



9th Annual
**Undergraduate
Research
Conference** **14**
at Southwest Minnesota State University

Wednesday, December 3, 2014

Starting at 8:30 a.m. | SMSU Conference Center



PROGRAM

Welcome and Keynote

SMSU Conference Center Upper Level

- 8:30 Dr. Connie Gores, SMSU President, Opening Remarks
8:45 Dr. Adam Bergren, National Institute for Nanotechnology
Keynote Address: “Nanotechnology: A Platform
for Exploiting the Properties of Small Things in Big Ways”

Oral Session A

SMSU Conference Center Upper Level

- 9:45 Josh Hughes, Environmental Science, Comparison of Macrophytes
in Ponds under Agricultural, Residential, or Commercial Influences
near St. Cloud, MN
10:00 Jessie Eckroad, Environmental Science, The Natural History of
Renville County, Minnesota
10:15 Colter Fortenberry, Environmental Science, Migratory Waterfowl
Survey of Black Rush Lake WPA in Lyon County, Minnesota
10:30 BREAK
10:45 Jacob Tews, Environmental Science, A Comparison of Bacterial
Communities in a Freshwater Slough in Meeker County, Minnesota
11:00 Samantha Ritter, Environmental Science, Evaluation of the
permanent structural charge of a mixed-layer soil silicate
11:15 Manisha Prajapati, Environmental Science, Comparing the density
and diversity of lichens in SMSU Environmental Learning Area and
Camden State Park
11:30 Travis Meinders, Luke Stadther & Colter Fortenberry, Biology,
Characteristics of the Crayfish Populations in the ADM/SMSU
Environmental Learning Area Retention Pond
11:45 Melissa Bartz, Michael Holt & Samantha Ritter, Biology, Factors
Affecting Earthworm Density in Lyon County Minnesota Habitats
12:00-1:15 Michael McGovern, Gabrielle Cohrs, Todd Chalmers & Madeline
Robertson, Creative Writing, “We’re All Adults Here”
1:30 Emma Christensen, Agronomy, Effect of Sulfur Application on Dry
Matter Yield of Corn Grown on High Organic Matter Soil
1:45 Rebecca Sommer, Josh Hughes & Laura Blanchard, Biology,
Comparison of macroinvertebrate diversity and abundance in two
stormwater runoff ponds of differing ages in Marshall, MN
2:00 Alexis Walker, Coleton Draeger & Travis Larson, Biology, Summary
of Redwood River Monitoring Data Over a 10 Year Period, 2005-
2014

- 2:15 Coleton Draeger, Environmental Science, Nesting Habitat
Comparison of the Wood Duck (*Aix sponsa*) in McLeod County
Minnesota
2:30 Juni Lama & Dawa G. Rai, Biology, Birds Mortality due to Window
Collision in SMSU
2:45 BREAK
3:00 Cailin Rogge, Mary Lamb & Benjamin Fick, Scientific & Technical
Writing, Increasing Energy Efficiency at Southwest Minnesota State
University
3:12 John Hammonds, Manisha Prajapati & Adam Welling, Scientific
& Technical Writing, Health Risks and Cost-Benefit Analysis of
College Sports
3:24 Derek Fox & Ben Malakowsky, Scientific & Technical Writing,
Should we add solar panels to SMSU?
3:36 Victoria Bensel, Chantel Paul & Becky Koepp, Scientific &
Technical Writing, Building Health on Campus
3:48 Jordan R.C. Cross, Erin Kamrath & Megan Evert, Scientific &
Technical Writing, New Fitness Center for a New Generation
4:00 Cody Petrowiak, Dustin Schulte & Brett Welsh, Scientific &
Technical Writing, Alcohol Use on SMSU Campus
4:12 Erica Downing, Ben Spaeth & Alex Oliver, Scientific & Technical
Writing, The Benefits of Green Roofing at SMSU
4:24 Cody Seehafer & Lauren Doose, Scientific & Technical Writing,
Motion Lighting at SMSU
4:36 Andrew Austin, Demi Rorvick & Kendra Erickson, Scientific &
Technical Writing, Composting Awareness at SMSU
4:48 Tiffany Gehl, Kaitlyn McCaslin & Katie Kaiser, Scientific &
Technical Writing, Could hand sanitizing stations be beneficial to
SMSU?
5:00 Meghan Johnson, Emily Schaefer & Carly Salfer, Scientific &
Technical Writing, Helping College Students Obtain a Longer
Healthy Life

