, revenge, and death. Hamlet, being set in the aftermath of a nuclear war, provides us with a new perspective on aspersion and changes the landscape in which these characters must navigate throughout their journeys.

7

**Title:** The Mandrake

**Presenter(s):** Christian Tesch

**Presentation Time:** 11:45

**Advisor:** Prof. Sheila Tabaka

**Abstract:** According to the Partnership to End Addiction in a survey of college students 8% of them said that Their drinks have been spiked. Women made up a 80% of the 8% total. The Mandrake although a comedy has a serious issue in the show and should not be taken lightly. In the show a female is manipulated into believing she needs to have sexual incounters with a man that is not her partner, and in that manipulation is made to believe she needs to take a deadly substance. I would like to do a production of the show where the roots of the show in commedia dell'arte and it being a comedy are still prevalent, but infuse it with modern day and the issue at hand. This would be a production of keeping true to it's history but also shine light on an important issue.

## Mid-Morning Virtual Session B – Psychology, Communication Studies

*Zoom Link:*

<https://minnstate.zoom.us/j/998263911>

36

Password: URC2022

8

**Title:** How Has COVID Affected People's Orientation of Time

**Presenter(s):** Pamela Crislip & Anna Stroh

**Presentation Time:** 10:00

**Advisor:** Dr. Scott Peterson

**Abstract:** Has Covid-19 caused people to be more present-oriented? Covid-19 was a lonely time for many people because of having to be quarantined or hospitalized where they only saw a nurse or a doctor a couple of times a day. Covid-19 changed the way that most people lived, such as not gathering for holidays or in social settings such as school or church. Some people were out of work and school, which led them to stay home with just immediate family members. Online learning for school-aged children kept them from interacting with their friends



and not being used to their normal schedules. An online survey was conducted to investigate how Covid-19 has changed people's perception of time. Results were analyzed to determine whether Covid-19 caused people to be living more for the moment or not paying as much attention to the time of day, especially for people who were in quarantine.

**9**

**Title:** How Argumentative are SMSU Volleyball Players when the Result of a Play is in Question?

**Presenter(s):** Katelyn Nichols

**Presentation Time:** 10:15

**Advisor:** Dr. Ben Walker

**Abstract:** We often see professional athletes argue with calls made by referees all the time, I was interested in seeing how the volleyball players at Southwest Minnesota State University react to a play they don't agree with made in practice. Through a paper survey given to the volleyball team, I asked them to rate themselves 1-5 using the argumentativeness scale. I learned that all my teammates landed towards the middle of the scale, proving that they would argue a call if necessary but not after every single play. Results indicated that players on the Southwest Minnesota State University volleyball team don't feel the need to argue every call that gets made.

**10**

**Title:** Argumentativeness for Grading Disputes

**Presenter(s):** Samuel Lund

**Presentation Time:** 10:30

**Advisor:** Dr. Ben Walker

**Abstract:** Grade disputes for assignments or exams may be a driving factor in determining how argumentative a student or professor will be when defending their responses. Data was collected from 40 students and 15 professors by handing out a survey related to grade disputes and argumentation. Based on the survey questions, I hope to find that if students or professors are more argumentative, I can determine whether professors or students will argue to defend their decision for exams and assignments. Alongside that, I hope to find out if either group is willing to change their decision based on the argument of the opposing side. Will students or professors. The results are still pending as data is still being collected; however, I hypothesize that professors are going to be more argumentative than students based on the lack of confrontation students will have when it comes to grade disputes.

**11**

**Title:** Argumentation in LGBTQ+ Community Regarding Stereotyping in Social Media Platforms

**Presenter(s):** Shantel Quaintance

**Presentation Time:** 10:45

**Advisor:** Dr. Ben Walker

**Abstract:** Social Media has a lot of influence on how people perceive others. The goal of this research is to determine how the LGBTQ+ community handles an argument with another person who is using a stereotype about the LGBTQ+. A survey was constructed to gauge how the participants felt during the arguments and how impacted they were by the argument. The survey consists of 20 questions using google forms and all responses are anonymous. The survey was sent to 10 people from my personal social media accounts and then the survey was shared to others in the LGTBQ+ community. The final results are pending; however, the preliminary results indicate that the participants do enjoy a good constructive argument.

**12**

**Title:** Education Department Students' Comfort Level Discussing Politics and Religion

**Presenter(s):** Jim Radloff

**Presentation Time:** 11:00

**Advisor:** Dr. Ben Walker

**Abstract:** Some topics are unpleasant to discuss in public. Sharing opinions which do not match those of people in power is awkward. I sent out a survey to members of two SMSU Education department classes. Results are pending, but early responders tend to dislike discussing politics and religion.

**13**

**Title:** How Students Living on Campus Deal with Arguments that Arise

**Presenter(s):** Anna Reiner & Yesenia Gomez Ciriaco

**Presentation Time:** 11:30

**Advisor:** Dr. Ben Walker

**Abstract:** Further analysis studies are showing that students still favour the connections and support they obtain through a roommate, despite what designers believe; However how students deal with arguments that arise with those roommates, in their dorms, have yet to be discussed. Here, we have sent out a survey to twenty to thirty students, to find out how students deal with conflict that arises between themselves and their roommates. The survey consisted of a one to five scale. One being almost never true, and 5 being almost always true. Participants have remained anonymous, and results are pending. We

hypothesise that students will most likely be avoidant and try to avoid any conflict with their roommates. By doing this research, participants will gain a better understanding of the conflicts that arise between themselves and roommates in their dorms.

## Early Afternoon Virtual Session – Agribusiness Management

### *Zoom Link:*

<https://minnstate.zoom.us/j/93320582609>

Password: URC2022

14

**Title:** China's Agricultural Economic Boom

**Presenter(s):** Isaac Nett

**Presentation Time:** 1:00

**Advisor:** Dr. Sang Jung

**Abstract:** China has become one the fastest-growing economies in the world, as it currently has the largest economy in the world today. Many questions in regards to this developing country are, how did China get there? China has not always been an economic powerhouse, as changes in the political system providing more freedom has made China the country it is today. The cause of this economic boom is from the government abandoning communal farms in 1979, providing farms more incentives to increase agriculture production. Since abandoning communal farms, China has seen an increase in agricultural growth of over 5 percent a year. On the other hand, China has also become the largest importer of agricultural products, which is in part due to the large population. With extensive research done reading multiple books, I have been able to identify that removing communal farms has been the largest contributor to China's economic boom.

15

**Title:** Agricultural Economic Development in Mexico

**Presenter(s):** Hope Hicks & Luke Grannes

**Presentation Time:** 1:15

**Advisor:** Dr. Sang Jung

**Abstract:** Mexico is a country with a rich history. Crime and corruption run rampant, hindering economic growth and development of any kind.

Researching how and why Mexico is still considered a developing country will allow us to identify solutions to the issues the country is experiencing today. After we identify Mexico's problems that are holding them back, we'll explore possible solutions.

16

**Title:** Agricultural Economic Development in Peru and Venezuela

**Presenter(s):** Ruby Radunz & Emily Ratajczak

**Presentation Time:** 1:30

**Advisor:** Dr. Sang Jung

**Abstract:** Peru is a country located in South America. Common agricultural products Peru produces are potatoes, rice, and plantains but majority of the food consumed is imported. In the early 2000s, Peru had steady levels of economic growth along with macroeconomic improvements, but the rural areas were limited to the markets and public services leading to limited productivity and competition. Environmental concerns in Peru come from vehicles, factory emissions, and open burning of garbage which leads to water pollution, soil erosion, and deforestation. Venezuela is a country located in South America, north of Peru. Venezuela commonly grows sugarcane, rice, corn, cotton, and bananas. The agricultural industry provides less to the country's economy than any other industry. Agriculture reached its worst year in the 1980's when the country became dependent on food imports and began to mine petroleum on agriculture ground. Mining is the source of most of the country's environmental problems.

17

**Title:** Agricultural Economic Development in the Dominican Republic

**Presenter(s):** Gina Huhnerkoch & Stephanie Eisenbraun

**Presentation Time:** 1:45

**Advisor:** Dr. Sang Jung

**Abstract:** There are a lot of significant factors that contribute to issues with the economic development of the Dominican Republic. Factors that contribute to these issues include lack of education, poverty, environmental degradation, and others. This presentation explores the various solutions to help solve these issues. Lots of extensive research was conducted in order to find solutions that may help the economic development of the Dominican Republic. Some possible solutions discovered include increased spending on public goods, such as education, improved macroeconomic conditions, and diversification. The largest implication for our finding

is human error, especially when it comes to implementing new policies and ensuring that policies are followed.

