

2014 Water Center Grants Annual Meeting

12pm Tuesday, June 24 – 3pm Wednesday June 25, 2014

Dahlmann Campus Inn

615 E Huron St

Ann Arbor, MI 48104

Day 1: Tuesday, June 24

| Time | Item | Lead | Location |
|---------------|--|--|---------------------|
| 12:00pm | Lunch (provided) | | |
| 12:30 | Convene, Welcome, Introductions | Jennifer Read, University of Michigan Water Center | Dahlmann Campus Inn |
| 12:40 | Water Center Program Evaluation | Maria Lemos, University of Michigan | |
| 1:00 | Restoring the health of the Green Bay ecosystem under a changing climate | J. Val Klump, University of Wisconsin-Milwaukee | |
| 1:30 | Watershed-scale assessment of stacked drainage practices in the western Lake Erie Basin to improve water quality | Sheila Christopher, Notre Dame | |
| 2:00 | Saginaw Bay optimization decision tool | David Karpovich, Saginaw Valley State University | |
| 2:30 | Urban pollution footprints on the Great Lakes | Hector Bravo, University of Wisconsin-Milwaukee | |
| 3:00 | Break | | |
| 3:15 | Restoring native fish migrations | Peter McIntyre, University of Wisconsin-Madison | Dahlmann Campus Inn |
| 3:45 | Comprehensive stressor-response model to inform ecosystem restorations across the Great Lakes | Lucinda Johnson, University of Minnesota-Duluth | |
| 4:15 | Great Lakes Environmental Assessment and Mapping Project (GLEAM): Phase II | J. David Allan, University of Michigan | |
| 4:45 | Assessing information needs and developing tools for Great Lakes ecosystem management | Catherine Riseng, University of Michigan | |
| 5:15 – 7:15pm | Poster Session* and Reception (light refreshments) | | |

*See attached list of poster presentations

2014 Water Center Grants Annual Meeting

Day 2: Wednesday, June 25

| Time | Item | Lead | Location |
|----------------|---|---|--------------------------------|
| 8:00am | <i>Light refreshments</i> | | |
| 8:30 | Environmental and socioeconomic factors associated with public-private partnership wetland restoration projects | Tom Langen, Clarkson University | Dahlmann Campus Inn |
| 9:00 | A baseline and standardized method for monitoring the treatment and control of invasive <i>Phragmites</i> | Laura Bourgeau-Chavez, Michigan Tech Research Institute | |
| 9:30 | Restoring, retrofitting and recoupling Michigan's Great Lakes shorelands | Richard Norton, University of Michigan | |
| 10:00 | <i>Break</i> | | |
| 10:15 | Towards establishing a long-term multidisciplinary research platform to assess the impact of microplastics on Great Lakes ecosystem health | Melissa Duhaime, University of Michigan | Dahlmann Campus Inn |
| 10:45 | Building capacity for freshwater science: Integrating microbial genomics, environmental chemistry, and ecosystem processes to understand harmful algal blooms | Greg Dick, University of Michigan | |
| 11:15 | Improving water quality and well-being in Great Lakes post-industrial cities: A multidisciplinary partnership to assess Detroit's green infrastructure | Joan Nassauer, University of Michigan | |
| 11:45 | Wrap Up | Jennifer Read, University of Michigan Water Center | |
| 12:00pm | <i>Lunch (provided)</i> <i>All attendees <u>except</u> Advisory Board Members and Tier II Project teams will be dismissed after lunch.</i> | | |
| 12:40 | Advisory Board Meeting <i>and</i> Workshop for Tier II Project Teams | | Campus Inn Water Center |
| 3:00 | Conclude | | |

June 2014 Water Center Grants Poster Session

Tuesday, June 24, 5:15-7:15pm

Dahlmann Campus Inn

Lake spray aerosol emissions of toxins and pollutants to the atmosphere in the Great Lakes Region

Andrew Ault, University of Michigan, School of Public Health – Environmental Health Sciences

Kerri Pratt, University of Michigan, Department of Chemistry

Goal: Establish the capability at U-M to study freshwater lake spray particles to inform future studies exploring potential human health impacts.