Oral Session B

SMSU Charter Hall 201

- 9:45 Zachary Koepke, History, Groundswell: 1980s Farm Crisis
10:00 Jaclyn Holm, History, Satisfaction Guaranteed
10:15 Peter Lucken, History, No Place Like Home: The History and
Popularity of America’s Pastime in Stearns County

10:30 BREAK

10:45 Mai Ze Vue, Sociology, How does stigma/blame frames vary by sociocultural factors and social class?

11:00 Jacob Muller, History, Joseph Renshaw Brown and His Legacy in Frontier Transportation

11:15 Payton Shively, Theatre, Women in the Shakespearean Era

11:30 Kyle Havlicek, Theatre, Religious Theatre in the Medieval Era

11:45 Amy Kay Zimmerman, Cheyenne Jones, Julie Vang & Johntae Ware, Art History, Illuminated Manuscript Show Graphic Design Project

12:00- 1:00 ... Lunch Break

1:00 Hunter Aubol, Naomi Baker, Marten Salfer & Alex Thies, Art History, Illuminated Manuscript Show Graphic Design Project

1:15 Jordan Bakken, Political Science, Southwest Minnesota Amateur Sports Center

1:30 Talitha Black, Theatre, Criticism of Shakespeare

1:45 Thomas Knudson, Theatre, The Marauded Marlowe

2:00 Kayla Anderson, Emily Euerle, Meagan Meier & Alexa Thelen, Psychology, Eyewitness Testimony, Trustworthy or Not?

2:15 Joel Gay, Theatre, Architecture of the English Renaissance

2:30 Heidi Bengtson, Sociology, Children's Grief, Family Response, and Coping to Terminal Illness

2:45 BREAK

3:00 Alex Kluess, Sociology, The Impact of Television Viewing on Adolescents' Sexuality

3:15 Erin Reps, Sociology, Once Upon a Time... There Was More to the Story. A critical look into the world of stereotypes embedded in beloved Disney "Happily-Ever-Afters" and their influence (or lack there-of) on a popular modern remake

3:30 Turi Jystad, Theatre, The Influence of Greek Gods on Greek Theatre

3:45 Valarie Vermillion-Huback, Political Science, Broke in Minnesota: Poverty on the Rise?

4:00 Derek Ryan Schultz, Political Science, Minnesota Counties and Delivery of Veteran Services

4:15 Hanifah Abdullah, Political Science, Sulfide Mining in Northeast Minnesota: Costs and Benefits

4:30 James Saydee, Jr., Political Science, Frack Sand Mining Concerns in Southeast Minnesota

4:45 Yujim Kim, Theatre, Kabuki and Greek Theatre

Poster Presentation Session A

SMSU Conference Center Lower Level

Posters displayed 8:30 am to 5:00 pm

Authors available at time listed after title

Biology, Chemistry, Environmental Science & Exercise Science

- 1 Seifemichael Kenea, Biology, Possible mechanism for melanocyte degeneration and the effectiveness of NB-UVB radiation therapy in repigmentation of Vitiligo, Formal 2:45-3:15, Informal 9:30-10:00
- 2 Coleton Draeger, Environmental Science, Observation of Ecological Change in the Clifton Wildlife Management Area Wetland, 3:15-4:45
- 3 Travis Meinders, Biology, Treatment of Sickle Cell Anemia With Stem Cells, Formal 3:45-4:15, Informal 9:30-10:00
- 4 John Craig & Noelle Beyer, Chemistry, Expression of a Recombinant Enzyme, 1:45-2:30
- 5 Courtney Lingen, Biology, Warming of North American Waters: Effects on Mortality and Distribution of Freshwater Fish, Formal 10:30-11:00, Informal 2:00-2:30
- 6 Brittney Anderson, Garrett Conn & Chris Ampe, Exercise Science, The Effects of Teleoanticipation on Power in Powerlifters, Anderson 1:00-2:00, Conn 9:30-10:30, Ampe 11:00-12:00
- 7 Nathanael Gratz, Biology, Nicotine Induced Atherosclerosis and Possible Relationship to Electronic Cigarette Use, Formal 4:15-4:45, Informal 1:30-2:00
- 8 Caci Lingen, Taylor Olson & Fernando Tabares, Biology, Allelopathic Effects of Fresh Ground Coffee on the Growth of Tomato Plants, Lingen/Tabares 9:30-10:15, Olson 2:30-3:15
- 9 Alexis Walker, Biology, A model for amphetamine caused behavioral changes, Formal 11:00-11:30, Informal 11:30-12:00
- 10 Dylan Johnson, Mikaela Cypher, Nicole Cordes & Travis Radke, Biology, The effects of salt stressing on pea plants (*Pisum sativum*), Cordes/Johnson 10:15-11:00, Cypher/Radke 1:15-2:00
- 11 Mikeal Cooper, Environmental Science, Seasonal Evaluation of Camden State Park's Prairie Pothole, 2:15-3:45
- 12 Ben Tonsager, Biology, The Effects of Brain Trauma on the Vestibular Nerve, Formal 1:30-2:00, Informal 11:30-12:00