**18**

**Title:** Agricultural Economic Development in Peru

**Presenter(s):** Tallin Johnson

**Presentation Time:** 2:00

**Advisor:** Dr. Sang Jung

**Abstract:** Peru is a third world country located in South America. The population of Peru stands at around 32 million. Peru's main crops consist of rice, maize, potato and sugarcane. Peru is one of the 5 largest producers of avocado, blueberry, artichoke and asparagus. Agriculture contributes about 13% to GDP and employs about 30% of the workforce. The biggest environmental issues in Peru are water pollution, soil erosion, pollution and deforestation, which has a huge effect on agriculture.

**19**

**Title:** Agri-Economic Development of Kenya

**Presenter(s):** Brayden Tofteland

**Presentation Time:** 2:15

**Advisor:** Dr. Sang Jung

**Abstract:** Many factors have affected the agricultural and economic development of Kenya. Some of these factors include the economic, agricultural, and trade policies of the nation, as well as the political and government systems put in place. This paper will investigate these policies to determine how it has affected Kenya. The paper will also overview the climate, agricultural, crops and livestock raised in the nation and how they have affected the nation up to the present day. These factors will be analyzed to determine if they have been helpful, and if not, what can be done to help improve the agricultural and food development of Kenya.

## Late Afternoon Virtual Session – Agribusiness Management, Communication Studies, Sociology

*Zoom Link:*

<https://minnstate.zoom.us/j/93320582609>

Password: URC2022

**20**

**Title:** The Impact of Agriculture in Brazil

**Presenter(s):** Jack Hanson

**Presentation Time:** 2:45

**Advisor:** Dr. Sang Jung

**Abstract:** Brazil is a major producer in the agricultural industry. This research presentation will give an overview analysis of Brazil's agricultural sector. The presentation will provide a brief introduction of the country, a look into the agricultural sector, economy, and policies. Issues in Brazil include changes in climate due to deforestation. Deforestation accelerates global warming and causes a change in the climate which can greatly impact crop yields. This presentation will provide an in-depth view of agriculture in Brazil.

**21**

**Title:** First Years Verbal Aggressiveness Online

**Presenter(s):** Kenzie Christensen

**Presentation Time:** 3:00

**Advisor:** Dr. Ben Walker

**Abstract:** In today's societal norms, we see more people with their noses in their phones. Yet we always hear how aggressive people are to one another online. I was curious to see if younger people were inclined to be aggressive online. SMSU first years were the youngest I could send out a survey to collect data from. As I looked through the results, they all had something in common, besides a few outliers of course. But my findings were that most of the answers stated, when being online, they prefer to go with the flow, rather than be aggressive and make others feel more comfortable even if that makes them uncomfortable. The interesting part is most of all the answers were answered similarly, meaning most first-year students feel this way. There were no staggered

answers, nor split answers. In conclusion, first year students are not inclined to be aggressive online.

## 22

**Title:** Agricultural Economic Development Issues in the Dominican Republic

**Presenter(s):** Cassidy Hoffmann & Ashley Trongard

**Presentation Time:** 3:00

**Advisor:** Dr. Sang Jung

**Abstract:** The Dominican Republic is a developing country that is a beautiful, well-known tourist destination. However, they experience agricultural issues relating to unpredictable weather conditions. With farmer's lack of crop insurance, these natural disasters put them at high risk of crop failure. Research was performed by the World Bank, Nations Online, USAID, and other sources. Through these sources, we found that the Caribbean Catastrophe Risk Insurance Facility provides some financial support to farmers in the Caribbean affected by a natural disaster. The United States Agency for International Development has also provided the Dominican Republic with over \$22 million in grants/loans to promote agriculture. The agricultural production and exports come mainly from sugarcane, rice, tobacco, cocoa, soybean meal, and bananas. The Dominican Republic's imports include refined petroleum, cars, and jewelry from the U.S. and China. In conclusion, the Dominican Republic relies heavily on agricultural production and financial support.

## 23

**Title:** COVID-19, School Closures, and the Effect on Students

**Presenter(s):** Tracy Munsterman

**Presentation Time:** 3:30

**Advisor:** Dr. Cindy Aamlid

**Abstract:** The COVID pandemic caused havoc for everybody. It affected young children in many ways that were unforeseen at the time of school closures. There have been numerous studies done to see how the pandemic affected students' academics as well as the social-emotional behaviors of children. Studies also looked at how the pandemic exemplified the problems of inequalities among students. In every study done it was found that the pandemic affected students negatively. Students not only lost opportunities for quality learning, but they also lost opportunities to learn how to make good relationships. It has been found that students have lost anywhere from 3 to 9 months of learning. They are still, 2 years later, that far behind in math and reading. The U.S. Department of Education has set

aside money for schools to help in this area and others to get the resources they need to help each student.

## 24

**Title:** To What Extend do Sports Fans Tolerate Arguments with Others?

**Presenter(s):** Cole Race

**Presentation Time:** 3:45

**Advisor:** Dr. Ben Walker

**Abstract:** Sports are a main source of entertainment for me and many across the globe. Watching or competing, sports influence the world for the better and drive competitiveness and progression. The survey was done by asking legal age residents of Marshall, MN and Students of Southwest Minnesota State, who are fans of sports. Participants will receive an email including a link connecting them to a survey on their opinion of how tolerant they are during events. Those with high argumentativeness are able to tolerate higher levels of disagreement when challenged on what they believe to be true and even support their right to express their ideals even if they differ from their own. While those with low argumentativeness won't tolerate an argument for long often resulting in conflict or retreating. Results are pending at present, even though I hypothesize that many participants will have a high level of tolerance for disagreement.

# URC Student Recital

Fine Arts Theatre, 1:00pm

1

**Work Performed:** Solo #1 from *Six Unaccompanied Solos for Snare Drum*

**Composer:** Michael Colgrass

**Performer:** Harrison Rigenhagen-Risch

**Area of Study:** Music Education  
(instrumental/general)

**Instructor:** John Donovan

**URC Project Title:** The Sound of a Snare

**Advisor:** Dr. John Ginocchio

2

**Work Performed:** *Wither Must I Wander*

**Composer:** Ralph Vaughan Williams

**Performer:** Daniel Junker

**Area of Study:** Music Education (vocal/  
instrument/general)

**Instructor:** Brittany Rudoj

**URC Project Title:** Songs of Travel: How Music  
Tells a Story

**Advisor:** Dr. John Ginocchio

3

**Work Performed:** *Kids These Days*

**Composer:** Brian Blume

**Performer:** Sydney Diebold

**Area of Study:** Music Education  
(instrumental/general)

**Instructor:** John Donovan

**URC Project Title:** Compositional and Technical  
Comparisons of Traditional and Novelty Snare Drum  
Literature

**Advisor:** Dr. John Ginocchio

4

**Work Performed:** *A Walk Through the Forest*

**Composer:** Cheyenne Volk

**Area of Study:** Theory/Composition & Music  
Education (vocal/general)

**Instructor:** Dr. Peter Lothringer

**URC Project Title:** The Compositional Devices used  
in "A Walk Through the Forest" by Cheyenne Volk

**Advisor:** Dr. John Ginocchio

# Poster Session Abstracts

Lower Level of the SMSU  
Conference Center

*Biology, Communication Studies,  
Computer Science, English,  
Environmental Science, Exercise  
Science, History, Hospitality  
Management, Management,  
Mathematics, Music, Philosophy,  
Political Science, Psychology,  
Sociology, & Spanish*

1

**Title:** HLA Manipulation by Breast Cancer Leads to Increased Immune Evasiveness

**Presenter(s):** Mason Johnson

**Presentation Time:** 9:45-11:15

**Advisor:** Dr. Sandy Craner

**Abstract:** Cancer is of great concern to society, causing many deaths every year. Cancer is difficult to treat, and therefore taxing for patients mentally, physically, and financially. One of the primary methods of immune evasion found in various cancers is the down regulation of Major Histocompatibility Complex (MHC) class I. Tsang et al. (2020) used immunohistochemistry to evaluate expression levels of HLA-A,-B, -C on a cohort of breast cancer. Higher levels of HLA expression correlated with disease free survival (DFS) and breast cancer specific survival (BCSS). Inoue et al. (2012) demonstrated that MHC class I expression may be inversely correlated to levels of the oncogene HER2. Downregulation of HER2 was shown to upregulate expression of MHC class I expression on breast cancer cells. These papers show that understanding of how cancer immunity works is of great importance in developing therapies and prognostics, as well as vaccines, for cancers going forwards.

