Welcome from the Co-chairs

We are excited to invite you to the 2018 Minnesota Water Resources Conference. We thank all those who submitted abstracts and the Water Resources Planning committee for their work in developing a timely and engaging program for this year’s conference. The lineup of breakout sessions and posters will provide the latest knowledge on a rich array of water resource topics important to Minnesota and beyond. As always, these sessions will be complemented by a lineup of sought-after plenary speakers in the morning and luncheon sessions.

As a new feature this year, we are delighted to welcome the Wetlands Professionals Association and the University of Minnesota’s Wetland Delineator Certification Program, who have jointly organized a wetlands-focused workshop. This workshop will be offered as a special track of sessions on Tuesday.

We also thank the attendees from previous years for feedback on the conference experience. The committee considered these comments carefully and has responded by keeping the features that work well and modifying those that can be improved. Features that have been added or improved in recent years include:

- Water Bar, making a return to serve a selection of local tap waters
- A breakout schedule with four presentations per session, allowing for a program with a large and diverse set of presented topics
- Professional development and mentoring opportunities for student and young professional attendees

Finally, we would like to thank our exhibitors for both their financial support and the energy they bring to the networking breaks and Tuesday afternoon reception.

Please join us along with over 700 other policy makers, academics, local implementers, and water resources advocates on October 16 and 17 at the Saint Paul RiverCentre for this annual event.

Jeffrey Peterson, Water Resources Center, University of Minnesota,
Tina Carstens, Ramsey-Washington Metro Watershed District,
Joel Larson, Water Resources Center, University of Minnesota,
Conference Co-Chairs
Immerse yourself in innovative, practical, and applied water resource engineering solutions, management techniques, and current research about Minnesota’s water resources. The Minnesota Water Resources Conference is an opportunity to address:
- lessons learned from the implementation of engineering projects
- best practices discovered in the design and application of water resource management techniques
- implications of water policy decisions
- research into current and emerging issues

Registration and Fees
Early registration
(before September 21)
Two-day − $250
One-day − $175
Student − $65

Regular registration
(starting September 21)
Two-day − $300
One-day − $225
Student − $85

The registration fee for the Minnesota Water Resources Conference includes access into all plenary, luncheon, and concurrent sessions, special sessions, poster sessions, conference materials, lunch and refreshment breaks each day, and the Tuesday evening reception. Participants may register online, by fax or mail, for both days or one day only.

Cancellations
Refunds, minus a $30 fee, will be issued to participants who provide a written cancellation notice by October 5. If you cancel after this date, you will not be eligible for a refund. The University reserves the right to cancel the conference, if necessary, in which case a full refund would be made.

Continuing Education Units (CEUs); Professional Development Hours (PDHs)
Conference attendees will receive .675 CEUs/6.75 PDHs for each day of the Minnesota Water Resources Conference. Participants who wish to receive full credit must attend all scheduled hours of the event.

Location and Parking
The Water Resources Conference will be held at the Saint Paul RiverCentre, 175 Kellogg Boulevard, Saint Paul, Minnesota. Parking is available in the RiverCentre parking ramp, which is located on Kellogg Boulevard across the street from RiverCentre. Please see the map for the location of RiverCentre. Convenient bus service to the RiverCentre is available. Call Metropolitan Transit, 612-373-3333 for specific route information.

Accommodations
Hotel rooms are available at the Holiday Inn RiverCentre, 175 West 7th Street, Saint Paul, Minnesota. Call the hotel directly at 651-225-1515 or toll free at 888-465-4329 and ask for the University of Minnesota rate. Make your reservation early in order to ensure a room at the hotel.

For Registration Questions
612-625-2900
ccapsreg@umn.edu

For Program Questions
Alicia Anderson
University of Minnesota
612-626-9634
ccapsconf3@umn.edu

WETLANDS CONFERENCE SPECIAL SESSION
Wetlands in Minnesota’s landscapes provide important functions and value to the public: water quality improvements, floodwater attenuation, wildlife habitat, groundwater recharge, recreational opportunities, and commercial uses, among others. The complex roles of wetlands in the changing landscape continue to be studied and documented. In joining with the Minnesota Water Resources Conference, this special session provides an excellent forum to focus on wetlands subject matter to improve collective wetlands knowledge and increase understanding of how wetlands integrate with water resources management throughout the state.
2018 Water Resources Planning Committee

John Baker, US Department of Agriculture, and Department of Soil, Water, and Climate, University of Minnesota

Ann Banitt, US Army Corps of Engineers

Will Bartsch, Natural Resources Research Institute, University of Minnesota Duluth

Jeff Berg, Minnesota Department of Agriculture

John Bilotta, MN Sea Grant, University of Minnesota Extension

Mark Brigham, US Geological Survey

* Tina Carstens, Ramsey-Washington Metro Watershed District

Bill Douglass, Bolton & Menk, Inc.

