



14th Annual
**Undergraduate
Research
Conference**
SOUTHWEST MINNESOTA STATE UNIVERSITY

**Wednesday,
December 4, 2019**

Starting at 8:30 a.m.

SMSU Conference Center

PROGRAM

Welcome and Keynote

SMSU Conference Center Upper Level

8:30 Kumara Jayasuriya, SMSU President, Opening Remarks

8:45 Dr. Peter J. Grahn, Mayo Clinic,
Keynote Address: "From dairy farmer to translational
neuroscientist: My journey across Minnesota"

ORAL SESSION A

SMSU Conference Center Upper Level

Biology, Chemistry, Environmental Science

9:45 Erin Richardson, Environmental Science, Assessment of Adult
Zebra Mussels in Lake Sarah, Southwest Minnesota

10:00 C. Bridget DuBrey, Environmental Science, Zebra mussel
(*Dreissena polymorpha*) larvae distribution in Lake Sarah

10:15 Brent Huls, Environmental Science, Effects of Two Laundry
Detergents on Green Algae (*Selenastrum capricornutum*)

10:30 BREAK

10:45 Samantha Pankratz, Environmental Science, Evaluation of
tardigrades in moss on standing trees and fallen logs at
Camden State Park in Lynd, Minnesota

11:00 C. Bridget DuBrey, Katherine Knights, Anneke Weg &
Samantha Pankratz, Biology, Color Preferences of SMSU Birds
at Supplementary Feeders

11:15 Ola Abimbola, Environmental Science, The survival rate of *E.*
coli and *Salmonella* in 50:50 yard and kitchen waste compost
at 120°F, 140°F and 160°F

11:30 Baylie Bloomquist, Environmental Science, Growth Patterns
of Lichen, *Xanthoria elegans* and *Dimelaena oreina*, on
Tombstones in Southwest Minnesota

- 11:45 Candace Thomas, Environmental Science, Designing an Exhibit for the SMSU Natural History Museum: The Prairie Pothole Region
- 12:00-1:00.... LUNCH BREAK
- 1:00..... Sean Amegashie, Environmental Science, Concentration of Microplastics in Commercial Sea Salts
- 1:15..... Baylie Bloomquist, Louis Lozinski & Candace Thomas, Biology, Food Preference and Competition for Food Among *Acheta domesticus* (Orthoptera: Gryllidae)
- 1:30..... Cody Friedges & Austin Domeier, Biology, Dominance Assessment of Madagascar Hissing Cockroaches
- 1:45..... Christopher Berg, Idayat Agunbiade & Sarina Smith, Biology, A Longitudinal Study of PO_4^{3-} and NO_3^- runoff from agricultural fields
- 2:00..... Erin Richardson, Louis Lozinski & Sara Stoneberg , Biology, Assessment of Aquatic Macroinvertebrate Biodiversity in Camden State Park, Minnesota
- 2:15..... Tanisha Neeley, Hayley Gerdes, Patrick Rhoads & Manoj Sapkota, Biology, Does bird feeder location influence the frequency of feeder visit from native species?
- 2:30 Abbagail Schotter & Nona Meunsky, Biology, Various Behaviors of *Anolis carolinensis* Following Artificial Dew lap Ornamentation
- 2:45 Amy Heibult & Dina Vosberg , Biology, Evaluation of Chironomid Pupal Exuviae Sampling Methodology
- 3:00 BREAK
- 3:15..... Cora J. Engels, Chemistry, Evaluation of a modified hot-water extraction and azomethine complexation method for soil boron determination
- 3:30..... Marissa Mattson, Environmental Science, Rainfall harvest summer 2019 in Prior Lake, Minnesota Compared to Historical Events
- 4:30 Awards Ceremony, Library Research Awards Presented