2

**Title:** The Effect of Fatty Acids on Rheumatoid Arthritis

**Presenter(s):** Emma Polchow

**Presentation Time:** 10:30-12:00

**Advisor:** Dr. Sandy Craner

**Abstract:** Rheumatoid Arthritis (RA) is an autoimmune disease that attacks the synovial joints causing inflammation, pain, and joint damage. Currently, there is no cure for RA, only treatments that slow down the disease progression. Belch et al. (1988) tested replacing non-steroidal anti-inflammatory drugs (NSAIDs) with fatty acids found within evening primrose oil (EPO) and eicosapentaenoic acid (EPA), or fish oil capsules. Results showed subjective improvement in treatment groups, but no clinical improvement. Reed et al. (2014) tested using gamma-linolenic acid (GLA) in the form of borage seed oil and EPA to treat RA. Results showed no significant difference between treatment groups, but significant decrease in use of disease modifying antirheumatic drugs (DMARD's) in treatment groups. Studies indicate that fatty acids can be used to treat pain, but show no improvement to disease progression.

3

**Title:** The Role of Interleukin-6 and Interleukin-8 in Post-Operative Delirium

**Presenter(s):** Morgan Hughes

**Presentation Time:** 10:30-12:00

**Advisor:** Drs. Sandy Craner & Tony Greenfield

**Abstract:** Delirium is a short-term state of altered consciousness, attention, and perception. Post-operative delirium can have lasting financial and cognitive effects. The cause of delirium is unknown, but some hypothesize that interleukin-6 (IL-6) and interleukin-8 (IL-8) may be involved. Hirsch et al. (2016) suggests that surgery may cause inflammation systemically and to the CNS. Interleukin levels of 10 knee surgery patients were taken 3-, 6-, and 18-hours post-operation, regardless of delirium presence. van Munster et al. (2008) inquires if interleukin levels cause different delirium subtypes. 98 hip surgery patients at different delirium levels were tested for interleukins over 8 days post-operation. Both Hirsch et al. (2016) and van Munster et al. (2008) found a significant increase in IL-6 and IL-8 levels in those with delirium. Both these studies indicate that interleukins are involved in post-operative delirium. However, it remains unclear if interleukins are a cause or a biomarker for delirium.

4

**Title:** Interspecific Competition between Duckweed (*Lemna minor*) and Algae in a Simulated Eutrophic Environment

**Presenter(s):** Addison Schroeder, Claudia Lensing, & Trent Paulsen

**Presentation Time:** 10:30-12:00

**Advisor:** Dr. Shelby Flint

**Abstract:** The preservation of aquatic ecosystems around the world is of growing concern as the threat of eutrophication increases with growth of agriculture. This study examines *Lemna minor* as a possible solution to eutrophication due to its potential competition with algae. Equal amounts of duckweed and *Spirogyra* were grown together and separately to determine the impact of duckweed on the growth of algae. The difference in growth rate between the experimental and control groups was not statistically significant, but the difference in final mass was. At the conclusion of the experiment, the duckweed combined with algae had a mass 1.6 times the mass of the duckweed grown alone. Algae grown alone had a final mass that was 1.3 times greater than the mass of algae grown with duckweed. Larger scale studies should be carried out over a longer time period to examine the potential of duckweed as a solution to eutrophication.

5

**Title:** Methylmercury Bioaccumulation in Marine Mammals and Neurotoxic Effects on Indigenous Peoples in the Canadian Arctic

**Presenter(s):** Addison Schroeder

**Presentation Time:** 1:00-2:30

**Advisor:** Drs. Sandy Craner & Vaughn Gehle

**Abstract:** Indigenous diets in the Arctic rely on higher trophic level sources of food, like marine mammals, which contain inordinate concentrations of potentially harmful methylmercury. Booth and Zeller (2005) modeled the bioaccumulation of MeHg in the Faroe Islands to examine the risk of increased MeHg poisoning from anthropogenic activities. The results indicated that the average daily intake of MeHg for Faroese adults was dangerously above the guidelines set by the WHO, and is expected to increase with climate change. Jacobson et al. (2015) examined the IQ levels of Inuit children who had been prenatally exposed to MeHg through the consumption of traditional foods. The IQ scores of children exposed to higher levels of mercury were found to be 4.8 points lower than the less heavily exposed children. Both studies established that current levels of mercury exposure in the Arctic are high enough to produce adverse health effects across all life stages.

6

**Title:** Plant Diversity in Vegetative Plots on Southwest Minnesota State University's Campus

**Presenter(s):** Morgan Hughes, Kaaryna Smidel, & Franky Sesay

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Shelby Flint

**Abstract:** SMSU is considering the removal of native vegetation plots because of concerns that the plots are unappealing. Plant diversity is beneficial for pollination, carbon fixation, wildlife habitats, and mental health. The plant diversity of three vegetation plots near Sweetland Resident Hall were evaluated. Utilizing transects, we identified and measured the plant species richness and abundance to determine which of the three plots could be removed if one must be chosen. We found that there was no significant difference in species diversity between all three vegetative plots. Plot A and Plot C had the highest and lowest average species diversity counts, respectively. Plot B had an intermediate value, but it mainly contained exotic species and most native species were found at very low abundances. We concluded that Plot B should be the plot that is removed if a plot must be picked.

7

**Title:** Optimizing Carnivorous Plant Growth for Increase Plumbagin Production

**Presenter(s):** Brandon Medina

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Sandy Craner

**Abstract:** The overuse of antibiotics is resulting in drug-resistant microbes. Plumbagin is a secondary metabolite produced in large quantities by carnivorous plants (CPs) and is known to possess antimicrobial properties. The optimization of CP growth for increased plumbagin yields may provide a way to combat antibiotic-resistant microbes. Boonsnongcheep et al. (2019) used the genus *Drosera* to focus on optimizing plumbagin production with various light spectrums and media composition. Results showed blue light and low-nutrient media infused with L-alanine and acetate optimized plumbagin production. Siatkowska et al. (2021) tested if plumbagin productivity of *Droserids* varied between LEDs and fluorescent lights and two different media concentrations. Results found the light source had little impact on plumbagin production; however, altering the media composition produced higher plumbagin levels. These studies found that blue-light spectrum, rather than light source, and media composition were important factors determining the levels of plumbagin.

**8**

**Title:** Effects of Imidacloprid on Germination Rate and Biomass Between Monocots and Dicots

**Presenter(s):** Brandon Medina, Lileya Kebos, & Madison Foutz

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Shelby Flint

**Abstract:** Pesticide use in agriculture is increasing so it is imperative to understand how these pesticides effect the plants they are applied to. We tested the effects of the pesticide imidacloprid on the germination rate and biomass of two species each of monocots and dicots. We expected that higher pesticide concentration will reduce biomass across all species and will reduce germination rates more in monocots due to their netted root system. The imidacloprid was applied using half the recommended dose and double the recommended dose, and a control group with no pesticide was also used. After 20 days germination was recorded, and after 30 days biomass was measured. It was found that there was no significant difference in germination across the treatments, and there was no significant difference among the species. There was no difference in biomass across treatments but there was a difference among species.

**9**

**Title:** Using Pheromones as a Control for Sea Lamprey Population

**Presenter(s):** Regan Truedson

**Presentation Time:** 2:30-4:00

**Advisor:** Drs. Sandy Craner & Vaughn Gehle

**Abstract:** Invasive species cause substantial economic and ecological damage. Limiting invasive species damage by controlling population size is important. Some invasive species can be controlled by using pheromones. Pheromones are chemical signals that cause changes in behavior in members of the same species. Brockerhoff et al. (2006) demonstrated that wood-boring and bark beetles can be lured into traps using pheromones. They found an increased number of beetles trapped when using lures baited with pheromones than traps without. Sea lampreys are an invasive species found in the Great Lakes, and they use pheromones to migrate and reproduce. Wagner et al. (2006) demonstrated that using these pheromones can be useful when baiting traps. They found that sea lampreys were attracted to traps with pheromones. Both articles have demonstrated that pheromones are useful for trapping and managing invasive species.