Kristi Fischer, College of Continuing and Professional Studies, University of Minnesota

Katherine Hagberg, College of Continuing and Professional Studies, University of Minnesota

Lorin K. Hatch, RMB Environmental Laboratories

Andrea Hendrickson, Minnesota Department of Transportation

Kimberly Hill, St. Anthony Falls Laboratory, University of Minnesota

Karen Jensen, Metropolitan Council

Stephanie Johnson, Mississippi Watershed Management Organization

Cheryl Konate, Water Resources Center, University of Minnesota

Ron Leaf, Kimley-Horn and Associates, Inc.

* Joel Larson, Water Resources Center, University of Minnesota

Dendy Lofton, LimnoTech

Salam Murtada, Department of Natural Resources, Division of Waters

Randy Neprash, Minnesota Cities Stormwater Coalition & Stantec

* Jeffrey Peterson, Water Resources Center, University of Minnesota

Amit Pradhananga, Department of Forest Resources, University of Minnesota

Nichole Salinas, College of Continuing and Professional Studies, University of Minnesota

Shawn Schottler, St. Croix Watershed Research Station

Wayne Sicora, Natural Resource Group

Gene Soderbeck, Minnesota Pollution Control Agency

James Stark, Minnesota Legislative Water Commission

Katy Thompson, ASCE Representative and RESPEC

Stew Thornley, Minnesota Department of Health

Rick Voigt, Voigt Consultants, LLC

Marcy Westrick, Board of Water and Soil Resources

Greg Wilson, Barr Engineering Company

*Committee Co-Chairs

Dave Ford Award

Originally known as the Kuehnast Award, the Dave Ford Water Resources Award was created in 2003, renamed for esteemed Department of Natural Resources hydrologist Dave Ford, who died prematurely from cancer in January 2003. Ford was highly regarded by his water resources colleagues, who sought to honor him with an award to be presented to others in the field who also have made an indelible impact on Minnesota’s environmental landscape. Ford had an excellent theoretical understanding of various computer simulation models, along with the practical knowledge to effectively use those models to address a variety of water resource management issues. But more importantly, he was a teacher, a mentor, a cooperator, and a friend.

Past Award recipients of the Earl Kuehnast Award

<table>
<thead>
<tr>
<th>Year</th>
<th>Recipient</th>
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<tbody>
<tr>
<td>1986</td>
<td>Earl Kuehnast</td>
</tr>
<tr>
<td>1987</td>
<td>Ed Bowers</td>
</tr>
<tr>
<td>1991</td>
<td>Peter Fischer</td>
</tr>
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<td>1992</td>
<td>Howard Midje</td>
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<tr>
<td>1999</td>
<td>Ron Nargang</td>
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Past award recipients of the renamed Dave Ford Water Resources Award

<table>
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<tr>
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<tbody>
<tr>
<td>2003</td>
<td>Heinz G. Stefan</td>
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<tr>
<td>2005</td>
<td>Marcel Jouseau</td>
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<tr>
<td>2006</td>
<td>Ron Harnack</td>
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<tr>
<td>2007</td>
<td>Patrick Brezonik</td>
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<tr>
<td>2008</td>
<td>Steve Heiskary</td>
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<tr>
<td>2009</td>
<td>James L. Anderson</td>
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<td>2010</td>
<td>Nels Nelson</td>
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<tr>
<td>2011</td>
<td>Timothy Scherkenbach</td>
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<tr>
<td>2012</td>
<td>Barbara Liukkonen</td>
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<tr>
<td>2013</td>
<td>John Gulliver</td>
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<tr>
<td>2014</td>
<td>Roland Sigkonik</td>
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<td>2015</td>
<td>Bruce Wilson (RESPEC)</td>
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<tr>
<td>2016</td>
<td>Cliff Aichinger</td>
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<tr>
<td>2017</td>
<td>Dan R. Engstrom, Kent Johnson</td>
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# Program Schedule – Tuesday, October 16, 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>8:00–8:10 a.m.</td>
<td>Welcome, Jeff Peterson, Water Resources Center, University of Minnesota</td>
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<tr>
<td>8:10–8:20</td>
<td>Dave Ford Water Resources Award</td>
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<tr>
<td>8:20–9:30</td>
<td>Soil: The Birthplace of a Healthy Planet, Ray Archuleta, Soil Health Consultants</td>
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<tr>
<td>9:30–10:00</td>
<td>Poster and Vendor Refreshment Break</td>
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## Concurrent Sessions