- 13 John Craig, Biology, Potential of S100B as a Diagnostic Biomarker for Schizophrenia, Formal 1:00-1:30, Informal 2:45-3:15
- 14 Colter Fortenberry, Environmental Science, Seasonal Study of Good Medicine WMA Wetland in Ghent, MN, 1:00-2:30
- 15 Theresa Ehnert, Biology, Effects of Resveratrol on Response to Exercise Training on Selectively Bred Rats, Formal 11:30-12:00, Informal 3:45-4:15
- 16 Luke Stadther, Biology, The Effects of Saffron's Carotenoids on Prostate Cancer and Proposed Mechanisms, Formal 2:00-2:30, Informal 2:30-3:00
- 17 Samantha Ritter, Environmental Science, Investigation of Seasonal Changes in the Independence Park Wetland, 1:00-2:15
- 18 Travis Larson, Biology, Current and Prospective Treatments for Duchenne Muscular Dystrophy, Formal 9:30-10:00, Informal 10:30-11:00
- 19 Caleb A. Heim, Exercise Science, Comparison of Olympic Weightlifting versus Powerlifting in Collegiate Football Players, 11:00-12:00
- 20 Claire Sames, Biology, Gut Microbiota Production of Short-chain Fatty Acids and Their Influence on Obesity via the G-protein Receptor 41 pathway, Formal 10:00-10:30, Informal 1:00-1:30
- 21 Devin Ryan, Environmental Science, Ecological Observations of AmericInn Wetland in Marshall MN, 10:30-12:00
- 22 Joe Christensen, Biology, Binding Properties of Hemocyanin which allow for Transitions Up and Down the Water Column, Formal 3:15-3:45, Informal 11:00-11:30
- 23 Emily Heesch, Paul Schell, Kate Nohner, Biology, Comparing the effects of salt stress on lentils and corn, Heesch/Schell 2:00-2:45, Nohner 11:15-12:00
- 24 Rebecca Sommer, Claire Anderson & Pam Sanders, Biology, Preliminary Screening of Lipid Productivity in Algae for Biofuel Use, 10:30-11:00, 2:45-3:15
- 25 Caci Lingen, Environmental Science, Evaluation of Ecological Changes in the SMSU Event Center Wetland during Fall 2014, 2:30-4:00
- 26 Samantha Ritter, Environmental Science, Impacts of Cover Crops and Tillage Management on Soil Quality in Southern Illinois, 3:15-4:15
- 27 Casey Field, Environmental Science, Evaluation of Biological and Chemical Changes in a Freshwater Marsh near Marshall, MN, 3:30-4:45
- 28 Josh Hughes, Environmental Science, Evaluation of Temporal Ecological Changes in a Shallow Open Water Community near Marshall, MN, 2:30-4:00
- 29 Dustin Schulte, Exercise Science, Differences in health and skill related physical measurements between forwards and backs on the SMSU Men's Rugby team, 1:30-2:30
- 30 William Lato, Exercise Science, Plyometric Hopping Exercise to Improve Agility, 2:00-3:00
- 31 Catarina Gronau, Environmental Science, Seasonal Observations of a Neighborhood Wetland in Marshall, MN, 9:30-11:00
- 32 Travis Radke, Environmental Science, Seasonal Changes in Dovray WMA Type 4 Wetland, 3:15-4:45
- 33 Chelsea Robinson, Ashley Slyter & Dillan Hutchins, Exercise Science, Increasing the speed of a wheelchair athlete, Robinson 10:00-11:00, Slyter 11:00-12:00, Hutchins 1:00-2:00
- 34 Megan Bruns, Austin LaFollette & Rhiannon Sears, Biology, The Use of Fertilizer to Combat Allelopathic Effects of Garlic Mustard on Tomatoes, Bruns/Sears 9:30-10:15, LaFollette 1:30-2:15
- 35 Becky Suter, Exercise Science, Do high heels brand high strength? 9:45-10:45
- 36 Kaley Searcy & Megan Evert, Exercise Science, Functional Movement Screening in Active and Sedentary Men and Women, Searcy 3:00-4:00, Evert 9:30-10:30
- 37 Annette T. Carr, Ashley Timm & Morgan Darner, Exercise Science, Case Study: Ankle-brachial index in Postural Orthostatic Tachycardia Syndrome (POTS), Carr 10:30-11:30, Timm 1:30-2:30; Darner 11:30-12:30
- 38 Ashley Daniels, Holly Erickson & Emily Klima, Exercise Science, Improving Balance through Exercise Prescription, Daniels 1:45-2:45, Erickson 9:45-10:45, Klima 3:30-4:30
- 39 Casey Hertz, Steven Rohlik, Alan Zimmerli & Morgan Weyer-Coates, Biology, The allelopathic effect of sorghum residue on the germination, emergence, and growth of waterhemp seeds, Rohlik/Hertz 10:45-11:30, Weyer-Coates/ Zimmerli 3:00-3:45
- 40 Erica Downing, Katie Erickson & Tara Quast, Exercise Science, The Effects of Caffeine on the Body, Downing 1:15-2:15, Erickson 11:00-12:00, Quast 3:30-4:30