Development of indicators to track the remediation of harmful algal blooms in Sodus Bay, Lake Ontario

Gregory Boyer, State University of New York-Syracuse, College of Env. Science and Forestry

Goal: Field-test a suite of indicators that can be used throughout the Great Lakes basin to track progress in the remediation of harmful algae blooms.

Advancing student learning in freshwater science: curriculum development and research experiences for undergraduates in aquatic geochemistry

Rose Cory, University of Michigan, Department of Earth and Environmental Sciences

Goal: Enhance learning and research experiences for undergraduates studying aquatic geochemistry.

Stream Restoration for Graduates: Enhancing multidisciplinary learning through course augmentation and in-stream experiential activities

Aline Cotel, University of Michigan, Department of Civil and Environmental Engineering

Catherine Riseng, University of Michigan, School of Natural Resources and Environment

Goal: Improve a graduate-level stream restoration course in order to attract students from diverse departments and increase hands-on learning.

Application of geospatially enabled geographic response plans for oil spill response in the western basin of Lake Erie

David Dean, Colin Brooks, and Arthur Endsley, Michigan Tech Research Institute

Goal: Allow the analysis, display and distribution of geospatial data in a manner that meets the needs of planners, responders and incident managers in the event of oil or chemical spills.

Environmental DNA-based quantification of dreissenid mussels and their impacts on freshwater bacterioplankton

Vincent Denef, University of Michigan, Department of Ecology and Evolutionary Biology

Thomas Johengen, Univ. of Michigan, Cooperative Inst. for Limnology and Ecosystems Research

Goal: Establish an assay using environmental DNA to assess zebra mussel abundance and its impacts on microbial communities in inland lakes.

Coupling mercury, lead and strontium isotopes in archived Great Lakes precipitation samples to improve pollutant source apportionment with new and novel techniques

J. Timothy Dvonch, University of Michigan, School of Public Health

Laura Sherman, Joel Blum, University of Michigan, Department of Earth and Env. Sciences

Goal: Measure mercury, lead and strontium isotopes in previously collected rainfall samples to develop a new method to “fingerprint” emissions of these metals and link sources with atmospheric deposition sites across the Great Lakes region.

Assessing ecosystem services provided by restored wetlands under current and future climate and land-use scenarios

Kenneth Elgersma, University of Northern Iowa, Department of Biology

William Currie, University of Michigan, School of Natural Resources and Environment

Deborah Goldberg, University of Michigan, Department of Ecology and Evolutionary Biology

Goal: Augment an existing computer model to assess the effectiveness of techniques, including herbicide application, burning and mowing, to control non-native weedy plant invasions.

Assessing the Assessment Tool: Developing improved modeling frameworks for evaluating hydraulic fracturing water withdrawals in Michigan

Brian Ellis and Avery Demond, University of Michigan, Department of Civil and Environmental Engineering

Goal: Assess the adequacy of an online screening tool to evaluate the impacts of hydraulic fracturing-related water withdrawals on surface water and residential water supply wells.

Performance data collection for GLRI SWIF project assessment in Lucas County, Ohio

Cyndee Gruden, University of Toledo, Department of Civil Engineering

Keri Gerwin, Toledo Metropolitan Council of Governments

Goal: Performance monitoring of innovative storm-water management demonstration projects including rain gardens, wetlands, permeable pavement and biofiltration.

Identifying the environmental controls of algal pathogen epidemics and their influence on harmful algal blooms in Lake Erie

Timothy James, John Marino, University of Michigan, Department of Ecology and Evolutionary Biology

Gary Fahnenstiel, University of Michigan, Water Center

Goal: Better understand the role of algal pathogens in regulating harmful algal blooms in Lake Erie.

Assessing the bioavailability of HOCs during habitat restoration

Nathan Johnson, University of Minnesota-Duluth, Department of Civil Engineering

Amanda Brennan, University of Minnesota-Duluth, Water Resources Science Graduate Program

Goal: Evaluate the bioavailability of sediment-associated contaminants before and after restoration efforts using dredged materials from the Duluth-Superior Harbor.

