

SCHEDULE OF EVENTS

108th Annual Meeting

Friday, October 27, 2023
Saturday, October 28, 2023

Muenster University Center (MUC) and Farber Hall in Old
Main
University of South Dakota
Vermillion, SD

Local Arrangements co-Chairs
Drs. Bruce Cuevas and David Swanson

SCHEDULE OF EVENTS
Friday, October 27, 2023

- 8:00 am-10:00 am** **Registration (MUC Foyer – 2nd Floor)**
- 9:00 am-4:00 pm** **Missouri River Science and Management Symposium (MUC Ballroom A)**
- 4:00-6:00 pm** **Executive Council Meeting—MUC 216/216A**
- 6:00-7:00 pm** **Dinner – (on your own)**
- 7:00-8:00 pm** **Keynote Address – Tyler Kelley, New School of Journalism, New York, Journalism + Design – (Farber Hall, Old Main)**
KEYNOTE ADDRESS TITLE: Holding Back the River
- 8:00-9:00 pm** **Book Signing with Tyler Kelley - Author of “*Holding Back the River: The Struggle Against Nature on America’s Waterways*”**
Hosted by *Outside of a Dog Books and Games*, Vermillion, SD (Farber Hall, Old Main)

SCHEDULE OF EVENTS
Saturday October 28, 2023

- 8:00 am-10:00 am** **Registration**
- 8:30 am-12:10 pm** **Contributed Papers Sessions (MUC Ballrooms A, B)**
- 12:00-1:00 pm** **Lunch (included in your registration) (MUC Ballroom C)**
- 1:00 pm-2:00 pm** **Poster Session – MUC Foyer (2nd Floor)**
(Authors should be present at their posters for discussion)
- 2:00 pm-4:00 pm** **Presidential Address and Business Meeting (MUC Ballroom C)**

Friday, October 27, 2023

MISSOURI RIVER SCIENCE AND MANAGEMENT SYMPOSIUM

Dr. David Swanson

9:00 am-4:00 pm

MUC Ballroom A

Name of presenter is underlined and boldface

9:00-9:50 A TALE OF TWO RIVERS: CONTRASTING TRAJECTORIES OF DEVELOPMENT AND CONSERVATION ON THE MISSOURI AND MISSISSIPPI RIVERS

Robb Jacobson

University of Missouri, Columbia

9:50-10:20 RECOVERY OF THE NORTHERN GREAT PLAINS PIPING PLOVER

Jordan Smith

U.S. Fish and Wildlife Service, Yankton, SD

10:20-10:40 MORNING COFFEE BREAK

10:40-11:00 ON-RIVER AND OFF-RIVER LEAST TERN ABUNDANCE ON THE 59-MILE REACH OF THE MNRR

David Swanson, Claire Boyko, and Olivia Gulseth

Department of Biology, University of South Dakota, Vermillion, SD

11:00-11:20 RIVER-AQUIFER INTERACTIONS IN THE MISSOURI RIVER FLOODPLAIN

Tim Cowman and Jaron Condley

South Dakota Geological Survey

11:20-11:40 PAST IS NOT PROLOGUE: CLIMATE CHANGE PLANNING FOR THE MNRR

Harrison Freund

National Park Service, Missouri National Recreational River, Yankton, SD

11:40-12:00 THE MRRP INFORMATION MANAGEMENT SYSTEM (IMS): A TOOL FOR RECOVERY PROGRAM MANAGEMENT DECISION MAKING

Coral Huber

U.S. Army Corps of Engineers, Yankton, SD

12:00-1:20 LUNCH (ON YOUR OWN)

1:20-1:40 TEMPERATURE AND PREDATION EFFECTS OF PLANKTONIC COMMUNITY SIZE DISTRIBUTION

Staci Reynolds, Vojsava Gjoni, and Jeff Wesner
Department of Biology, University of South Dakota, Vermillion, SD

1:40-2:00 EFFECTS OF REDCEDAR INVASION ALONG THE MISSOURI RIVER ON RICHNESS AND ABUNDANCE OF RIPARIAN BIRDS

Nadeesha Illeperuma, **Mark D. Dixon**, David L. Swanson, and Ranjeet John
Department of Biology, University of South Dakota, Vermillion, SD