- 41 Courtney Lingen, Environmental Science, Seasonal Ecological Observations of the Sleep Inn Wetland in Marshall, MN, 2:45-4:15
- 42 Alexis Walker, Bryan Safratowich, Murad Hossain, and Lucia Carvelli, Biology, Amphetamine causes trans-generation behaviors by inducing epigenetic modifications, 2:30-3:15
- 43 Samuel VanNevel, Exercise Science, Forced Eccentric Contractions on Gastrocnemius and Soleus Hypertrophy, 3:15-4:15

Poster Presentation Session B

Bellows Academic Library Plaza, BA 272

Posters displayed 8:30 am to 5:00 pm

Authors available at time listed after title

Agronomy, Computer Science, History, Political Science & Sociology

- 44 Casey Field, Agronomy, Effects of AVAIL® Treatments on Height and Dry Weight of a Field Corn, 2:30-3:30
- 45 Brad Hipsag, Agronomy, The Allelopathic Effects of Coffee Grounds and Extracts on Field Peas, 1:30-2:30
- 46 Thomas Sandt, Agronomy, The Effect of Snow Cover on Corn Planted at Different Depths, 2:30-3:30
- 47 Ryan Palmer, Agronomy, Effects of Glyphosate on Tall Waterhemp (*Amaranthus tuberculatus*), 1:30-2:30
- 48 Paige Swenson, Political Science, State and Federal Responses to Invasive Species in Minnesota, 1:30-2:30
- 49 Teather Lacy, Political Science, Rail Car Shortage in Minnesota, 11:00-12:00
- 50 Allison M. Bakken & Jessica Thelemann, Sociology, Race and Gender Portrayed in the Media: A Content Analysis of Front Page and Local Crime Stories in the Minnesota Star Tribune, 2:30-4:00
- 51 Sam Opdahl, Computer Science, Cross Platform HTML5 Mario Style Game, 1:00-2:00
- 52 Andrew Kruse & Gene (Randy) Briest, Computer Science, Java Decompiler, 1:30-3:00
- 53 Duncan Sullivan, Computer Science, QR Tag, 10:30-11:30
- 54 WITHDRAWN
- 55 WITHDRAWN
- 56 WITHDRAWN

