



2024 ND WATER QUALITY MONITORING CONFERENCE

Water Quality Impacts in a Changing Landscape

March 11-13, 2024

Bismarck State College
National Energy Center of Excellence
Bavendick State Room
1200 Schafer Street
Bismarck, North Dakota



MONDAY, MARCH 11, 2024

12:00 pm - 1:00 pm REGISTRATION & CHECK-IN

FOYER, 4TH FLOOR
NATIONAL ENERGY CENTER OF EXCELLENCE

1:00 pm WELCOME

BAVENDICK STATEROOM

Joel Galloway, Hydrologic Studies Chief, Dakota Water Science Center, US Geological Survey
Karl Rockeman, Director, Division of Water Quality, ND Dept of Environmental Quality

Session 1 WORKING ACROSS CULTURES

MODERATOR: KARL ROCKEMAN, NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY

1:20 pm

- UNDERSTANDING DIFFERENCE THROUGH MEANINGFUL ENGAGEMENT

*Jan Stankiewicz, Extension Specialist Community Health & Nutrition Agricultural Affairs
Tribal Liaison, NDSU Extension Office*

1:50 pm

- CHARACTERIZATION OF SURFACE WATER AND GROUNDWATER QUALITY ON THE FORT BERTHOLD RESERVATION, NORTH DAKOTA, 2014-17

Robert (Bob) Lundgren, Hydrologist / Tribal Coordinator, U.S. Geological Survey

2:20 pm

- CIVIL RIGHTS, ENVIRONMENTAL JUSTICE AND WATER QUALITY MONITORING

*Ann Fritz, Nondiscrimination / Environmental Justice Program Coordinator
ND Department of Environmental Quality*

2:40 pm – 3:10 pm BREAK Sponsor – North Dakota Department of Environmental Quality

Session 2 CONTAMINATES OF EMERGING CONCERN

MODERATOR: JOE NETT, NORTH DAKOTA DEPARTMENT OF WATER RESOURCES

3:10 pm

- LEAD AND COPPER MONITORING FOR DRINKING WATER

Sandy Washek, North Dakota Department of Environmental Quality

3:30 pm

- PFAS IN DRINKING WATER

Stacey Harried, North Dakota Department of Environmental Quality

- PFAS IN THE ENVIRONMENT

Shannon Suggs, North Dakota Department of Environmental Quality

4:00 pm

- FISH TISSUE MONITORING

Pete Wax, Special Projects, North Dakota Department of Environmental Quality

4:30 pm WRAP-UP

Thank you, Exhibitors!



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TUESDAY, MARCH 12, 2024

8:00 am – 8:30 am **Welcome**

Session 3 **HYDROLOGY AND WATER QUALITY**

MODERATOR: SHANNON SUGGS, NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY

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- 8:30 am** ■ WATER QUALITY CHARACTERISTICS OF THE RED RIVER AND TRIBUTARIES IN THE FARGO-MOORHEAD AREA RELATED TO THE FLOOD MANAGEMENT PROJECT
Spencer Wheeling, U.S. Geological Survey
-
- 9:00 am** ■ GROUNDWATER RECHARGE TO COLD REGION SHALLOW UNCONFINED AQUIFER USING PROCESS-BASED MODELS
Hesham Mahmud, University of North Dakota
-
- 9:30 am** ■ SPIRITWOOD HYPOLIMNETIC DRAWDOWN SYSTEM
Jim Collins, Clearwater Communications

10:00 am – 10:30 am **BREAK** *Sponsor – UND College of Engineering and Mines*

Session 4 **COMMUNICATION & EDUCATION**

MODERATOR: EMILY JOYNT, NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY

-
- 10:30 am** ■ THE MAGIC OF CITIZEN SCIENCE (VIRTUAL)
Madison Eklund, Expedition Alpine
-
- 10:50 am** ■ RIVERWATCH-MONTPELIER, STUDENT PRESENTATIONS AND OVERVIEW
Ellen Fehr, Cecelia Bear, Cheyenne Bowen, Jacob Lusby, Locklynn Steele & Mylee Widmer; Riverwatch-Montpelier
-
- 11:10 am** ■ THE MAKING OF COMMON GROUND: A PRAIRIE PODCAST. STORIES AND INTERVIEWS WITH THE FOLKS LEADING HANDS-ON CONSERVATION EFFORTS THROUGHOUT NORTH DAKOTA AND THE BROADER GREAT PLAINS
Josh Anderson, Three Rivers SCD

11:30 am – 12:00 pm **Exhibitors & Posters**

12:00 pm – 2:00 pm **Luncheon & Keynote**
Communicating Science - *Sheril Kirshenbaum, Michigan State University*