2:00-2:20 MAPPING COTTONWOOD DIEBACK ALONG THE MISSOURI NATIONAL RECREATIONAL RIVER

Nadeesha D. Illeperuma, Kimberly I. Magnuson, John J. Gillaspie, Ranjeet John, and Mark D. Dixon
Department of Biology, University of South Dakota, Vermillion, SD

2:20-2:40 BIOPHYSICAL DRIVERS FOR PREDICTING THE DISTRIBUTION AND ABUNDANCE OF INVASIVE YELLOW SWEETCLOVER IN THE MISSOURI RIVER BASIN OF THE NORTHERN GREAT PLAINS

Sakshi Saraf, Ranjeet John, Reza Goljani Amirkhiz, Venkatesh Kolluru, Khushboo Jain, Matthew Rigge, Vincenzo Giannico, Stephen Boyte, Jiquan Chen, Geoffrey Henebry, Meghann Jarchow, and Raffaele Laforteza
Department of Biology, University of South Dakota, Vermillion, SD

2:40-3:00 AFTERNOON COFFEE BREAK

3:00-3:20 ZEBRA MUSSELS IN SOUTH DAKOTA: ESTIMATES OF ECONOMIC AND BIOLOGICAL IMPACTS

Justin Sorenson, Alison Gross, Anna Kase, and Jake Kerby
Department of Biology, University of South Dakota, Vermillion, SD

3:20-3:40 USING FUTURE CLIMATE AND LAND-USE SCENARIOS TO PREDICT AMPHIBIAN DISTRIBUTION CHANGE IN THE UPPER MISSOURI RIVER BASIN

Kaitlyn Campbell, Andy Baltensperger, and **Jake Kerby**
Department of Biology, University of South Dakota, Vermillion, SD

3:40-4:00 UPDATE ON PALLID STURGEON RELATED EFFORTS IN THE MISSOURI RIVER RECOVERY PROGRAM

Joe Bonneau
U.S. Army Corps of Engineers, Yankton, SD

Friday Evening, October 27, 2023

KEYNOTE ADDRESS AND BOOK SIGNING

Tyler J. Kelley

7:00 pm-9:00 pm

Farber Hall, Old Main

7:00-8:00 pm Keynote Address – **Tyler Kelley, New School of Journalism, New York, Journalism + Design – (Farber Hall, Old Main)**
KEYNOTE ADDRESS TITLE: Holding Back the River

8:00-9:00 pm **Book Signing with Tyler Kelley - Author of “Holding Back the River: The Struggle Against Nature on America’s Waterways”**
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Saturday Morning, October 28, 2023

CONTRIBUTED PAPERS – LIFE SCIENCES

Dr. Mark Dixon

8:30 am-12:10 pm

MUC Ballroom A

Name of presenter is underlined and boldface

8:30-8:50 BRIDGING A GAP BETWEEN OLIGOCENE AND MIOCENE LEPTOMERYCIDAE (MAMMALIA, ARTIODACTYLA) WITH A NEW GENUS FROM BADLANDS NATIONAL PARK, SOUTH DAKOTA
Mattison Shreero, **Ed Welsh**, Katherine Marriott, and Donald R. Prothero
Badlands National Park, Interior, SD [**via ZOOM**]

8:50-9:10 AK072019: A MOLECULAR INHIBITOR OF MRSA ACETATE KINASE EXHIBITING CELLULAR-LEVEL EFFICACY AGAINST STAPHYLOCOCCUS AUREUS

Madison Kovar (UG), Mitchell Lonneman (UG), and Chun Wu
Mount Marty University, Yankton, SD

9:10-9:30 BMP9/ALK1 SIGNALING IN HUMAN HIGHLY PROLIFERATIVE CELLS

Oleksandra Rachynska (UG), Calvin Vary and Michayla Moore
Dakota State University, Madison, SD