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<tr>
<th>Track A</th>
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<th>Track C</th>
<th>Track D</th>
<th>Wetlands Special Session</th>
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<tbody>
<tr>
<td>10:00–11:30 a.m. Stormwater Innovative Science and Practices</td>
<td>Erosion and Sedimentation&lt;br&gt;Moderator: Gene Soderbeck, Minnesota Pollution Control Agency&lt;br&gt;Co-Moderator: Mark Brigham, U.S. Geological Survey</td>
<td>Collaborative Watershed Management and Agricultural Decision Making&lt;br&gt;Moderator: Joel Larson, Water Resources Center, University of Minnesota&lt;br&gt;Co-Moderator: Jeff Beng, Minnesota Department of Agriculture</td>
<td>Chloride and Bacteria Monitoring and Management&lt;br&gt;Co-Moderator: Tracey Fallon, University of Minnesota</td>
<td>Performance Standards and FOA&lt;br&gt;Moderator: Shawn Schottler, St. Croix Watershed Research Station&lt;br&gt;Co-Moderator: Jennifer Kann, Stantec; Shawn Williams, WSB Engineering; Daniel Wheeler, University of Minnesota</td>
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<tr>
<td>10:00–11:30 a.m. Sediment and Gross Solids Removal by Pretreatment Practices for Bioretention</td>
<td>From Skid Trails to Landscapes: Revegetation Is the Dominant Factor Influencing Erosion After Forest Harvest in Minnesota&lt;br&gt;Zachary McEachran, University of Minnesota&lt;br&gt;Diana Karwan, Rob Slesak, Minnesota Forest Resources Council and University of Minnesota</td>
<td>Developing Watershed Solution Strategies with Residents of the Watonwan River Watershed&lt;br&gt;Kimberly Musser, Water Resources Center, University of Minnesota&lt;br&gt;Michel E. Boucher, Stantec Consulting Group</td>
<td>Chloride Contributions from Water Softeners and Other Domestic, Industrial, and Agricultural Sources to Minnesota Waters&lt;br&gt;Alicia Overbo, Sara Heger, University of Minnesota</td>
<td>Performance Standards for Wetland Mitigation&lt;br&gt;Steve Eggers, US Army Corps of Engineers</td>
</tr>
<tr>
<td>10:40–11:00 a.m. Strategies for Identifying and Prioritizing Corrective Actions for Ineffective Water Quality Ponds and Wetlands</td>
<td>Sediment Accumulation Rates in the Lower Minnesota River Watershed Have Changed&lt;br&gt;Carrin Jennings, Freshwater Society&lt;br&gt;Vania Stefanova, Mark Shapley, University of Minnesota</td>
<td>Reducing the Environmental Impact of Corn Monoculture: Farmer Willingness to Accept for Alternative Cropping Systems&lt;br&gt;Lucia Levers, Amy Frahananga, University of Minnesota</td>
<td>Bacterial Source Tracking in the Lambert Creek Watershed: An Integrated Approach to Identifying and Reducing Bacterial Loads to Meet Regulatory Requirements&lt;br&gt;Steve Gruber, Burns &amp; McDonnell Engineering; Brian Concoran, Vadnais Lake Area Water Management Organization</td>
<td>Performance Standards for Wetland Mitigation&lt;br&gt;Steve Eggers, US Army Corps of Engineers</td>
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### Program Schedule – Tuesday, October 16, 2018 (continued)