- 57 Saugat Pradhan, Computer Science, Mustang Rentals, 1:30-2:30
- 58 Arnold Siyapche, Computer Science, Patient Management System, 2:00-3:00
- 59 Ying Kong Vue, Computer Science, Building an Android App Game, 1:00-2:00
- 60 Alex Kitzberger, Computer Science, Small World, 2:00-3:00
- 61 Prajula Shrestha & Jordan Twachtmann, Computer Science, Jeopardy Game, 10:30-12:00
- 62 Tyler Thompson, Computer Science, Burning Box 3D Engine, 1:30-2:30
- 63 Kaity Harms, History, Corruption of St. Paul Police and Newspapers During the Gangster Era, 10:30-11:30

Poster Presentation Session C

SMSU Student Center Upper Level (SC 216)

Posters displayed 8:30 am to 5:00 pm

Authors available at time listed after title

Ag Business, Mathematics & Psychology

- 64 Kayla Stenzel & Hailey Becker, Ag Business, Agricultural Development in Zimbabwe, 10:00-11:30
- 65 Andy Olson, Ag Business, Developing Agriculture in Niger, 1:30-3:00
- 66 Meagan Williams & Angela Rush, Ag Business, Agriculture of Benin, Africa, 2:30-4:00
- 67 Rachel Groff, Mathematics, Setting Insurance Companies Policies Prices, 10:30-11:30
- 68 MayVang Thao, Mathematics, Tiling Spaces, 1:00-2:00
- 69 Jordan Bakken, Mathematics, Who ranks at the top? Using ranking algorithms to rank NFL teams, 10:30-11:30
- 70 Julie Thaemert, Mathematics, Making Math More “Common,” Minnesota State Standards Better Than Common Core?, 1:30-2:30
- 71 Lizzy Bruder, Mathematics, Subtraction: Traditional vs Common Core, 2:00-3:00
- 72 Dyreen Nyagesuka, Mathematics, The Golden Ratio and Fibonacci Sequence, 2:30-3:30
- 73 Jessica Hulzebos, Mathematics, Predicting Climate Change Through a Mathematical Analysis of Glacial Cycles, 11:00-12:00

- 74 Jeffrey Thompson, Mathematics, Quaternions and its Applications
For Society: Rotation Sequences Used For Un-manned Weather
Satellites, 2:00-3:00
- 75 Jordan Geraets, Mathematics, When Do We Learn Best: The
Timing of Math is Affecting Student Learning, 3:00-4:00
- 76 Kayla Larson, Shelby Julian, April Schulte & Nicole Rasmussen,
Psychology, Memory for Organized and Unorganized Words for
those with Expertise and No Expertise, 1:30-2:30
- 77 WITHDRAWN
- 78 Dan Francis, Jr., Kimberly Schumacher, Matthew Carlson & Bailey
Andersen, Psychology, Congruent words vs. non-congruent words:
How far does the Stroop effect go?, 1:30-2:30
- 79 Brian Redemske, Psychology, Gender Differences in the
Development of Depression, 1:30-2:30
- 80 Honor-Ra Hanson & Monique Beaulieu, Psychology, Effects of
Homosexual Parenting on Children, 1:30-2:30
- 81 Kaltuma Osman & Spencer Thomas, Psychology, The Effect of
Picture and Word Context On Recognition of Component Parts,
1:30-2:30
- 82 Brittany Lade, Greta Jeska, Mark Jankowski & Rachel Trueblood,
Psychology, Comparing visual and auditory memory in college
students with different learning styles, 1:30-2:30
- 83 Carly Salfer & Seth Lewis, Psychology, Benefits of Tutoring, 1:30-
2:30

Original Art Works

SMSU Student Center Upper Level

Posters displayed 8:30 am to 5:00 pm

Authors next to work 9:45-10:30 am

Art Program

- 1 Jessica Bruss, Graduation Exhibition Artwork, Painting & sculpture
combined
- 2 Josephine Jobgen, Graduation Exhibition Artwork, Painting
- 3 Sia Lor, Graduation Exhibition Artwork, Collage
- 4 Traci Otten, Graduation Exhibition Artwork, Graphic Design
- 5 Jayme Wiertzema, Graduation Exhibition Artwork, Painting
- 6 Emily Woodrow, Graduation Exhibition Artwork, Graphic Design