**10**

**Title:** Tolerance for Disagreement Among SMSU Faculty

**Presenter(s):** Zachary Stute

**Presentation Time:** 9:45-11:15

**Advisor:** Dr. Ben Walker

**Abstract:** Colleges have a reputation for a rigid orthodoxy in their thinking among their faculty. Is this true? I am surveying SMSU faculty using the Tolerance for Disagreement survey developed by J.J. Teven, V.P. Richmond, and J.C. McCroskey to determine the average tolerance for disagreement to understand in part how willing the faculty might be to embrace alternative narratives, and test this reputation for our school.

**11**

**Title:** Minorities Reaction towards Racial Aggression On Campus

**Presenter(s):** Sebastian Flores

**Presentation Time:** 9:45-11:15

**Advisor:** Dr. Ben Walker

**Abstract:** My project centers around Minorities Reaction towards Racial Aggression (Verbal Aggressiveness). I believe it is an important factor to consider when going into universities, voices of minorities and their concerns with racism on campuses should be heard and listened to when considering in developing a campus that is more accepting and progressive in thought when it comes to international student, minorities, and people of color. My report centers around the information other campuses have found, compiling them into a cohesive presentation that informs people what minorities face in the university system which could be used in being aware of what these students face.

**12**

**Title:** Comparing Levels of Argumentativeness Between SMSU Communication and Justice Administration Majors

**Presenter(s):** Cassy Herding

**Presentation Time:** 9:45-11:15

**Advisor:** Dr. Ben Walker

**Abstract:** Many studies have been done on argumentativeness, but few have looked to argumentativeness in College students based on their areas of study. This research aims to give insight to this issue. Are Justice Administration or Communication majors more argumentative? The survey was created using the Argumentativeness Scale. The survey was sent to advisors for both majors to disseminate to their advisees. Results are pending to allow ample time to students to respond to



the survey. However, I hypothesize that Justice Administration Majors will be more argumentative than Communication Majors because of their proximity to the political world.

### 13

**Title:** Argumentativeness of Undergraduate Education Majors at SMSU

**Presenter(s):** Amanda Meyer

**Presentation Time:** 10:30-12:00

**Advisor:** Dr. Ben Walker

**Abstract:** Teachers are around people every day of their career. Being around many people provides a greater chance that arguments will occur when there are controversial issues being discussed. Teacher candidates need to be aware of how argumentative they are overall before entering the classroom. For this reason, undergraduate education majors at Southwest Minnesota State University were surveyed using an argumentativeness scale. On a one to five scale, the average score among the questions asked was two to three. However, the average score of the question "I feel excitement when I expect that a conversation I am in is leading to an argument" was less than two. This result shows that not many undergraduate education majors at SMSU like being in an argument. Keeping this information in mind when teacher candidates enter a classroom will help them take steps to ensure that arguments are prevented.

### 14

**Title:** The LGBTQ+ Community in Small Towns

**Presenter(s):** Tailer Benson

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Ben Walker

**Abstract:** The LGBTQ+ community has faced a lot of adversity throughout history, but everyone only hears stories from larger suburban areas. But what about those in the Queer community that live in Rural America? A Survey was sent out to the SMSU LGBTQ+ Club (and others associated with it) to find ways they thrive in smaller communities with fewer resources and education. With more small towns and rural communities, it is a lesser-known topic for people in those areas. The survey could help find new solutions to any problems we have faced in accepting the Queer community and make more people feel at home in a close-knit town.

### 15

**Title:** The Sexualization of Women in Political Positions

**Presenter(s):** Devyn Halvorson

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Ben Walker

**Abstract:** The sexualization of professional women holding political positions has been a topic of scrutinizing conversation for as long as Jeannette Rankin became the first female member of the House of Representatives in 1917. This is especially true today where the number of women in elected positions is at an all-time high. This study adds to the conversation about the influence and vitality of female representation in American government. Through the evaluation of social media comment sections, I aimed to discover how women holding elected positions experience sexism in relation to their appearance, occupation, and societal standards they are expected to uphold. Given the initial analysis of evidence, results indicate that female candidates face an unequal playing field when running for political positions. I hope to further bring awareness to the double standard held against women to be competent and assertive, while also being nice and nurturing during their candidacy.

### 16

**Title:** Comparing Argumentative Levels of Abortion on Social Media with SMSU Students

**Presenter(s):** Kharmen Saysirisanh & Jennifer Aguilar

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Ben Walker

**Abstract:** On June 24, 2022, Roe v. Wade was overturned, which banned access to abortion rights. Campaigners, specifically college students, use social media platforms to amplify their message on the controversial topic. The findings from our initial research question revealed characteristics in young people's abortion attitudes which created a foundation for in-depth research. Therefore, we conducted this study which explores the argumentative scale shown within Southwest Minnesota State University (SMSU) students on social media. Through surveys, we discovered how argumentative SMSU students ages 18-23 are on social media when a topic like abortion is amidst. After analyzing the surveys with 100% completion rate, participants' responses indicated that majority support abortion (85%) and about (40%) say they willingly assert themselves in arguments about abortion. Upon our results, we further explored the reasoning behind such action and hope to discover

how truly argumentative SMSU students are on the topic of abortion.

**17**

**Title:** How do Undergraduate Students Working in the Food Service Industry Feel About Disagreeing with Each Other?

**Presenter(s):** Raymond Leonard & Jacob Myers

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Ben Walker

**Abstract:** Students need to be more comfortable speaking their mind. A survey was sent out to a variety of different aged students working at two organizations that are in relation to the food and service industry. This survey is set to figure out how comfortable or not comfortable students feel when confronted or dealing with a disagreement. A survey was sent out to a total of 15 different undergraduate students working for both Dominoes and The Gym of Marshall. These surveys were all the same and were set with the goal of finding out if the undergraduate students were comfortable as well as how they felt about the topic of disagreement.

**18**

**Title:** To What Extent does Social Media have Effect on College Students

**Presenter(s):** Jessica Boafoh

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Ben Walker

**Abstract:** With this study, I made a survey of 20 questions on how argumentative SMSU students are on social media. I shared it around on campus for people to take this survey. This study shows how SMSU students are addicted to social media. Generally, studies proves that students spend most of their times browsing through social media such as TikTok, Instagram, Snapchat, twitter and so on that are unable to focus on their academic work. Research has proved that students spend a most of their time on social media platform instead of doing schoolwork. About 85% of the school's population uses the snapchat app to communicate with their peers. Now that technology has improved, group assignments given to students can be done over zoom and other platforms. Results from the survey proves how SMSU students use social media and the percentage of people on it.

**19**

**Title:** Interactive Chatbot for IT Support

**Presenter(s):** Tesfa Desta

**Presentation Time:** 9:45-11:15

**Advisor:** Drs. Dan Kaiser, Shushuang Man, & Kourosh Morteza pour

**Abstract:** The project I am working on is an interactive chatbot. A chatbot is a computer program that simulates and interprets human interaction. Since I started college, I've worked as an IT technician at my school, Southwest Minnesota State University. In my time there, I found out that new students, faculty, and staff usually have common questions with specific and practical answers written on the instructions at the IT help desk. But for many reasons, the team in the IT department can't get to most customers in time. For that reason, I have decided to build an interactive chatbot that could help IT support by resolving issues and reducing the workload. I researched chatbots already in use within big tech companies. Based on what I learned, I made a customized chatbot to answer the most common questions and send the tougher ones to the technicians.

**20**

**Title:** Performing Business Processes using Robotics

**Presenter(s):** Nick Polfliet

**Presentation Time:** 9:45-11:15

**Advisor:** Drs. Dan Kaiser, Shushuang Man, & Kourosh Morteza pour

**Abstract:** The practice of using robotics is a new form of business process automation, called Robotic Process Automation (RPA). The way that it works is that a single developer or a team of developers will meet with the user and learn their business process step by step. Then, the developers use this process to create a robot that can recreate and perform the steps of the process exactly. Effectively, this turns any applicable process into a simple press of a button. RPA also saves time, as the process for rating donors can be performed in only a few minutes using robotics. This project uses RPA to automate a common business process for non-profit organizations, which is to rate their donors on excel spreadsheets and use that information for newsletters or publicity. This process is long and tedious, and it could take a single person a full eight-hour workday to complete.