Stuck in the Muck: Comparing how experts and local communities see beach muck in the Great Lakes

Rachel Kaplan, Avik Basu, University of Michigan, School of Natural Resources and Environment,
Jason Duvall, University of Michigan, Program in the Environment

Donna Kashian, Wayne State University, Biological Sciences

Goal: Improve efforts to resolve beach "muck" (shore deposits of benthic algae) issues in Saginaw Bay by investigating public and expert perceptions of the problem.

A new sensor platform for the measurement of evaporation across the Great Lakes

Branko Kerkez, University of Michigan, Civil and Environmental Engineering

Andrew Gronewald, University of Michigan, Civil and Environmental Engineering, NOAA GLERL

Goal: Improve measurements of overlake evaporation through the development of a new sensor platform.

Extended and novel monitoring of climate, nutrients and ecosystem dynamics in the Green Bay ecosystem, 2013

J. Val Klump, University of Wisconsin-Milwaukee, School of Freshwater Sciences, Great Lakes WATER Institute

Michael Zorn, University of Wisconsin-Green Bay, Natural and Applied Science, Chemistry

Goal: Provide an additional season of physical and chemical data that will lead to improved ecosystem modeling to assess the efficacy of best management practices designed to address beneficial use impairments under a suite of changing climate scenarios.

Monitoring stream ecosystem function responses to stamp sand stabilization in tributaries of Lake Superior

Amy Marcarelli and Casy Huckins, Michigan Technological University, Department of Biological Sciences

Gina Nichols, Houghton Keweenaw Conservation District

Rob Aho, USDA-NRCS

Goal: Monitor stream ecosystem functions at a project to stabilize and revegetate floodplain habitat buried by copper-rich stamp sands.

Birds as indicators of contaminant exposure in the Great Lakes: chromosomal damage assessment via flow cytometry

Cole Matson, Baylor University, Department of Environmental Science

Thomas Custer and Christine Custer, USGS Upper Midwest Environmental Sciences Center

Goal: Assess chromosomal damage in tree swallow nestlings collected from contaminated areas across the Great Lakes region.

Exploring empirical evidence for climate justice in the Huron River Watershed

Paul Mohai and Chingwen Cheng, University of Michigan, School of Natural Resources and Environment

Margaret Kalcic, University of Michigan, Water Center

Goal: Conduct an empirical study of climate justice for the Huron River watershed including developing an index that reflects socioeconomic impacts of climate change.

A Bayesian hierarchical modeling approach for comparing water quality measurements from different sources

Song Qian and Tom Bridgeman, University of Toledo, Department of Environmental Sciences

Goal: Develop models linking Lake Erie water-quality data collected by different institutions using different sampling methods.

Monitoring fish community responses to restoration activities in the Rouge River watershed

Emily Saarinen and Jacob Napieralski, University of Michigan-Dearborn, Department of Natural Sciences

Sally Petrella, Friends of the Rouge

Goal: Characterize the fish community composition in southeast Michigan's highly urbanized Rouge River watershed to understand how it is impacted by watershed-level restoration efforts.

Water quality benefit assessment of Lake Erie coastal wetlands

Justin Saarinen, University of Michigan-Dearborn, Department of Natural Sciences

Kurt Kowalski, USGS Great Lakes Science Center

Rachael Franks Taylor, The Nature Conservancy

Goal: Identify alternative restoration scenarios for western Lake Erie by assessing whether coastal and diked wetlands provide a significant water-quality benefit to the lake.

The impacts of agriculture on freshwater ecosystems: Will strengthening local food systems help or hurt?

Ethan Schoolman and Tom Princen, University of Michigan, School of Natural Resources and Environment

Margaret Kalcic, University of Michigan, Water Center

Goal: Investigate the environmental consequences of efforts to strengthen local food systems.

High Resolution Orbitrap Mass Spectrometry for Expanding U-M Freshwater Research

Krista Rule Wigginton, Nancy Love, Terese Olson, University of Michigan, Civil and Environmental Engineering

Allen Burton, University of Michigan, School of Natural Resources and Environment, Cooperative Inst. for Limnology and Ecosystems Research, Water Center

Goal: Improve the ability to detect, quantify and classify previously unidentified organic contaminants present in freshwater systems through the purchase of an orbitrap mass spectrometer.