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<tbody>
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<td>11:20−11:30</td>
<td>Pop-up Poster Presentations Pop-up Poster Presentations Pop-up Poster Presentations Pop-up Poster Presentations</td>
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<tr>
<td>11:30−12:15</td>
<td>Lunch</td>
</tr>
</tbody>
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| 12:15−1:00 | Water Science Direction and Perspectives of the Water Resources Research Act Program and Water Mission Area, US Geological Survey  
               Earl Greene, US Geological Survey                                                   |
| 1:15−2:45 p.m. | **Green Infrastructure**  
               **Track A**  
               Moderator: Stephanie Johnson, Mississippi Watershed Management Organization  
               Co-Moderator: Ron Leaf, Kimley-Horn and Associates  
               **Track B**  
               **Track C**  
               **Track D**  
               **Wetlands in Landscapes**  
               Moderator: Ashley Payne, Kimley-Horn & Associates  
               Co-Moderator: John Anderson, St. Mary's, University of Minnesota  
               **Track C**  
               Groundwater: Minnesota’s Unseen Water Source  
               Moderator: Stev Thornley, Minnesota Department of Health  
               Co-Moderator: Andrea Handrickson, Minnesota Department of Transportation  |
| 1:15−1:35  | Creating a Native Prairie Landscape within a Concrete Jungle  
               Abbie Bowen, Justin Klabo, AE2S, Inc                                                   |
| 1:35−1:55  | Green Infrastructure Project Over Time: Lessons Learned  
               Rocky Keehn, Common Sense Water Resources Engineering, LLC                             |
| 1:55−2:15  | Grand Rapids Stormwater Wetland  
               Shawn Tracy, HR Green                                                                     |
| 2:15−2:35  | Linking the Science with Local Land Management Decisions Using ACPF  
               Jessica Nelson, Kimberly Musser, Water Resources Center, Minnesota State University Mankato |
| 1:55−2:15  | Metro River Water Quality: Recent Conditions and Spatial Changes  
               Erik Herberg, Hong Wang, Kent Johnson, Jack Barland, Judy Svventek, Metropolitan Council |
| 2:15−2:35  | Linking Watershed-Scale Hydrologic Response to Farm-Level Changes in Water Management  
               Brent Dalzell, Lu Zhang, Joe Magner, Jeff Strock, University of Minnesota               |
| 1:15−2:45  | Evaluating the Net Present Value of LID Retrofits in Edmonton  
               Brett Emmons, Olivia Sparrow; Emmons & Olivier Resources, Inc.; Eric Bill, Impact Infrastructure |
| 1:15−2:45  | Evaluating the Source of Water to Wells Completed in Confined Glacial Aquifers  
               Jared Tost, Daniel Feinsteins, US Geological Survey; William Simpkins, Iowa State University; Alyssa Witt, Golder Associates; James Stark, Legislative Water Commission |
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**Additional sessions:**
- **Stormwater Wetland:** Shawn Tracy, HR Green
- **Linking the Science with Local Land Management Decisions Using ACPF:** Jessica Nelson, Kimberly Musser, Water Resources Center, Minnesota State University Mankato
- **Dakota County Ambient Groundwater Quality Study Major Findings:** Vanessa Demuth, Stephen Scott, Jill V. Treccott, Dakota County Environmental Resources
- **Minnesota Groundwater Tracing Database (MGTD):** Wes Rutelonis, John Barry, Jeffrey Green, Holly Johnson, Ruth MacDonald, Bart Richardson, Calvin Alexander, Minnesota Department of Natural Resources
- **Great Lakes New Dynamic Coastal Wetland and Habitat Inventory Map:** Brian Huberty, US Fish and Wildlife Service; Joe Knight, Keith Pelletier, Trevor Host, Remote Sensing and Geospatial Analysis Laboratory, University of Minnesota; Paul Morin, Polar Geospatial Center, University of Minnesota; Jennifer Corcoran, Minnesota Department of Natural Resources; Jim Klassen, SharedGeo.org; Laura Chavez, Colin Brooke, Mike Battaglia, Michigan Tech Research Institute; Brian Brisco, Natural Resources Canada
<table>
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<tr>
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<td>2:45–3:15</td>
<td>Poster and Vendor Refreshment Break</td>
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<tr>
<td>3:15–4:45</td>
<td>Stormwater Management and Green Infrastructure</td>
<td>Form-ing Fluvial Linkages</td>
<td>Agriculture and Groundwater</td>
<td>Facets of Groundwater</td>
<td>Understanding Wetland Processes</td>
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<td></td>
<td>Moderator: Bill Douglass, Bolton &amp; Menk, Inc.</td>
<td>Moderator: Salam Murtaza, Minnesota Department of Natural Resources</td>
<td>Moderator: Jeff Berg, Minnesota Department of Agriculture</td>
<td>Moderator: Marcey Westrick, Board of Water and Soil Resources</td>
<td>Moderator: Beth Brown, Co-Moderator: Kristine Maurer</td>
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<td>Co-Moderator: Dendy Lofton, LimnoTech</td>
<td>Co-Moderator: Andrea Hendrickson, Minnesota Department of Transportation</td>
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<td>Co-Moderator: Joel Larson, Water Resources Center, University of Minnesota</td>
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<td>Ron Leaf, Beth Kunkel, Kimley-Horn &amp; Associates, Inc.</td>
<td>Wade Johnson, Gina Quiram, Minnesota Department of Natural Resources</td>
<td>Steve Gaffield, Nick Hayden, Rob Montgomery, Montgomery Associates: Resource Solutions, LLC; Dan Mahoney, Village of Plover, WI</td>
<td>Jeff Paddock, Brennon Schaefer, Minnesota Department of Agriculture</td>
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<td>Kyle Johnson, Derek Arens, Lanol Leichty, Bolton &amp; Menk</td>
<td>Olivia Sparrow, University of Minnesota and Emmnons &amp; Olivier Resources, Inc.; William Herb, St. Anthony Falls Laboratory, Bruce Wilson, John Gulliver, University of Minnesota</td>
<td>Hilary Pierce, Joe Magner, University of Minnesota</td>
<td>Sarah Fellows, Amit Pradhananga, Mae Davenport, University of Minnesota</td>
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<td>Stephanie Hatten, Jake Newhall, WSB &amp; Associates; Pete Young, City of Prior Lake; Maggie Karshnia, Prior-Lake Spring Lake Watershed District</td>
<td>Will Wilhelm, Kimley-Horn</td>
<td>Brian Bohman, Freshwater Society and University of Minnesota</td>
<td>Anna Arkin, Tannie Eshenaur, Katie Nyquist, Minnesota Department of Health</td>
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<td>Kyle Axtell, Rice Creek Watershed District; Dennis McAlpine, Houston Engineering, Inc.</td>
<td>Neil Haugerud, Kevin Zytkovicz, Minnesota Department of Natural Resources</td>
<td>Jacob Jurgens, Dan Wyse, David Muilla, University of Minnesota; Lee DeHaan, The Land Institute; Craig Sheaffer, University of Minnesota</td>
<td>Brendalynn Hoppe, Emmy Waldhart, Minnesota Department of Health</td>
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<td>4:35–4:45</td>
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<tr>
<td>4:45–5:45</td>
<td>Reception, Vendor, and Poster Session</td>
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Program Schedule – Wednesday, October 17, 2018