21

**Title:** FitHelp Application with Tkinter

**Presenter(s):** Doran Samples

**Presentation Time:** 10:30-12:00

**Advisor:** Dr. Dan Kaiser

**Abstract:** FitHelp is a program you can use to help yourself in continuing or bettering your fitness goals. It provides ways to track what you have done as well as ways to improve specific muscle groups of the body and is able to calculate one's caloric and nutritional need based off age, height, gender and weight. One of the key features of this will be the database, made with MySQL, that you can use to keep track of all foods that interest you. The database is flexible. Its budgeting system will help the users get the proper nutrition whether they are trying to bulk or cut body fat. The UI (User Interface) is intuitive and easy to understand.

22

**Title:** D'Square Cafe (Webpage)

**Presenter(s):** Ridip Prajapati

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Dan Kaiser

**Abstract:** This project creates a webpage for a café named D. Square Cafe that is located in one of the famous towns of Nepal, named Bhaktapur. It is a local café where you can get different kinds of local breakfast items. This webpage is made with the help of mainly three different web programming languages HTML, JavaScript, and CSS. This webpage will allow the user to explore all the local food items available in the cafe and a brief description about them including their nutritional values. Some of the best-selling and popular foods are also shown in the 'blogs' section of the webpage and a 'reviews' section is also available where customers may review the food/café. The customers can also order food items online and make payment for their purchase.

23

**Title:** Creating an Online Website for Restaurant

**Presenter(s):** Deepak Sharma

**Presentation Time:** 1:00-2:30

**Advisor:** Drs. Dan Kaiser, Shushuang Man, & Kourosh Morteza pour

**Abstract:** The main focus of the project is to create an online website for a restaurant named D & D Restaurant. I am using PHP (Hypertext Preprocessor) and CSS (Cascading Style Sheets) to build the website and MySQL (My Structured Query Language) for the database management system. The website consists of five sections: Home Section, Admin Section, Category Section, Food Section, and

Order Section. The website has two modules, one for an administrator and another for customers. The administrator can change passwords and update menus. There will be dashboard showing the number of orders every hour. Customers can see all the categories of food with their respective prices. Customers can place their own order online.

24

**Title:** Project Management Ticketing System

**Presenter(s):** Ansar Kassim

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Dan Kaiser

**Abstract:** The purpose of this project is to aid the efficiency of communication and workflow between the Technology Resource Center and the departments that depend on its services at SMSU. The main application of this project will be to make onboarding new employees and exiting former employees simple. Currently when new employees are hired at SMSU there is a technology form that needs to be filled out and sent to the TRC helpdesk via email. User and design errors of this form lessen the efficiency of tasks getting done. Office administrators from every department will get user accounts to relay information and submit service tickets as needed. The TRC will then review these user requests and provide assistance. Users will be able to review the progress of their tickets which eliminates constant follow up calls and emails from the user to the TRC.

25

**Title:** Table Tennis in VR

**Presenter(s):** Patrick Cassidy

**Presentation Time:** 2:30-4:00

**Advisor:** Drs. Dan Kaiser & Kourosh Morteza pour

**Abstract:**

This project is to create a VR game for table tennis with the Unity game engine. The user will play against an AI, which is capable of returning the ball to the other side. The programming language used is C#. The code includes a gamestate manager which keeps track of the current location of the ball, and will update the score if the user or AI faults in a point. Since the headset used is a Quest 2 headset, the user will be tracked using 6 degrees of freedom. This means that the user will be capable of moving the paddle with motion controls and moving around the scene in 1:1 scale to real life. The code for modeling the physics in the game includes the magnus effect (spin) for the ping pong ball and differing friction parameters for the table and paddle.

26

**Title:** What is Technical Writing? What Does a Technical Writer do in the Workfield?

**Presenter(s):** Natalia Mila Florez

**Presentation Time:** 9:45-11:15

**Advisor:** Dr. Ken Chukwuba

**Abstract:** This paper aims to discuss the meaning of technical writing and the history and rhetoric behind this essential type of writing. The paper will focus on three main points: The meaning and history of technical writing, as well as the characteristics and approaches, and the importance and use of technical writing to get to varied audiences, all of this emphasizing too in the role of being a technical writer. Furthermore, it will show the characteristics of technical writing and its professionals as well as their different approaches and their use in different fields and areas. It is necessary for readers, writers, and the general audience to understand the mission of a technical writer and how this field of writing facilitates the understanding of varied topics for different audiences that may have different levels of education, different backgrounds, or those who English is their second or even third language.

27

**Title:** Analyzing Bird Deaths Relating to Window Strikes on the SMSU Campus

**Presenter(s):** Trent Paulsen & Natalie Jorschumb

**Presentation Time:** 9:45-11:15

**Advisor:** Dr. Elliot Vaughan

**Abstract:** Hundreds of millions of birds die due to window strikes annually. This is important because birds perform many important ecosystem services such as seed dispersal and their placement on various trophic webs. Preventing bird deaths on campus will make SMSU more ecologically friendly. Building on previous work to study the locations and windows that birds are most commonly striking, routes were walked three times a week around campus from August 22nd to November 4th. Birds were collected and their locations marked on a map. 129 birds were found, encompassing 35 different species. A heat map of campus showed localized hotspots, and a chart showed the number of birds found and their association with temperature. This information paired with online resources can be used to prevent or reduce future bird deaths on campus, as well as be an example for other universities or businesses to do the same.

28

**Title:** Effects of Salinity on Germination of Wetland Plants

**Presenter(s):** Noah Pankonin

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Shelby Flint

**Abstract:** In regions of the world where deicing salt is applied in large quantities, freshwater wetlands are at risk of salinization, mainly through runoff. This also threatens wetland flora, especially species that are not salt tolerant. This study aimed to predict potential impacts of anthropogenic salinization of wetlands on wetland plants by evaluating germination of four plant species under different levels of salinity. Road salt was used to make salt solutions of 0.25, 1.0, and 2.0 g/L, with distilled water serving as a control. Seeds of each species were placed in petri dishes with these solutions and sealed to prevent water loss, and percent germination was recorded over time. Cordgrass and mountain mint failed to germinate at all, while switchgrass and slough grass displayed limited germination. Low to moderate levels of salinity most supported germination. Switchgrass and slough grass could thus withstand potential salinization of wetlands, to an extent.

29

**Title:** Measurement and Analysis of Key Water Quality Parameters in the Redwood River near Marshall, MN

**Presenter(s):** Candace Thomas

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Elliot Vaughan

**Abstract:** Physical, chemical, and biological processes influence water quality (WQ). In spring and autumn 2022, WQ parameters, weather, and biota presence were noted at Redwood River reaches near Marshall, Minnesota. Air pressure, air and water temperature, dissolved oxygen (DO), nitrate (NO<sub>3</sub><sup>-</sup>), phosphorous/orthophosphate (P/PO<sub>4</sub><sup>3-</sup>), and chloride (Cl<sup>-</sup>) were measured. Conductivity, total dissolved solids (TDS), salinity, pH, and oxidation-reduction potential (ORP) were added in the fall. NO<sub>3</sub><sup>-</sup> levels ranged from 3.4 to 10.4 mg/L in the spring to under 0.3 mg/L in the fall. Phosphorus sample analysis showed only 12.5 % of samples exceeded 0.1 mg/L. DO levels followed expected relationships with water temperature, wind-driven turbulence, and ORP. Conductivity, TDS, and salinity exceeded acceptable levels for freshwater streams. Chloride at one site was at levels harmful to sensitive aquatic species. These data illustrate stream variability and indicate monitoring of water quality is essential to improve and protect freshwater resources.

**30**

**Title:** The Effects of Salinity on the Germination of *Panicum virgatum*

**Presenter(s):** Morgan Hughes, Alisa Bengen, Rachel Fink & Madi Heiderscheidt

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Shelby Flint

**Abstract:** This experiment investigated the impact of increased road salting during winter months on wetland plants. The effects of salinity on switchgrass (*Panicum virgatum*) were tested. Germination, survival rate, and aboveground biomass were tested at three different salinity concentrations: 0 g/L, 0.5 g/L, and 1.0 g/L. Experiments were conducted both in petri dishes and in the greenhouse. We hypothesized that plants treated with the high saline concentration (1.0 g/L) would have the lowest germination rate, survival rate, and above-ground biomass.