ORAL SESSION B

SMSU Charter Hall 201

English, Nursing, Sociology, Theatre

- 10:00 Melinda Kassandra Lopez, Nursing, Hearing Loss and Dementia; Uncharted Territory
- 10:15 Cat Schmidt, Theatre, Creating Fantastical Characters Through Makeup
- 10:30 BREAK
- 10:45 Claudia Wahl, Theatre, Marble Statue Makeup
- 11:00 Danny McDonnell, Theatre, The Influence and Application of Stage Makeup on Rock'n'Roll and Professional Wrestling
- 11:15 Alyssa Ehlen, Theatre, Ghost, Ghouls, and Goblins, Oh my! A how to on goblin makeup
- 11:30 Hailey Bieber, English, The Historical Evolution of Feminist Novels
- 11:45 Sariah Cheadle, English, Underestimating Children's Literature: The War That Saved My Life
- 12:00- 1:00... LUNCH BREAK
- 1:15 Brooke Sorensen, Sociology, The Experiences of Female Students in the STEM Field on the Southwest Minnesota State University Campus
- 1:30 Amber Clobes, Sociology, That's a WRAP
- 1:45, Megan Wickenhauser, Sociology, Men's Drive for Muscles and Media
- 2:00 Megan Cull, Sociology, Sociology in Occupational Therapy

POSTER PRESENTATION SESSION A

SMSU Conference Center Lower Level

Posters displayed 8:30 a.m. to 5:00 p.m.

Times shown indicate when authors will be present at the poster

Accounting, Agriculture, Biology,
Computer Science, Exercise Science, Mathematics

- 1..... Chelsea Wiese, Biology, Anti-immune system antibodies as a cause of kidney damage in Systemic Lupus Erythematosus, Formal 2:45-3:15, Informal 11:15-11:45, 3:15-3:45
- 2..... Patrick Rhoads, Biology, Serotonin receptor 5-HT₄ activation and its ability to impede the accumulation of amyloid beta in Alzheimer's patients, Formal 1:00-1:30, Informal 10:15-10:45, 1:30-2:00
- 3..... Hayley Gerdes, Biology, Efficacy of ketamine as an antidepressant and involvement of mTOR signaling, Formal 10:45-11:15, Informal 9:45-10:15, 3:00-3:30
- 4..... Shawn Griffin, Biology, The Inhibitory Effects of Green Tea Derived Epigallocatechin-3-gallate against *Streptococcus mutans*, Formal 2:00-2:30, Informal 1:00-1:30, 2:30-3:00
- 5..... Nona Meunsky, Biology, *Echinacea purpurea* for the treatment and prevention of influenza viruses, Formal 10:15-10:45, Informal 10:45-11:15, 1:30-2:00
- 6..... Moses G. Ogundipe, Biology, The Role of Toll-Like Receptors in Pathogenesis of Guillain-Barré Syndrome, Formal 11:30-12:00, Informal 9:45-10:15, 2:30-3:00
- 7..... Fadumo Ismail, Biology, The influence of the gut microbiome and vagus nerve on depressive behavior, Formal 1:30-2:00, Informal 2:00-2:30, 3:00-3:30
- 8..... Prabhat Shrestha, Biology, Association between talc use and ovarian cancer, Formal 3:45-4:15, Informal 10:45-11:15, 1:00-1:30
- 9..... Pushpa Chhantyal, Biology, Identification of the amino acid sequence responsible for Neurofibromatosis type 2 (NF2) tumor suppressor function in merlin protein, Formal 9:45-10:15, Informal 10:15-10:45, 2:00-2:30

- 10..... Cassie Rogotzke, Agriculture, History of Risk Management in Agriculture, 11:00-12:00
- 11..... Marco Gacke, Biology, Combinational immunotherapy with dual CTLA-4 and PD-1 blockade, Formal 3:15-3:45, Informal 11:00-11:30, 3:45-4:15
- 12..... Erica Gervais & Cassie Rogotzke, Agriculture, Economic Development in Afghanistan, 2:30-3:30
- 13..... Tarah Young & Ashley Anderson, Agriculture, Economic Development of Madagascar, 2:30-3:30
- 14..... WITHDRAWN
- 15..... Orrie Frahm, Accounting, The Positive Impacts of Family-Friendly Work Policies on Company Profits and Productivity, 10:00-11:00
- 16..... Tanner Differding, Katie Robling & Luis E. Gaona, Biology, Allelopathic Effect of Velvetleaf on Soybean Plants, Katie 11:00-11:45, Tanner & Luis 3:00-3:45
- 17..... Zakk Schmitz, Makayla Hoselton & Chidera Ezeh, Biology, Allelopathic Effects of Thyme on Bush Bean Growth, Chidera & Zakk 9:45-10:30, Makayla 1:00-1:45
- 18..... Amber Wells, Rachel Miller & Kenny Famakinwa, Biology, The Impact of Herbivory on Companion Planting with Basil, Amber & Kenny 10:15-11:00, Rachel 1:45-2:30
- 19..... Marco Gacke & Jayla Burt, Biology, Allelopathic Effect of Canada Goldenrod on Tomato Growth, Jayla & Marco 1:00-1:45
- 20..... Emmeline D. Soto, Bryan Hurley & Moshood Agboola, Biology, Allelopathic Effects of Red Pine, Blue Spruce, and White Cedar on Dandelion Growth and Development, Bryan & Moshood 9:45-10:30, Emmeline 2:30-3:15
- 21..... Montayya McManus, Exercise Science, Body Composition Changes in a Summer Swim-Team Season, 1:30-2:30
- 22..... Gabriel Galamue & Quadri Busari, Exercise Science, Does reaction-time testing improve reaction-time during sprinting? 1:30-2:30
- 23..... Matthew Stude, Mathematics, Understanding the Mandelbrot Set, 10:00-11:00