8:00–8:10 a.m. Welcome, Tina Carstens, Ramsey-Washington Metro Watershed District

8:10–9:30 a.m. Achieving Clean Water Through Relationship Building: A Social Scientist’s Water Restoration and Protection Strategy

Amit Pradhananga, University of Minnesota

9:30–10:00 a.m. Poster and Vendor Refreshment Break

Concurrent Sessions

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| 10:00–10:20 Proliferating Blue-Green Algae in Minnesota Lakes<br>Shahram Missaghi, University of Minnesota Extension; Richard Kiesling, United State Geological Survey; Adam Heathcote, Science Museum of Minnesota | 2-Phase Modular Bioreactor Under Spring High Flow and Cold Conditions<br>Andry Ranaivoson, Jeffrey Strock, University of Minnesota; Gary Feyereisen, Kurt Spokas, ARS-USDA; David Mulla, University of Minnesota | EnviroDIY Open-Source Technologies for Cost-Effective Water Quality Monitoring and Automated Sampling<br>Anthony Aufdenkampe, LimnoTech; Beth Fisher, University of Minnesota; Craig Taylor, LimnoTech; Bobby Schulz, University of Minnesota; Sara Damiano, Stroud Water Research Center | Cedar River Watershed—Multiple Scales for Cooperative Management<br>Bill Thompson, State of Minnesota, Minnesota Pollution Control Agency |

| 10:20–10:40 Predicting Harmful Algal Blooms in Minnesota Lakes with a Three-Dimensional Coupled Hydrodynamic-Ecological Numerical Model<br>Jackie Taylor, University of Minnesota; Shahram Missaghi, St. Anthony Falls Laboratory; Vaughan Vollert, Milko Hondzo, University of Minnesota | Can Woodchip Bioreactors Meet WQ Goals by Denitrifier Enhancement or Carbon Dosing?<br>Gary Feyereisen, USDA-ARS; Satoshi Ishii, Ping Wang, Emily Anderson, Jeonghwan Jang, University of Minnesota; Ehsan Ghane, Michigan State University; Scott Schumacher, Ed Dorsey, Carl Rosen, Michael Sadowsky, University of Minnesota | Monitoring Program Evolution: Improving Efficiency, Accuracy, and Consistency<br>Joe Sellner, Britta Belden, Capitol Region Watershed District | Creating Watershed Plans that Build Capacity in the Long Term<br>Melissa Bokman, Scott County |

| 10:40–11:00 Building a Carp Management Program in the Rice Creek Watershed<br>Matt Kociak, Rice Creek Watershed District; Przemyslaw Bajer, University of Minnesota |Removing Nitrogen, Phosphorus, and Sediment From Runoff Using Low Cost Taconite Tailings and Wood Chip Bio-Reactors<br>Mike Nielsen, Jeff Cheng, Pete Willenbring, WSB and Associates; Bruce Miller, McGregor Mayor | Pesticide Monitoring in Minnesota Lakes<br>Matt Ribakowski, David Tollefson, Bill VanRyswyk, Minnesota Department of Agriculture | No Smoking Gun? The Challenge of Prioritization in a Protection Watershed<br>Julie Blackburn, RESPEC; Shawn Tracy, HR Green |