**31**

**Title:** Effects of in Season Training on Agility and Physiological Variables in Collegiate Division II Football Players in Different Positions.

**Presenter(s):** Evan Oetter & Onte Burns

**Presentation Time:** 9:45-11:15

**Advisor:** Dr. Taner Erdogan

**Abstract:** Agility is important for all sports and it has a great effect on football. Players make split-second decisions while changing directions quickly during the game and different positions could react differently to agility. The purpose of this study is to determine the effects of in-season training on agility in collegiate Division II football players in different positions. Total of 12 collegiate players (height:178.33±4.96cm, weight:90.63±7.19kg); 4 linebackers(LB), 4 defensive backs(DB) and 4 wide receivers(WR) (three position groups) in the SMSU football team participated, voluntarily. Pro agility, and L drill tests were used to measure agility. The repeated measure ANOVA was used to test the within and between subject differences. According to statistical analysis there was a significant difference between pre and posttest in LB in pro agility test ( $p < 0.05$ ). It may be speculated that in-season training has an effect on football positions in terms of agility in collegiate football athletes.

**32**

**Title:** The City, the Cooperative, and the Company: A Fight for Power

**Presenter(s):** Zachary Stute

**Presentation Time:** 10:30-12:00

**Advisor:** Dr. Michael Hofstetter

**Abstract:** At the turn of the 20th century, three very different electricity brokers emerged in Yellow Medicine county, one of the first electric cooperatives in history, Stony Run Light & Power; the long-lived Granite Falls municipal power plant; and the Northern States Power Company, now part of the mighty Xcel conglomerate. How were these three neighbors similar? How were they different? Why did they have such radically different trajectories? These are questions to be answered in this Senior Thesis.

**33**

**Title:** Acceptance of Self-Service Technology in the Hotel Industry

**Presenter(s):** Nathaniel Morrow, Sawad Sani & Cordell Plass

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Yumi Lim

**Abstract:** With recent events self-service technology (SST) is on the rise in various industries. Hotels are starting to adopt these technological devices. The purpose of this research was to investigate how SST factors such as ease of use, speed of delivery, monetary promotions, desire for interaction with humans, and perceived usefulness would affect customers willingness to use SST in the hotel industry. A self-administered questionnaire was distributed to SMSU students. A total of 102 completed responses were collected. The findings suggest that there was a significant relationship between ease of use, speed of delivery, perceived usefulness of SST, and intention to use SST. It was found that the relationship between monetary promotion and a desire for interaction with humans and an intention to use SST was not significant. Last, the managerial implications were provided.

**34**

**Title:** Leadership Styles: A Review Of Transformational Leadership And Transactional Leadership

**Presenter(s):** Ebuka Aniebonam

**Presentation Time:** 10:30-12:00

**Advisor:** Dr. Ken Chukwuba

**Abstract:** This study aims to discuss the types of leadership styles that can help keep employees in an organization. This paper summarizes and analyzes the available literature on leadership styles. The paper will only focus on transformational and transactional leadership styles. The author will systematically review articles published from 1960 to 2022 (62 years).

35

**Title:** The Impact of Leadership Competency on Project Success with the moderating role of Role Conflict: A Study based on the Telecom Industry of Pakistan

**Presenter(s):** Tayyaba Rehman

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Ken Chukwuba

**Abstract:** This study aims to discuss the leadership competency in context of project success. There are different types of leadership competency dimensions we will mainly focus on three dimensions, emotional, intelligence and managerial quotient with the moderating role of conflict on project success. This paper summarizes and analyzes the available literature on leadership dimensions, role of conflict in projects and project success. The paper will only focus on the leadership competency within the Telecom industry of Pakistan. The author will systematically review articles published from 2010 to 2022.

36

**Title:** The Effects of Destructive Management on Organizational Performance

**Presenter(s):** Annika Freiburger

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Ken Chukwuba

**Abstract:** The aim of this paper was to recommend a framework for understanding destructive and ineffective leadership that summarizes the existing literature on destructive leadership. The author systematically reviewed the current literature on destructive leadership and its effects on employees in the organization. In addition, the author discussed leadership qualities and ways to avoid ineffective leaders to understand the indicators of destructive leadership, and their antecedents and consequences.

37

**Title:** Gender Differences in Leadership Styles

**Presenter(s):** Esther Oluborode

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Ken Chukwuba

**Abstract:** This study aims to investigate and discuss gender differences in leadership styles. It also discusses six main leadership styles and how gender plays a different and unique role in each style. This paper also evaluates the roles that organizations and stereotypes play and how they affect gender differences in leadership styles. This paper summarizes and analyzes the available literature on gender differences in leadership styles and articles published from 2000 to 2022 will be

reviewed. In addition, gender differences in the leadership styles of past Student Government Presidents at Southwest Minnesota State University will be discussed. This sample will also show the difference between transformational-led and transactional-led teams.

**Keywords:** Leadership styles, gender differences, organization, gender, stereotype, men leadership style, women leadership style

38

**Title:** Cryptography: The Mathematics Behind RSA Public Key Cryptosystem

**Presenter(s):** Biruk Ayalew

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Heather Moreland

**Abstract:** In the long history of secret and coded communications, the inventions of public key cryptography by Diffie and Hellman in 1976 and the RSA public key cryptosystem that followed by Rivest, Shamir, and Adleman in 1978 are defining moments. The significance of public key cryptosystems and the digital signature protocols they support cannot be overstated in the age of computers and the internet. We describe RSA Cryptography and the mathematics involved, including number theory, modular arithmetic, and coprimes of a number. We further discuss public key encryption and explain how it differs from symmetric encryption. The focus of this paper is to understand how RSA public key encryption is made possible using mathematics. Definitions, proofs, and examples are used to further illustrate the cryptosystem.

39

**Title:** Using Graph Theory to Analyze University Course Scheduling

**Presenter(s):** Omar Abouel Maaty

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Heather Moreland

**Abstract:** The scheduling of courses and exams presents a constant problem at academic institutions. Soft constraints such as instructor's areas of expertise and classrooms availability must be considered. Hard constraints such as course prerequisites must also be met. While these scheduling problems can be solved analytically, this study focuses on using graph theory to construct a pseudo-code algorithm to determine the solution. Graph coloring is a heuristic algorithm that can handle timetable scheduling while satisfying any change in requirements. This study shows applications of graph coloring the course timetable where different types of constraints are applied. It emphasizes degree of

constraint satisfaction, even distribution of courses, tests for uniqueness of solution and optimal outcomes. We focus on the Math and Computer Science Department course timetabling where both hard and soft constraints are considered. It aims at properly coloring the course conflict graph and transforming this coloring into conflict-free timeslots of courses.

**40**

**Title:** Modeling, Analyzing, and Animating the Nonlinear Damped Pendulum

**Presenter(s):** Levi Hedman

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Heather Moreland

**Abstract:** In this research project, we analyze a mathematical model of the nonlinear damped pendulum. This model yields a nonlinear second order differential equation that has no closed form solution. Therefore, the behavior of this system must be studied through qualitative methods such as a phase-plane analysis. Given a set of initial conditions, there exists many methods to form a solution through numerical approximations. In this project, we use the Euler and Runge-Kutta methods and compare the results with the physics-based engine of Blender, an open-source 3D software tool.

**41**

**Title:** The Compositional Devices used in "A Walk Through the Forest" by Cheyenne Volk

**Presenter(s):** Cheyenne Volk

**Presentation Time:** 9:45-11:15

**Advisor:** Dr. John Ginocchio

**Abstract:** The process of writing any piece of music involves many steps. As a composer, one has many choices to make. A piano piece was written to complete this study. Key, clef, time signature, pitches, rhythms, length, and instrumentation were all things that needed to be considered during the composition process. The creative intent was to compose a piece of music that invoked a specific image of a person taking a walk in the forest. In order to create that effect, a number of compositional devices were implemented, such as modulation, fragmentation, sequencing, rhythmic diminution, and inversion, among others. With all of these devices, the result was a complete piece composed for the piano compiled in 60 measures. The composition achieved the desired effect, a story told through instrumental music.