Session 5 **LONG TERM MONITORING AND TRENDS**

MODERATOR: ALYSSA SCHIWAL, NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY

-
- 2:00 pm** ■ NORTH DAKOTA SURFACE WATER AMBIENT MONITORING NETWORK
Mickey Schick, North Dakota Department of Environmental Quality
-
- 2:20 pm** ■ NDDEQ GROUNDWATER AMBIENT MONITORING PROGRAM
Casey Gleich, North Dakota Department of Environmental Quality
Ryan Kritzberger, North Dakota Department of Environmental Quality
-
- 2:40 pm** ■ COMPREHENSIVE WATER QUALITY TREND ANALYSIS FOR SOURIS RIVER BASIN
Rochelle Nustad, U.S. Geological Survey
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TUESDAY, MARCH 12, 2024 (continued)

3:00 pm – 3:30 pm **BREAK** Sponsor – Barr Engineering

Session 6 DATA INNOVATIONS

MODERATOR: ROCHELLE NUSTAD, U.S. GEOLOGICAL SURVEY

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- 3:30 pm** ■ USING PREDICTIVE MODELS FOR HARMFUL ALGAL BLOOMS: INTEGRATING CYANOBACTERIA DATA WITH METEOROLOGICAL AND WATER QUALITY INDICATORS IN DEVIL'S LAKE, NORTH DAKOTA
Devarshi Patel, University of North Dakota
-
- 3:50 pm** ■ USING A.I. TO HELP WITH GIS DATA QUERY
Tanner Woutat, North Dakota Department of Environmental Quality
-
- 4:10 pm** ■ DEVELOPMENT AND COMPARATIVE EVALUATION OF DATA LEARNING MODELS FOR PREDICTING RAINFALL-RUNOFF USING BORUTA-EXTREME GRADIENT BOOSTING
Arvin Samadi-Koucheksaraee, North Dakota State University
-
- 4:30** ■ REMOTELY CONTROLLED DRIP IRRIGATION FOR TOMATO AND PEPPER PRODUCTIONS INSIDE AND OUTSIDE A HIGH TUNNEL IN NORTH DAKOTA
Sai Sri Sravya Vishnumolakala, North Dakota State University
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Thank you, Conference Partners!

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College of Engineering & Mines

Wednesday, March 13, 2024

8:00 am – 8:40 am **Total Phosphorus Target Load for the Red River at Emerson:**

Morning Plenary **Where's the Historical Perspective?**

Scott Korom, UND College of Engineering & Mines

Session 7 **HARMFUL ALGAL BLOOMS (HABs)**

MODERATOR: SCOTT KOROM, UND COLLEGE OF ENGINEERING & MINES

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- 8:40 am** ■ HABs ASSESSMENT OF BOWMAN-HALEY RESERVOIR
Joel Galloway, U.S. Geological Survey
-
- 9:10 am** ■ HABs MONITORING PAST, PRESENT, AND FUTURE
Brian Houle, North Dakota Department of Environmental Quality
-
- 9:40 am** ■ DETECTION OF CHLOROPHYLL REGIONS TO TRACK HARMFUL ALGAL BLOOMS (HABs) IN DEVILS LAKE, ND.
Devarshi Patel, University of North Dakota

10:10 am – 10:30 am **BREAK** *Sponsor – North Dakota Water Resources*

Session 8 **WETLANDS**

MODERATOR: AARON LARSON, NORTH DAKOTA GAME AND FISH

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- 10:30 am** ■ EVALUATION OF THE IMPACTS OF WETLANDS ON HYDROLOGIC PROCESSES AND NUTRIENT LOADING BASED ON WETLAND DELINEATION AND RESTORATION
Tiansong Qi, North Dakota State University
Mosammat Khanaum, North Dakota State University
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- 10:50 am** ■ DETERMINING THE AREA OF CONSTRUCTED WETLANDS NEEDED TO SIGNIFICANTLY IMPROVE WATER QUALITY IN IMPAIRED RED RIVER VALLEY WATERSHEDS
Kyle Boutin, North Dakota State University
-
- 11:10 am** ■ DETECTING REGIME SHIFTS: UNCOVERING UNIQUE RELATIONSHIPS BETWEEN WETLAND SURFACE AREA AND COMMUNITY DYNAMICS
Julia Hampton, University of North Dakota
-
- 11:30** ■ WATERFOWL PRODUCTION AND HABITAT QUALITY OF DUCKS UNLIMITED'S WORKING LANDS PROGRAMS
Kyle Kuechle, Ducks Unlimited

CONFERENCE END