<p>| 11:00–11:20 A Watershed’s Role in AIS: From Committee Concepts to Rapid Response&lt;br&gt;Lauren Jester, Bassett Creek Watershed Management Commission; Margaret Rattei, Karen Chandler, Barr Engineering Company | Sulfide Capture by Iron-Bearing Mining Byproducts in Northern Minnesota&lt;br&gt;Jeanette Voelz, University of Minnesota; Jacob Daire, University of Minnesota Duluth; William Arnold, University of Minnesota; Nathan Johnson, Chan Lan Chun, University of Minnesota Duluth; Lee Penn, University of Minnesota | Advancing Satellite-Based Remote Sensing Methods for Lake Water Quality and Ice Phenology&lt;br&gt;Benjamin Page, University of Minnesota Water Resources Center; Leif Olmanson, Remote Sensing and Geospatial Analysis Laboratory | Interactive Water Resources Programs for Planetariums in Minnesota&lt;br&gt;Sally Brummel, Bell Museum, Delia Kundin, University of Minnesota |</p>
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<th>Time</th>
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<td>11:20−11:30</td>
<td>Open Discussion</td>
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<td>11:30−12:15</td>
<td>Lunch</td>
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<td>12:15−1:00</td>
<td>Traditional Ecological Knowledge</td>
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<td>Rosalyn LaPier (Blackfoot/MEHS), University of Montana</td>
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<td>1:15−1:25</td>
<td>TMDL Innovations</td>
<td>Innovations in Engineering</td>
<td>Modeling in Multiple Dimensions</td>
<td>Social Assessment and Community Engagement</td>
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<td>Moderator: Randy Neprash, Minnesota Cities</td>
<td>Moderator: Stew Thornley, Minnesota Department of Health</td>
<td>Moderator: Bill Douglass, Bolton &amp; Menk, Inc.</td>
<td>Moderator: Amit Pradhananga, University of Minnesota</td>
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<td>1:15−1:35</td>
<td>Connecting Fisheries to Water Quality: A Biological Aspect to TMDLs?</td>
<td>Overview of Improved Countermeasures in Minnesota</td>
<td>1D/2D Urban Flood Modeling with XP-SWMM and PCSWMM</td>
<td>Cities + Citizens/Water Management = Strategies for Working Together</td>
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<td>Tom Langer, Jeff Strom, Wenck Associates</td>
<td>Solomon Woldeamlak, Aislyn Ryan, Minnesota Department of Transportation</td>
<td>Heather Hlavaty, Kim Baker, Barr Engineering; Paul Hudalla, City of Minneapolis</td>
<td>Leslie Yetka, Freshwater Society</td>
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<td>1:35−1:55</td>
<td>Restoring Streambank Stability to Achieve MS4 Water Quality Objectives—An Overview of Chesapeake Bay TMDL Experiences &amp; Applications in Minnesota</td>
<td>West River Parkway Slope Failure and Repair</td>
<td>Computational Fluid Dynamics (CFD) as a Tool to Predict Storm Water Geyser: The Como Tunnel Case</td>
<td>A Resident Survey of Minnesota Water Values</td>
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<td>Josh Running, Stantec Consulting, Inc.</td>
<td>Jim Herbert, Michael Haggerty, Barr Engineering Company; Cliff Swenson, Minneapolis Parks and Rec Board</td>
<td>Christian Frias, Brandon Barnes, Omid Mohseni, Barr Engineering Company</td>
<td>Amelia Kreiter, Jaren Peplinski, Mae Davenport, Bonnie Keeler, University of Minnesota</td>
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<td>Julie Blackburn, RESPEC, Cary Hernandez, Minnesota Pollution Control Agency, Mike Hirst, Lake of the Woods SWCD; Jesse Anderson, Minnesota Pollution Control Agency; Geoff Kramer, RESPEC</td>
<td>Michelle Larson, US Army Corps of Engineers</td>
<td>Roberta Conquist, Jordan Thole, Bolton &amp; Menk, Inc.</td>
<td>Gael Zembal, Nine Mile Creek Watershed District/ Education and Outreach Coordinator; Erica Sniagowski, Nine Mile Creek Watershed District/ Project and Program Manager; Steve Gurney, City of Bloomington/Water Resources Specialist</td>
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<td>2:15−2:35</td>
<td>Benefit Metrics for Water Quality Regulation in Minnesota</td>
<td>Urban Drainage Pollution Loading Modeling and Results</td>
<td>Modeling Mississippi River Dredging Strategies after the Lock Closure at Upper St. Anthony Falls</td>
<td>Engaging with Communities to Develop Priorities for Cooperative Watershed Management: The Duluth Urban Watershed Advisory Committee</td>
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<td>Baishali Bakshi, Minnesota Pollution Control Agency</td>
<td>Lisa Vollbrecht, City of St. Cloud; April Ryan, Short Elliott Hendrickson, Inc.</td>
<td>Alex Nelson, US Army Corps of Engineers</td>
<td>Jesse Schomberg, University of Minnesota Sea Grant; Tiffany Sprague, Rich Axler, Natural Resources Research Institute; Brian Fredrickson, Minnesota Pollution Control Agency</td>
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<td>2:35−2:45</td>
<td>Open Discussion</td>
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## Program Schedule – Wednesday, October 17, 2018 (continued)