**42**

**Title:** Songs of Travel: How Music Tells a Story

**Presenter(s):** Daniel Junker

**Presentation Time:** 9:45-11:15

**Advisor:** Dr. John Ginocchio

**Abstract:** Music is more than pitches and rhythms; music is a fundamental form of human expression. When presented with a musical selection, one can perfect pitch and rhythm yet still deliver a lackluster performance. To express the music authentically, each performance must be informed by an understanding of historical context, textual meaning, and compositional form. For this project, I compared two similar song cycles, Schubert's Winterreise and Vaughan Williams' Songs of Travel, to examine how each composer used the elements of music to set a story. I then took a more in-depth look at one particular piece, "Wither Must I Wander?" from Songs of Travel, to explore the performative implications within that context. By researching the context around this piece and comparing the two composers, I learned how they construct music around a text as well as how we as musicians can provide an engaging and authentic performance.

**43**

**Title:** Compositional and Technical Comparisons of Traditional and Novelty Snare Drum Literature

**Presenter(s):** Sydney Diebold

**Presentation Time:** 9:45-11:15

**Advisor:** Dr. John Ginocchio

**Abstract:** As a percussionist, selecting a solo can be a lot of work. What instrument do you want? What is the appropriate skill level? How will a piece from the 1960s compare to something from 2020? As snare drum music has evolved throughout the years, it's important to look at the similarities and differences in older vs newer literature. I will be comparing Solo #4 in Michael Colgrass' "Six Unaccompanied Solos for Snare Drum" book and the piece "Kids These Days" by Brian Blume on both a compositional and a theoretical level.

**44**

**Title:** The Sound of a Snare

**Presenter(s):** Harrison Rigenhagen-Risch

**Presentation Time:** 10:30-12:00

**Advisor:** Dr. John Ginocchio

**Abstract:** A snare drum may seem like a very simple instrument, but the instrument can be used to create an array of unique sounds. This report explores some of the many ways that composers and performers access these colors, and how they are combined to create musically expressive works. Six

Unaccompanied Solos for Snare Drum by Michael Colgrass is a great example of showing off the ways a snare drum can be played. Solo one from this book will be used in tandem with this project.

**45**

**Title:** Why Is a Women's Perspective Beneficial to Ethics?

**Presenter(s):** Jessica Stai

**Presentation Time:** 9:45-11:15

**Advisor:** Dr. Brett Gaul

**Abstract:** Ethics is the branch of philosophy that deals with morality. One would assume that the focus of ethics would apply to all humans—regardless of their gender—but it isn't so. For the majority of the time, in the philosophical sphere, men dominated the scene, and a women's point of view was "left out." In this poster, I argue that a woman's perspective is beneficial to ethics. Throughout the research that I have conducted on this topic, I have found two arguments that support my conclusion. Including a women's perspective in philosophical concepts—more specifically in ethical concepts—would be beneficial because the concepts can be applied to everyone and not just the male gender. Also, feminist philosophers begin with different concerns and give different emphasis to the issues compared to non-feminist philosophers.

**46**

**Title:** Would it be Ethical to let a Child be Born and Raised in Space?

**Presenter(s):** Terry Van Note

**Presentation Time:** 10:30-12:00

**Advisor:** Dr. Brett Gaul

**Abstract:** We are in the space age, and it is only a matter of time before we take to the stars. This, however, brings up a question. Due to the negative effects of living in zero gravity, would it be right to let someone be born and live in space? I believe that it is not ethically right to have someone be born and live in space. Using evidence from experiments on rats in space that shows that being in space is detrimental to bone density and evidence from human social needs that shows how forced isolation would be negative and inhumane, I argue that it would not be ethically right to have a human being be born and live in space if they would never be able to come to Earth.

**47**

**Title:** Is Lying ever Morally Permissible? If so, When? Why?

**Presenter(s):** Shealyn Tom

**Presentation Time:** 10:30-12:00

**Advisor:** Dr. Brett Gaul

**Abstract:** Lying is usually seen as unethical, but is there ever a time where lying is morally permissible? Exploring the ethics of lying, I focus on the morality of lying, if it is ever okay to justify lying, and in what situations can it be justifiable. By looking at the views of Robert C. Solomon and Joseph Collins on the morality of lying, we can develop an understanding of the use of lying in a personal and professional environment. The problem is determining when a lie can be a justifiable action because there is no universal right way to determine the ethical value of lying as it depends on the situation, outcome, and personal beliefs.

**48**

**Title:** Ethics of Armageddon

**Presenter(s):** Braeden Kluver

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Brett Gaul

**Abstract:** Early August of 1914 saw the German Empire declare war against the Russian Empire and France. This decision would be the beginning of the end for the German Empire and would be the prelude to events that would shape the 20th and 21st centuries. So why did it happen? This poster will examine the build-up to the Great War, different German philosophers and their writing before the war, and how these philosophers' works helped to create a culture willing to go to war.

**49**

**Title:** Is Contemplation Central to Happiness?

**Presenter(s):** Evan Schotzko

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Brett Gaul

**Abstract:** In Book X of his Nicomachean Ethics, Aristotle introduces contemplation as the key to happiness and explores the notion that final happiness extends only so far as does contemplation. The implications of such a claim include the inference that philosophers and other such exceptional contemplators achieve a higher happiness than can an individual whose life consists primarily of the pursuit of happiness in another form. This study consists of an intensive examination of the assertions found within Book X of Aristotle's Nicomachean Ethics and a critical analysis thereof. Such exhaustive scrutiny precipitated the realization that Aristotle



failed to prove beyond doubt that the fullest extension of contemplation is directly tied to final happiness. Therefore, while contemplation may factor into the overall happiness of an individual, it does not necessarily play a central role in one's final happiness.

#### 50

**Title:** Financial Oversight Challenges with Minnesota's Community Residential Service Programs

**Presenter(s):** Troy Nelson

**Presentation Time:** 10:30-12:00

**Advisor:** Dr. David Sturrock

**Abstract:** Minnesota spent approximately \$5.4 billion on Home and Community Based Services (HCBS) in fiscal year 2022 to 2023. Minnesota faces many challenges within the Department of Human Services (DHS), primarily HCBS direct care staff shortages, despite the significant amount of money funding HCBS. By reviewing the Department of Human Service's budget, statutes governing funding HCBS providers, average wages, and the Office of the Legislative Auditor reports, I was able to conclude that there is little to no financial oversight of the \$5.4 billion funding HCBS. My greatest finding is the lack of financial oversight and accountability of taxpayer dollars. We as Minnesotans must care for our disabled and elderly population. It starts with providing good, quality staff. We do that by auditing HCBS providers and holding them financially accountable.

#### 51

**Title:** Is Perception *Perfection*? Task Complexity and Perceived Time, a Prospective Design

**Presenter(s):** Emily Vos, Emily Kern, Kaia Jordahl, & Sabrina Condelli

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Scott Peterson

**Abstract:** Time perception during mental tasks has been found to be influenced by task complexity. However, there is little research using tasks involving motor skills. We investigated time perception using the Perfection board game and manipulated task difficulty with pieces separated by simple vs. complex shapes. Task difficulty was confirmed by a significant difference in participants' ratings of the two tasks,  $t(18) = -3.775$ ,  $p < .001$ . Participants' time estimates indicated they perceived a slower passage of time for the simple/boring task,  $t(18) = 1.801$ ,  $p = .044$ . Results also showed a significant negative correlation between task difficulty and perceived time for the complex task,  $r = -.40$ ,  $p = .044$ . This study fills a gap

in the literature by using a novel method of manipulating task difficulty and assessing time perception. Our results suggest that workplace and academic environments should provide engaging tasks to ensure time passes at an average rate.

#### 52

**Title:** The Effect of Dynamic Visual Noise on Spatial Imagery, Size Perception and Recognition Memory

**Presenter(s):** Courtenay Leonard & Deborah Leier

**Presentation Time:** 1:00-2:30

**Advisor:** Dr. Scott Peterson

**Abstract:** Dynamic visual noise (DVN) can greatly affect how the brain functions. An experiment was conducted to study the effects of DVN on word judgment tasks involving shallow processing (judge the length of a word) versus deep processing (judge the size of an object). Participants made 40 judgments under DVN conditions and 40 with no DVN. Memory for the judged words was measured using a 160-item recognition test involving the 80 judged words and 80 new words. Participants' imagery abilities were measured using a pen and paper task involving mental rotation of a two-dimensional image. Our hypotheses were that size judgments would result in better memory than length judgments, that DVN would have a greater effect on size judgments than length judgments, and that high imagers would have better memory than low imagers for size-judged words. Results confirm these hypotheses and provide support for the role of visual imagery in memory.