9:30-9:50 VARIATION IN METABOLIC RATES AND BODY AND TISSUE MASSES IN RESPONSE TO FLUCTUATING COLD IN HOUSE SPARROWS

Chelsi Marolf and David Swanson
Department of Biology, University of South Dakota, Vermillion, SD

9:50-10:10 EFFECTS OF ACCLIMATION TO STABLE AND FLUCTUATING COLD ON MUSCLE HISTOLOGY AND OXIDATIVE BALANCE IN HOUSE SPARROWS

David Swanson, Chelsi Marolf and Ana Jimenez
Department of Biology, University of South Dakota, Vermillion, SD

10:10-10:30 COFFEE BREAK

10:30-10:50 BIOSYNTHESIS AND APPLICATION OF PLANT NATURAL PRODUCTS

Daniel K. Owens
CBHS Department, South Dakota School of Mines and Technology, Rapid City, SD

10:50-11:10 SEED ASSOCIATED INSECTS OF AMERICAN LICORICE, *GLYCYRRHIZA LEPIDOTA* (FABALES: FABACEAE), IN EASTERN SOUTH DAKOTA

Paul J. Johnson, Arvid Boe and Abigail P. Martens
Insect Biodiversity Lab, South Dakota State University, Brookings, SD

11:10-11:30 FRUIT MORPHOLOGY AND SEED PREDATION IN HONEY LOCUST IN EASTERN SOUTH DAKOTA

Arvid Boe, Paul J. Johnson, and Abigail P. Martens
Agronomy, Horticulture, and Plant Science, South Dakota State University, Brookings, SD

11:30-11:50 FIELD-BASED EVALUATION OF ROOT SEGMENT RESPROUTED YELLOW-FLOWERED ALFALFA STAND: PERSISTENCE AND BIOMASS

Abdulallah M. Alomair, Arvid Boe, and **Lan Xu***
Department of Natural Resource Management, Science, South Dakota State University, Brookings, SD

Saturday Morning, October 28, 2023

CONTRIBUTED PAPERS – PHYSICAL SCIENCES

Dr. Mark Sweeney

8:30 am-11:50 am

MUC Ballroom B

8:30-8:50 WHICH IS BEST: ONLINE, FACE TO FACE OR HYBRID EDUCATION?

Pankaj Mehrotra
Black Hills State University, Spearfish, SD (via **ZOOM**)

**8:50-9:10 INCORPORATING INSTRUMENTATION IN LARGE ENROLLMENT
GENERAL CHEMISTRY LABORATORIES**

Miles D. Koppang

Department of Chemistry, University of South Dakota, Vermillion, SD

9:10-9:30 DIRECT AIR CAPTURE VIA METAL-ORGANIC SUPERCONTAINERS

Hanling Li and Zhenqiang Wang

Department of Chemistry, University of South Dakota, Vermillion, SD

**9:30-9:50 ELECTROCHEMICAL DEGRADATION OF PFAS CONTAMINANTS
USING THIN FILMS**

Sunith Varghese, Parthiba Karthikeyan Obulisamy, Heidi Sieverding, Kurt Chowanski, Bharat Jasthi, Ananth Kandadai, Lisa Kunza, Venkataramana Gadhamshetty
Department of Civil and Environmental Engineering, South Dakota School of Mines and Technology, Rapid City, SD

**9:50-10:10 BIO-LEACHING PROCESS TO EXTRACT RARE EARTH ELEMENT
FROM COAL MINE WASTES**

Mahzuzah Zahan, Purushotham Tukkaraja, Brett Carlson, Srivatsan Jayaraman Sridharan, and Venkataramana Gadhamshetty

Civil and Environmental Engineering, South Dakota School of Mines and Technology, Rapid City, SD

10:10-10:30 COFFEE BREAK

**10:30-10:50 EXOTIC COMPACT OBJECTS MOVING IN DARK MATTER
ENVIRONMENT: IMPLICATIONS FOR DYNAMICAL FRICTION**

Soumodeep Mitra, Sumanta Chakraborty, Justin Feng, Rodrigo Vicente, and Vitor Cardoso