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<tr>
<th>Time</th>
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<tr>
<td>2:45−3:15</td>
<td><strong>Poster and Vendor Refreshment Break</strong></td>
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<td>3:15−3:35</td>
<td><strong>Quality in Bald Eagle Lake, MN</strong>&lt;br&gt;Joe Bischoff, Wenck Associates, Inc.; William James, University of Wisconsin-Stout; Brian Beck, Wenck Associates, Inc.; Matt Kocian, Rice Creek Watershed District</td>
<td><strong>Improving Water Quality, Flood Storage, and Habitat Diversity in New Brighton’s Hansen Park</strong>&lt;br&gt;Kyle Axtell, Rice Creek Watershed District; Dennis McAlpine, Houston Engineering, Inc.</td>
<td><strong>Localized Flood Map Tool for Climate Vulnerability Screening</strong>&lt;br&gt;Emily Resseger; Eric Wojchik, Metropolitan Council</td>
<td><strong>White Bear Lake Court Case</strong>&lt;br&gt;Dan Miller, Minnesota Department of Natural Resources</td>
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<tr>
<td>3:35−4:15</td>
<td><strong>Spatial Distribution and Interrelationships Among Optical Water Quality Properties (Chlorophyll A, Suspended Solids, CDOM, and Secchi Depth) in Minnesota Lakes</strong>&lt;br&gt;Jacques Finlay, Patrick Brezonik, Leif Olmanson, Claire Griffin, Marvin Bauer, Raymond Hoazlksi, William Arnold, University of Minnesota</td>
<td><strong>Alternate Side Inlet Calculator: A Conservation Tool for Sizing Side Inlets on agricultural Drainage Systems for Temporary Storage and Sediment Removal</strong>&lt;br&gt;Bailey Griffin, Chuck Brandel, Mark Origer, ISG</td>
<td><strong>Utilizing Forecast Technology for Flood Prevention in the Time of Climate Change</strong>&lt;br&gt;Tiffany Schauffler, Minnehaha Creek Watershed District; Scott Stockhaus, National Weather Service</td>
<td><strong>Advancing Safe and Sustainable Water Reuse in Minnesota</strong>&lt;br&gt;Anita Anderson, Minnesota Department of Health; Suzanne Rhees, Board of Water and Soil Resources</td>
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<td>3:55−4:15</td>
<td><strong>Water Quality and Aquatic Ecosystem Responses to Changes in Water-Level Management for International Border Lakes</strong>&lt;br&gt;Jeffrey Ziegweid, Victoria Christensen, United States Geological Survey, Ryan Maki, National Park Service</td>
<td><strong>In-Stream Nitrate Dynamics in the Cottonwood River Watershed, Minnesota</strong>&lt;br&gt;Katherine McLellan, Joe Magner, Diana Karwan, Gene-Hua Crystal Ng, John Nieber, University of Minnesota</td>
<td><strong>Streamlined Analysis Demonstrates Stormwater Detention Benefits to Obtain HMGP Funding</strong>&lt;br&gt;Justin Klabo, Jeff Hruby, Zach Magdol, AE2S, Inc.</td>
<td><strong>Future State of Water in the Land of 10,000 Lakes</strong>&lt;br&gt;James Stark, Legislative Water Commission</td>
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<td>4:15−4:35</td>
<td><strong>Landscape Controls on Colored Dissolved Organic Matter Distribution in 10,000 Minnesota Lakes</strong>&lt;br&gt;Claire Griffin, Jacques Finlay, Patrick Brezonik, Leif Olmanson, Marvin Bauer, Ray Hoazlksi, University of Minnesota</td>
<td><strong>Innovative HSPF Modeling Frameworks for Simulating Hydrologically Important Features in Minnesota Watersheds</strong>&lt;br&gt;Michelle Schmidt, Jonathan Butcher, Jennifer Olson, Saumya Sarkar, Tetra Tech</td>
<td><strong>A New Look at a Timeworn Problem: Southwest Harriet Feasibility Study</strong>&lt;br&gt;Lisa Goddard, City of Minneapolis; Bridget Osborn, HR Green, Inc.</td>
<td><strong>National MS4 Stormwater Permitting Program Assessments</strong>&lt;br&gt;Randy Neprash, Minnesota Cities Stormwater Coalition, Stantec, National Municipal Stormwater Alliance</td>
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<td>4:35−4:45</td>
<td><strong>Open Discussion</strong></td>
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The following posters will be displayed during the breaks each day. The poster session with poster presenters will be held on Tuesday evening, during the reception. Please note, the posters listed below were submitted and accepted as poster presentations. The full list of poster presentations will be available in the final program.

