

# 2012 ND Water Quality Monitoring Conference

February 27-29, 2012  
Best Western Ramkota Hotel  
Bismarck, North Dakota

## Agenda

### Monday, February 27, 2012

**11:00 am** REGISTRATION & CHECK-IN | **Dakota Ballroom Foyer**

**EXHIBITOR SHOWCASE** | **Courtyard**

**1:00 pm** WELCOME & OPENING SESSION | **Patterson & Lamborn**

#### WATER QUALITY ANALYSIS

- The North Dakota Watershed Boundary Dataset - a GIS Framework Layer  
*Ann Fritz, North Dakota Department of Health*
- Trends in Major Ion and Nutrient Concentrations in the Mainstem of the Red River of the North  
*Aldo Vecchia, U.S. Geological Survey*
- Evaluation of Water-Quality Characteristics and Sampling Design for Streams in North Dakota, 1970-2008  
*Joel Galloway, U.S. Geological Society*
- Development of Reference Sediment Yields for Rivers and Streams in ND  
*Andrew Simon, Cardno ENTRIX*

**2:40 pm** BREAK | **Courtyard**

#### BIOASSESSMENT AND WETLANDS

- Invertebrate Biotic Integrity and Watershed Condition in Eastern South Dakota: Evaluating Attila as a Screening Tool for Headwater Reference Site Selection  
*Nels Troelstrup, South Dakota State University*
- Summary of the Red River Bioassessment Project in North Dakota  
*Aaron Larsen, North Dakota Dept. of Health*
- Wetland Assessment in North Dakota Using Three Tiered Assessment Methods  
*Christina Hargiss, North Dakota State University*
- The Development of a Multiple Collaborator Venture Connected to the National Wetland Condition Assessment in North Dakota  
*Shawn DeKeyser, North Dakota State University*
- Wetland Assessment and Ecosystem Services  
*Lindsey Meyers, North Dakota State University*
- Amphipod Density as a Biological Indicator of Wetland Quality in the Prairie Pothole Region of North Dakota  
*Mark Wiltermuth, U.S.G.S.—Northern Prairie Wildlife Research Center*

**5:00 pm** WRAP-UP

**6:00 pm to 8:00 pm** POSTER SESSION & NETWORKING SOCIAL | **Grand Pacific Ballroom**

## Tuesday, February 28, 2012

### 8:00 am EMERGING CONTAMINANTS & THREATS TO WATER QUALITY

- Mobility and Fate of Estrogenic Hormones in the Environment  
*Casey Francis, North Dakota State University*
- Development of a Biosensor for Monitoring of Mercury Pollution in Natural Water  
*Jiao Chen, Department of Chemistry, University of North Dakota*
- Potential Macroinvertebrate Toxicity of Sediment Bound Pyrethroid Insecticides in Urban Streams and Drains of Billings, Montana  
*Rick Mulder, Montana Department of Agriculture*
- Monitoring North Dakota Surface Waters for Pesticides  
*Jessica Johnson, North Dakota Dept. of Agriculture*
- Source Tracking of Cryptosporidium spp. in the Red River Valley  
*Brianna Stenger, North Dakota State University*
- Contamination of Prairie Pothole Region Wetlands and Streams by Petroleum-Field Brines: Potential Impacts to Water Chemistry and Aquatic Biota  
*Brian Tangen, U.S.G.S.—Northern Prairie Wildlife Research Center*

### 10:00 am BREAK | Courtyard

### 10:20 am RIVER WATCH PROGRAMS

- River Watch in the Red River Basin  
*Wayne Goeken, International Water Institute*
- River Watch North Dakota: The Beginning  
*Andre DeLorme, Prairie Waters Education and Research Center*
- Student Monitoring of the Wild Rice River  
*Sargent High School*
- Student Monitoring of the James River  
*LaMoure High School*
- Student Monitoring of the Goose River  
*Mayville-Portland High School*
- Student Monitoring of the Souris River  
*Minot High School*

### 12:00 pm LUNCH WITH KEYNOTE PRESENTATION | Grand Pacific Ballroom

Analysis of Changing Hydrologic Conditions: Water Quantity and Quality  
*Dr. Robert Hirsch, US Geological Survey*



*Methods of analysis of water quality and river flow have traditionally been based on assumptions of stationarity. Today, we have come to recognize that hydrologic systems experience large changes at time scales of decades to centuries. These come about due to long-term hydrologic persistence, human activities on the landscape, and human modifications of the global atmosphere.*