#### 53

**Title:** Time Perception During COVID-19: An Examination of How Ego- and Time-Moving Perspectives Have Affected the Perception of Time During and after the COVID-19 Pandemic Quarantine

**Presenter(s):** Matthew Maloney &

Allison Quarrella

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Scott Peterson

**Abstract:** This study aimed to investigate the impact of the COVID-19 pandemic on time perception while also identifying whether a time-moving or ego-moving perspective impacted the perception of time. An online survey was created containing questions on how time was perceived and spent before, during, and after the COVID-19 pandemic quarantine, as well as a word scramble to help identify whether participants tend to perceive time as either time-moving (time moves toward them) or ego-moving (they move through time). We hypothesized that survey data would show significant differences in time

perception before, during, and after the pandemic, as well as differences in experiences for those who have time-moving vs. ego-moving perspectives on time. Results suggest that the temporal disintegration experienced during the COVID-19 pandemic may have continued after the pandemic, showing a worrying trend concerning the long-term effects of the pandemic on temporal regulation.

**54**

**Title:** Effects of Observing Facial Expressions on Time Perception

**Presenter(s):** Emily Skluzacek, Anna Clark, Jessica Stai, & Katherine Holcomb

**Presentation Time:** 2:30-4:00

**Advisor:** Dr. Scott Peterson

**Abstract:** Understanding how time perception is influenced by emotion is vital in our daily lives because it aids us to be aware of our surroundings. We conducted an experiment to explore how time is perceived when observing (or viewing) facial expressions showing three different emotions: angry, happy, and neutral. Participants viewed a series of faces shown on a computer screen for different durations between 0 and 5 seconds. They were asked to identify the emotion and give an estimate of the duration for each face. Based on previously research, we hypothesized that the duration of faces showing anger would be overestimated or perceived to be longer than actuality, faces showing happiness would be underestimated or perceived to be shorter than actuality, and faces with neutral expressions would be perceived most accurately. Results were analyzed to test our hypotheses. Differences in time estimates for male vs. female faces were also examined.

**55**

**Title:** Is Alcohol a Deal-Breaker? Alcohol as a Valued Factor in Romantic Relationship Formation

**Presenter(s):** Emily Vos

**Presentation Time:** 2:30-4:00

**Advisor:** Drs. Cindy Aamlid and Laura Koenig

**Abstract:** A potential partner's attitudes about alcohol have been of minor interest in past relationship research. This study examined differences in values considered in mate selection based on gender and length of potential relationship and also explored how important attitudes toward alcohol were compared to other factors used in selecting partners. An online survey collected data from 402 participants at two universities. Individuals rated on a 1-5 scale how important six characteristics

were in selecting a dating and long-term partner, including that potential partner's attitudes towards alcohol, religion, politics, health, drugs, and seriousness about grades. For both dating and long-term relationships, alcohol was rated as more important than religion and politics, less important than drugs for women, and less important than drugs and physical health for men. The inclusion of alcohol as a value adds a novel finding to the growing literature on relationship formation and proposes further study.

**56**

**Title:** Agricultural Economic Development in Argentina

**Presenter(s):** Nye Becker

**Presentation Time:** 1:00-2:30

**Advisor:** Drs. Sang Jung and Jose Losada-Montero

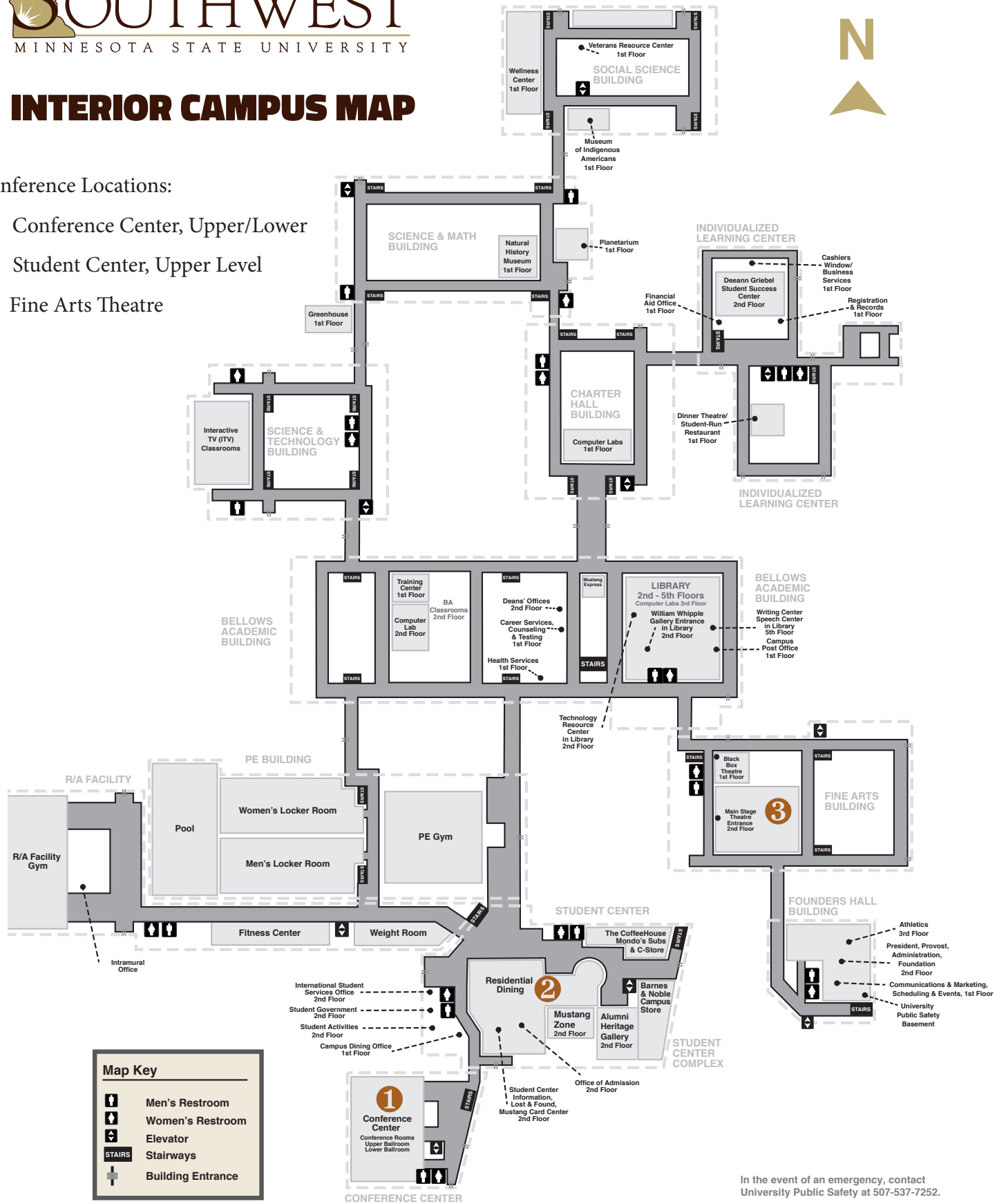
**Abstract:** Agricultural activity can contribute over 25% of gross domestic product in developing countries and is crucial for economic growth and stability. Argentina's developing mixed economy system has seen hardships such as record inflation rates over 80% and has showed lower economic performance. The environment of Argentina's markets is similar to that of the Midwest of the United States and has shared agricultural commodities and methods. Studying the agricultural economic development of Argentina allows for a better view on the industry to generate insight on the opportunities of the future. Research was taken from studying public information regarding Argentina's outlook on their agricultural economic situations of the present and past finds Argentina's needs towards further development for increased economic efficiency.

## INTERIOR CAMPUS MAP



Conference Locations:

- ① Conference Center, Upper/Lower
- ② Student Center, Upper Level
- ③ Fine Arts Theatre



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For more information contact conference coordinators:  
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