**Bathymetry Mapping for Edina Lake and Ponds**  
Jessica Wilson, City of Edina; Rachel Pierstorff, City of Edina Engineering Intern

**Characterization of Antibiotic Resistant Genes in Cities’ Sewer System in Western Lake Superior**  
Adelle Schumann, Sara Constantine, Adrian Hanson, Chan Lan Chun, University of Minnesota Duluth

**Drivers of Stable, Turbid, Phytoplankton-Dominated State in Lake Winnebago, Wisconsin**  
Andrea Pleven, Jennifer Olson, Tetra Tech, Inc.; Brian Austin, Wisconsin Department of Natural Resources

**Ecosystem Services of Earth’s Largest Lakes**  
Kirsten Rhude, University of Minnesota Duluth Large Lakes Observatory; Bonnie Keeler, Stephen Polasky, University of Minnesota; Rajendra Poudel, National Oceanic and Atmospheric Association; Robert Stener, Large Lakes Observatory, University of Minnesota Duluth

**Impact of Colored Dissolved Organic Matter (CDOM) On Water Treatment**  
Yiling Chen, Raymond Hazalski, William Arnold, Leif Olmanson, Claire Griffin, University of Minnesota

**Iron Has Minor Influence on Dissolved Color in Lakes of the Upper Great Lakes States**  
Patrick Brezkonik, Jacques Finlay, Claire Griffin, University of Minnesota

**Linking Soil Health to Water Quality in the Cedar River Watershed**  
Stella Pey, University of Minnesota; Holly Dolliver, University of Wisconsin-River Falls; Steve Lawler, Cedar River Watershed District/Mower SWCD; Joe Magner, University of Minnesota

**Managing Nitrogen From Manure with a Winter Rye Cover Crop: Results of On-Farm Trials in Minnesota**  
Leslie Everett, University of Minnesota Water Resources Center; Randy Pepin, University of Minnesota Extension; Melissa Wilson, Jeffrey Coulter, University of Minnesota

**Pipestone National Monument Water-Quality Assessment**  
Aliessa Krall, Victoria Glenn Christensen, United States Geological Survey

**Predicting Nutrient and Sediment Reductions in Minnesota Watersheds Using HSPF-SAM**  
Dave Wall, Minnesota Pollution Control Agency; Seth Kenner, RESPEC

**Quantifying Total Water Storage in the Minnesota River Combining Remote Sensing and Land Use Models**  
Francisco Lahoud, John Nieder, University of Minnesota

**Sediment Nutrients and Microbial Communities Associated with Wild Rice and Competing Plants in Minnesota**  
Tyler Untiedt, Adelle Schumann, Carol Rescheke, George Host, Randall Hicks, Chan Lan Chun, Natural Resources Research Institute, University of Minnesota Duluth

**Social Science and Water Resources Relationship Mapping for Informed Planning and Management in Minnesota**  
Jennifer Moeller, Center for Changing Landscapes

**Storm Water Bio-Filtration for Duluth Industrial Site**  
Kristofer Isaacson, Steve Sterngberg, Chan Lan Chun, University of Minnesota Duluth

**Sulfide Capture Capacity of Iron Mining Process Byproducts**  
Jacob Daire, University of Minnesota Duluth; Jeannette Voelz, R. Lee Penn, University of Minnesota; Nathan Johnson, Chan Lan Chun, University of Minnesota Duluth

**The Kinetics of Abiotic Reduction of RDX and HMX by Synthetic and Natural Iron-Bearing Minerals**  
Yiran Tong, Jennifer Strehlau, Matthew Berens, William Arnold, University of Minnesota

**Which Iron Minerals and Chemical Conditions are Optimal for Iron Enhanced Sand Filter Effectiveness and Longevity?**  
Beth Fisher, Joshua Feinberg, John Gulliver, University of Minnesota
# Registration Form

**Minnesota Water Resources Conference**  
October 16−17, 2018

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Business phone number

- ☐ I require vegetarian lunches
- ☐ I require vegan lunches
- ☐ I require gluten-free lunches

- ☐ I plan to attend the Wetlands Special Session (Oct. 16)

**Registration Fees:**

Early registration (postmarked before September 21)
- ☐ Two-day - $250
- ☐ One-day - $175

Please choose which day (required)
- ☐ Tuesday
- ☐ Wednesday
- ☐ Student - $85

Regular registration (postmarked starting September 21)
- ☐ Two-day - $300
- ☐ One-day - $225

Please choose which day (required)
- ☐ Tuesday
- ☐ Wednesday
- ☐ Student - $85

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**Register online at:**
ccaps.umn.edu/water

**Mail:**
University of Minnesota  
353 Ruttan Hall  
1994 Buford Avenue  
Saint Paul, MN 55108

**Fax:** 612-624-5359

If your check is returned because of insufficient funds or closed account, or because you have made a stop payment request, you will be charged a check handling fee of $20.  
The information on this form is private data, used to identify and locate you, obtain payment, and enable instructors to better know their audience. Name, address, and payment method are mandatory. Information on this form may be shared with instructors and program cosponsors.