Department of Physics, University of South Dakota, Vermillion, SD

10:50-11:10 STRONG INTERACTION UNDER EXTREME CONDITIONS

Balbeer Singh

University of South Dakota, Vermillion, SD

**11:10-11:30 DUST EMISSION POTENTIAL OF SOUTH DAKOTA SOILS: INSIGHT
INTO THE 1930S DUST BOWL DROUGHT**

Mark Sweeney, Steve Forman, and Taylor Weeden

Dept. of Sustainability & Environment, University of South Dakota, Vermillion, SD

**11:30-11:50 ROLE OF SUBSTRATE STIFFNESS IN TYPE II DIABETIC WOUND
HEALING**

Amelia Huffer and **Tugba Ozdemir**

Biomedical Engineering Program Nanoscience and Nanoengineering Department, South Dakota School of Mines and Technology, Rapid City, SD

Saturday Afternoon, October 28, 2023

- 12:00-1:00 pm** **Lunch (included in your registration) (MUC Ballroom C)**
- 1:00 pm-2:00 pm** **Poster Session – MUC Foyer (2nd Floor)**
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- 2:00 pm-4:00 pm** **Presidential Address and Business Meeting (MUC Ballroom C)**

POSTER SESSION

1:00 pm-2:00 pm

MUC Foyer (2nd Floor)

Name of presenter is underlined & bold.

CHILDBEARING EDUCATION CLASSES IN SOUTH DAKOTA

Kaihlen Smith, Bailey Pickering, and Tayler Modlin

Sanford School of Medicine, University of South Dakota, Vermillion, SD

CLONING AND EXPRESSING MRSA MU50 PHOSPHOTRANSACETYLASE

Kaesha Davis (UG) and Chun Wu

Chemistry Department, Mount Marty University, Yankton, SD

IMMUNOAFFINITY PURIFICATION OF ACINETOBACTER BAUMANNII

ANTIGEN(S) THAT POTENTIALLY INDUCE MULTIPLE SCLEROSIS

Aaron Madden (UG) and Chun Wu

Chemistry Department, Mount Marty University, Yankton, SD

ADVANCING VEGETATION CHANGE DETECTION AND ATTRIBUTION

FRAMEWORK: A HIGH-RESOLUTION MULTI-STAGE MULTI-MODEL

APPROACH TO DECOMPOSE VEGETATION TRENDS TO

SOCIOENVIRONMENTAL SYSTEM DRIVERS

Venkatesh Kolluru, Ranjeet John, Jiquan Chen, Preethi Konkathi, Srinivas Kolluru,

Sakshi Saraf, Geoffrey Henebry, Jingfeng Xiao, and Khushboo Jain

Department of Sustainability and Environment, University of South Dakota, Vermillion, SD

IMMUNOSUPPRESSIVE OPIOIDS ARE ASSOCIATED WITH LONGER HOSPITAL

LENGTH OF STAY IN SARS-COV-2 PATIENTS

Luke Merrill and Benjamin Aaker

Sanford School of Medicine, University of South Dakota, Vermillion, SD

CHARACTERIZATION OF FLUORESCENT PROTEIN-EXPRESSING INFLUENZA VIRUSES

Caycee Schneider (UG) and Victor Huber
Chemistry Department, Mount Marty University, Yankton, SD

ASH1L HAPLOINSUFFICIENCY CAUSES AUTISM-RELATED BEHAVIORAL DEFICITS IN A MOUSE MODEL

Kylee McDaniel (UG), Luye Qin, and Kaijie Ma
Division of Basic Biomedical Sciences, Sanford School of Medicine of the University of South Dakota, Vermillion, South Dakota

DO WE NEED A SALINE BOLUS? THE NECESSARY REFINEMENT OF PEDIATRIC PROPOFOL SEDATION

Laura Nelson, Madigan Moore, Andrew Guymon and Mir Ali
Sanford School of Medicine, University of South Dakota, Vermillion, SD

RENAL SYMPATHETIC NERVE-DERIVED SIGNALING IN CHRONIC HEART FAILURE-ASSOCIATED KIDNEY DISEASE

Trey Vande Kop (UG) and Hong Zheng
Division of Basic Biomedical Sciences, Sanford School of Medicine of the University of South Dakota, Vermillion, South Dakota