*This session will consider the nature of the changes taking place in the United States and new approaches to describing and understanding those changes. Examples will include nutrient transport and streamflow trends including some from the Red River of the north.*

## Tuesday, February 28, 2012 *Continued*

### 1:30 pm LAKE ASSESSMENT AND MANAGEMENT

- Establishing State-Wide Nutrient Criteria Using a Stochastic Modeling Approach  
*Mark Deutschman, Houston Engineering*
- Development of Nutrient Criteria for Lakes and Reservoirs in Northern Plains States  
*Stephanie Johnson, Houston Engineering*
- Monitoring and Evaluation of an Aeration System to Increase Dissolved Oxygen Levels at an Impoundment in the Northern Great Plains  
*Kate Overmoe-Kenninger, North Dakota State University*
- Seasonal Variations of Water Quality and Algal Growth in the Heinrich-Martin Dam Impoundment  
*Veselina Valkov, North Dakota State University*
- A Summary of the Use of Hypolimnetic Discharge Systems to Improve Reservoir Water Quality in North Dakota  
*Fred Ryckman, North Dakota Department of Game and Fish*

### 3:10 pm BREAK | Courtyard

### 3:30 pm AGRICULTURE AND WATER QUALITY

- Remote Sensing Crop Residue for Improved Watershed Management  
*Jonathan Aguilar, USDA-ARS NRPRL*
- North Dakota Discovery Farms: Agricultural Water Quality Monitoring in Small Watersheds  
*Kathleen Rowland, USGS North Dakota Water Science Center*
- Red River Valley Water Quality Assessment of Agricultural Subsurface Drains - Phase II  
*Roxanne Johnson, North Dakota State University*
- Water Quality and Potential Adverse Ecological Effects Associate with Agricultural Tile Drainage in South Dakota  
*Matt Schwarz, US Fish and Wildlife Service*
- Modeling the Impact of Subsurface Drainage on Streamflow and Water Quality in Red River Using SWAT  
*Zhulu Lin, North Dakota State University*
- Using Controlled Drainage to Reduce Chemical Loads  
*Xinhua Jia, North Dakota State University*

### 5:30 pm WRAP-UP

## In Partnership With:



**NORTH DAKOTA**  
DEPARTMENT of HEALTH



North Dakota  
Water Resources Research Institute



Wednesday, February 29, 2012

**8:00 am WATER QUALITY AND WATERSHED MANAGEMENT**

- A Comprehensive Data Acquisition and Dissemination System for North Dakota  
*Chris Bader, North Dakota State Water Commission*
- Natural Remediation of Nitrate Contamination in Ground Water: Measuring In Situ Denitrification Using In Situ Mesocosms  
*Scott Korum, University of North Dakota, Dept. of Geology and Geological Engineering*  
*William Schuh, North Dakota State Water Commission*
- State-of-the-Art Environmental Modeling for Surface-Subsurface Systems  
*Xuefeng Chu, North Dakota State University, Dept. of Civil Engineering*
- Multi-element Fingerprinting for Monitoring Water and Sediments  
*Marinus Otte, North Dakota State University*
- Strategic Flood Damage Reduction Using LiDAR Data: Prioritizing Water Detention Areas in the Red River Basin  
*Henry Van Offelen, Minnesota Center for Environmental Advocacy*
- A Proposed Approach to Developing a Basin-Wide Nutrient Management Strategy for the International Red River Watershed  
*Robin Gislason, Red River Basin Commission*

**10:00 am BREAK | Courtyard**

**10:20 am WATER QUALITY ASSESSMENT**

- Water Quality Trends of the Upper Devils Lake Basin in the Vicinity of Lake Alice National Wildlife Refuge, North Dakota  
*Gregory Vandenberg, Dept. of Geography, University of North Dakota*
- Real-time Water Quality Monitoring for Devils Lake  
*Xiaodong Zhang, University of North Dakota*
- A Long-Term Water-Quality Monitoring Program at Long Lake National Wildlife Refuge: Temporal Trends from the First Four Years  
*Ray Finocchiaro, USGS - Northern Prairie Wildlife Research Center*
- Water-Quality Monitoring in Agassiz National Wildlife Refuge  
*Rochelle Nustad, US Geological Survey*
- Results of the 2008-2010 Lake Water Quality Assessment Project  
*Peter Wax, North Dakota Dept. of Health*

**12:00 pm WRAP UP AND EVALUATIONS | Patterson & Lamborn**

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