- 24 Zach Thissen & Ben Specht, Exercise Science, Anaerobic Power in Division 2 Football Players, 1:00-2:00
- 25 Alison Drexler, Alex Ney, Justin Clark & Zachary Morgan, Exercise Science, Effects of Fasted High Intensity Interval Training on Body Composition , Alison & Alex 10:00-11:00 ; Justin & Zachary 1:00-2:00
- 26 Jenna Walczak & Madison Strodman, Exercise Science, Difference in Reaction Time Between Division II Women's Volleyball and Basketball Players, 2:00-3:00
- 27..... Tyler Smith, Exercise Science, Effects of RPR Resets on Jump Height of DII Basketball Players, 10:00-11:00
- 28 Jacob Rausch, Mathematics, Sabermetrics: The Math Behind Baseball, 10:30-11:30
- 29 Austin Domeier, Mathematics, Lotka-Volterra Theory: The Mathematics Behind Predator-Prey Interactions, 10:00-11:00
- 30 Nathan Kuhn, Mathematics, A Gambling System, 10:00-11:00
- 31..... Alexis Bass, Mathematics, Analysis of Option Pricing Using the Black-Scholes Model, 10:30-11:30
- 32 Ankit Parajuli, Mathematics, Perron-Frobenius Theorem and Ranking of Soccer Teams, 10:00-11:00
- 33..... John Miller, Computer Science, Digital Synthesis, 9:30-10:30
- 34..... David Mcharo & Romit Tajale, Computer Science, DavidDoctors Android Application, 9:30-10:30
- 35..... Jace Bunne & Bailey Olson, Computer Science, BartenderMe IOS Mix Drink Application, 9:30-10:30
- 36..... Jason Kleindl, Computer Science, Fourball / Combined Golf Tournament Scoring, 1:00-2:00
- 37..... Shrijan Suwal & Prajwal Shrestha, Computer Science, Cuisine Concept, 1:00-2:00
- 38 Jordan Mueller, Computer Science, Designing and Building a Website for the SMSU Residence Hall Association, 9:30-10:30

POSTER PRESENTATION SESSION B

Student Center Upper Level (SC 216)

Posters displayed 8:30 a.m.- 5:00 p.m.

Times shown indicate when authors will be present at the poster

Culinology, History, Music, Philosophy,
Political Science, Psychology, Sociology, Theatre

- 39..... Samantha Hotzler, Music, Bringing life to music: How performers highlight emotion as exemplified by the performance of *Vergebliches Ständchen* by Johannes Brahms, 10:00-11:00; Performance at 1:30-2:20 FA Theatre
- 40..... Kevin Totusek, Music, Music of Future Past: Composing Classical Music Through Modern Rock, 9:30-10:30; Performance at 1:30-2:20 FA Theatre
- 41..... Rachael Blake, Music, Can You Hear Me Now?: Evolution of Musical Instinct in Relation to Hearing Loss, 10:30-11:30; Performance at 1:30-2:20 FA Theatre
- 42..... Maria Callens, Music, *Sturm und Drang* in the Beethoven's Sonata Op. 10 No.1 in C minor, 9:30-10:30; Performance at 1:30-2:20 FA Theatre
- 43..... Jack Elbert, Music, Can You Feel the Rhythm?: What you Hear Versus What you See, 10:30-11:30; Performance at 1:30-2:20FA Theatre
- 44..... Ryan Ohm, Music, *Pavane Pour une Infante Défunte* (Pavane for a Dead Infant/Prince) "The story of the music by Ravel," 9:30-10:30; Performance at 1:30-2:20 FA Theatre
- 45..... Maggie Graber-Heisinger, History, The Foundation of Southwest Minnesota State University's Inter-Faculty Organization Local: Toward Conflict Resolution, 2:00-3:00
- 46..... Casey Klosterbuer, History, A Century and a Half Later: Looking Back at The Formation of Lyon County, 2:00-3:00
- 47..... Brad Bahlmann, History, From the Ashes: Tracy, Milroy, Balaton School Consolidation and Small Town Identity, 10:00-11:00