INTERACTION OF ENVIRONMENTAL FACTORS ON MACROINVERTEBRATE BODY SIZE

Aria Smith (UG), Vojsava Gjoni, and Jeff Wesner
Department of Biology, University of South Dakota, Vermillion, South Dakota

USING OBJECT BASED IMAGE ANALYSIS TO TRACK CHANGES IN RUSSIAN OLIVE DISTRIBUTIONS ALONG THE MISSOURI RIVER IN RESPONSE TO FLOODING

Zach Schild, Ranjeet John, Venkatesh Kolluru, Sakshi Saraf, and Mark Dixon
Department of Biology, University of South Dakota, Vermillion, SD

METABOLIC SCALING IN AQUATIC MACROINVERTEBRATES

Jacob Woelber (UG), Vojsava Gjoni, and Jeff Wesner
Department of Biology, University of South Dakota, Vermillion, SD

FIELD-SCALE DETECTION OF MULTIPLE AGRICULTURAL MANAGEMENT PRACTICES THROUGH MACHINE LEARNING ALGORITHMS IN EASTERN SOUTH DAKOTA

Khushboo Jain, Ranjeet John, Nathan Torbick, Venkatesh Kolluru, Sakshi Saraf, Geoff Henebry, Abhinav Chandel, and Meghann Jarchow
Department of Sustainability & Environment, University of South Dakota, Vermillion, SD

CYTOTOXICITY AND DETERMINATION OF THE MINIMUM BACTERICIDAL CONCENTRATION (MBC) FOR *COLEUS SCUTELLARIOIDES*

Lexa Burtzlaff (UG) and Kathleen A. Gibson
Mount Marty University, Yankton, SD

DETERMINATION OF MINIMUM INHIBITORY CONCENTRATION (MIC) AND MINIMUM BACTERICIDAL CONCENTRATION (MBC) OF *SALVIA ROSMARINUS* USING A 96 WELL PLATE ASSAY

Elisabeth McGill (UG) and Kathleen A. Gibson
Mount Marty University, Yankton, SD

LOSSY TRANSMISSION LINES AS A TEACHING TOOL FOR THE FINITE-DIFFERENCE TIME-DOMAIN (FDTD) METHOD

Thomas P. Montoya

Department of Electrical Engineering & Computer Science, South Dakota School of Mines & Technology, Rapid City, SD

ANALYZING IMPACTS OF COVER CROPPING AND GRAZING SCENARIOS ON SOIL MOISTURE DYNAMICS USING AN UNSATURATED ZONE MODEL (HYDRUS-2D)