- 48.....Ty Veen, History, Crime in Lyon County during World War I and World War II, 11:00-12:00
- 49.....Brandon Vonderharr, History, The Way We Drank: Lyon County in Pre-Prohibition Minnesota, 11:00-12:00
- 50.....Cory Hollowell, History, From There to Here: The Experience of African American Student Athletes at Southwest Minnesota State University, 2:00-3:00
- 51.....Broderick Eveslage, History, Marshall, Alcohol, and Blue Laws, 11:00-12:00
- 52.....Whittney McCamish, History, Cultivating Community Through Celebration, 10:00-11:00
- 53.....Paul Ragan, History, Sharing the Stage: The History of SMSU's Theatre Program in Lyon County, 9:30-10:30
- 54.....Stanze Smith & Rajesh Hamal, Culinary, Product Development: Quick'r Curry, 11:30-12:30
- 55.....Savannah Boedigheimer, Theatre, "Cause this is Thriller," 1:30-2:30
- 56.....Allie Lamote, Theatre, The Beauty of Makeup, 1:00-2:00
- 57.....Mary Jean Porter, Theatre, History of Theatrical Clown Makeup, 1:00-2:00
- 58.....Leah Graham, Theatre, The Ageing Process: In Stage Makeup, 2:00-3:00
- 59.....Zyairr Johnson-Landoll, Theatre, African Tribal Make-up, 2:00-3:00
- 60.....Elizabeth Zoya, Theatre, Fantasy To The Stage, 2:00-3:00
- 61.....WITHDRAWN
- 62.....Jennifer Cox, Political Science, Community Responses to Plant Closures in Greater Minnesota, 1:00-2:00
- 63.....Nathaniel Van Asperen, Political Science, Student Recruitment and Retention in Greater Minnesota State Universities, 10:00-11:00
- 64.....Jake Samp, Political Science, Rural Broadband: Improving Education in the 21st Century, 10:00-11:00

- 65..... Fatou MS Kinteh, Political Science, Community Leaders Respond to Immigration Issues in Southwest Minnesota, 1:00-2:00
- 66..... Ryleigh Haynes, Sociology, How Do College Students Justify Their Deviant Behavior? 1:30-2:30
- 67..... Osman Osman, Sociology, Gender differences in professional sports, 1:30-2:30
- 68..... Richard Ayers II, Sociology, University Program Management, 1:30-2:30
- 69..... Kortney Genske, Ryleigh Haynes, Parker DeBates & Kimberlee Geuther, Psychology, Effect of Positive and Negative Emotions on Time Perception, 12:30-1:30
- 70 Cassandra Lee, Ivan Carrillo & Katelyn Plendl, Psychology, Time Perception and Memory for Simple and Complex Words, 12:30-1:30
- 71..... Jamie Schell, Cassondra Ohnsorg & Carrie Enga, Psychology, The Effects of Personality Differences on Students' Perception of Time While Testing, 12:30-1:30
- 72..... A. James Gully, Philosophy, Should Corporations Serve the Public Good? 1:30-2:30
- 73 Joey Heinen & Katherine Knights, Why the Argument of Unequal Consideration of Animals Due to Cognitive Inequality Fails, 10:00-11:00
- 74..... Jessica Stai, Philosophy, Which is Better: Direct Democracy vs. Representative (Indirect) Democracy? 10:00-11:00
- 75..... Rachal Albrecht, Political Science, Intended Effects of Rochester's Destination Medical Center, 1:00-2:00



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For more information contact conference coordinator:
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