Sujan Pokhrel, M. Geza, and C. Graham

South Dakota School of Mines & Technology, Rapid City, SD

South Dakota Academy of Science

Executive Committee 2022-2023

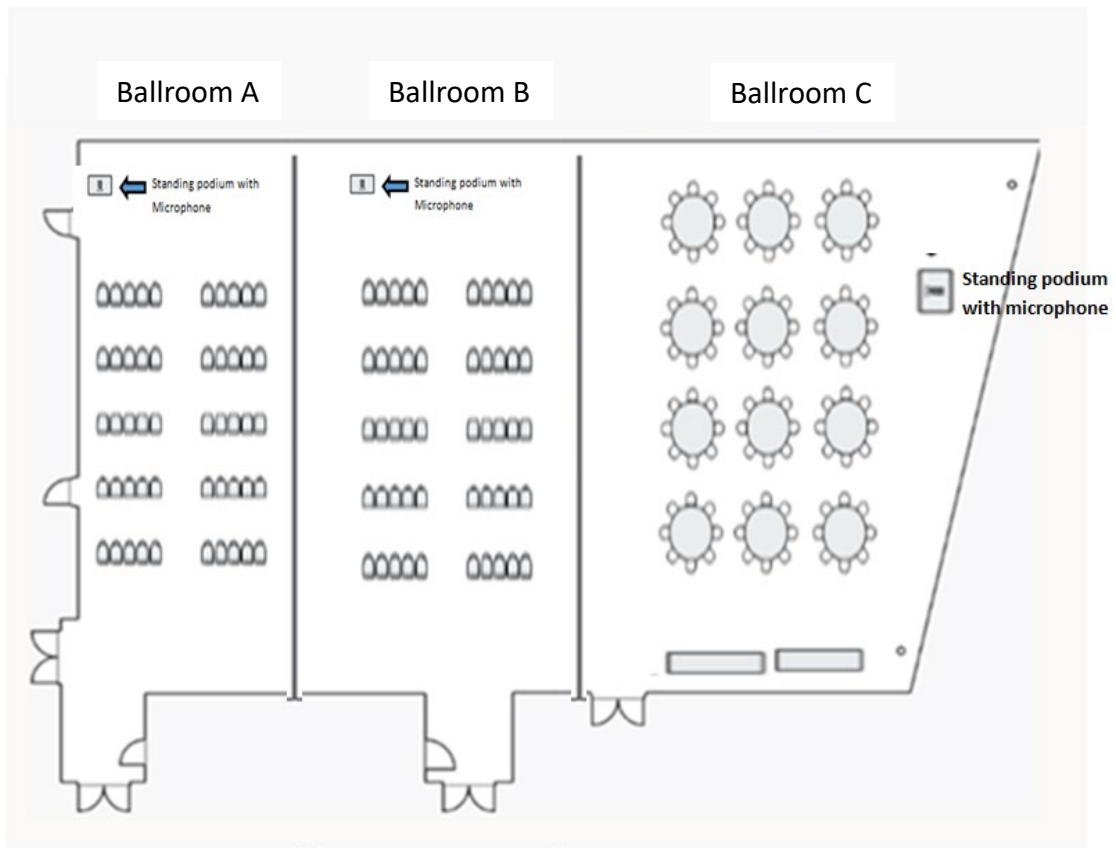
President 2020-2023	Tim Mullican, DWU, Biology
Vice President 2020-2023	Thomas Montoya, SDSM&T, Electrical Eng
Past President 2020-2023	Vicki Geiser, FRHS, Marketing
Secretary	Donna Hazelwood DSU, Biology (retired)
Treasurer	Jeff Palmer DSU, Mathematics
Proceedings Editor	Robert Tatina, DWU, Biology (retired)
Chair, Fellows Nominating Committee	Robert Tatina, DWU, Biology (retired)
Chair, Membership Committee	Vicki Geiser, FRHS, Marketing
Co-chair, Social Media Committee	Alyssa Kiesow, NSU, Biology
Co-chair, Social Media Committee	Vicki Geiser, FRHS, Marketing
Publicity	Paula Mazzer, DWU, Chemistry
Publicity	Robert Tatina, DWU, Biology (retired)
Publicity	David Bergmann, BHSU, Biology
Webmaster	Tim Mullican, DWU, Biology
Member-at-Large 2017-2022	Mark Gabel, BHSU, Biology (retired)
Member-at-Large 2020-2022	Kayla Miller, DWU, Biology
Member-at-Large 2017-2022	Adam Sturlaugson, USF, Chemistry
Member-at-Large 2020-2023	Arvid Boe, SDSU, Plant Science
Member-at-Large 2020-2023	Bruce Cuevas, USD, Basic Medical Sciences
Member-at-Large 2020-2023	Paul Johnson, SDSU, Entomology
Member-at-Large 2020-2023	Alyssa Kiesow, NSU, Biology
Member-at-Large 2020-2023	Xu Lan, SDSU, Natural Resource Management
Member-at-Large 2020-2023	Chao Zhang, MMU, Physics
Graduate Student-Member-at-Large 2021-2023	Abigail Martens, SDSU, Entomology

*elected VP for 2023-2025

Upcoming Meeting Locations

2024 Northern State University
2025 South Dakota School of Mines and Technology
2026 University of Sioux Falls
2027 Dakota Wesleyan University

To 216/216A



Poster Area

MUC Foyer

Map of Muenster University Center – 2nd Floor