University of Michigan Freshwater Research Symposium
December 11, 2014, 9:30 AM – 5:00 PM
Rackham Building

9:30 AM	*Light refreshments, Assembly Hall*			
10:00	Convene: Welcome and Overview	Don Scavia Director, Graham Sustainability Institute		
		Jennifer Read Director, University of Michigan Water Center		
10:30	*Leveraging Grant Presentations – Concurrent Sessions, East and West Conference Rooms*			
	East Conference Room		**West Conference Room**	
10:40	Environmental DNA-based quantification of dreissenid mussels and their impacts on freshwater bacterioplankton	Vincent Denef, Ecology and Evolutionary Biology	Advancing student learning in freshwater science: curriculum development and research experiences for undergraduates in aquatic geochemistry	Rose Cory, Earth and Environmental Sciences
11:00	Identifying the environmental controls of algal pathogen epidemics and their influence on harmful algal blooms in Lake Erie	Timothy James, Ecology and Evolutionary Biology	Stream Restoration for Graduates: Enhancing multidisciplinary learning through course augmentation and in-stream experiential activities	Aline Cotel, Civil and Environmental Engineering
11:20	Lake spray aerosol emissions of toxins and pollutants to the atmosphere in the Great Lakes Region	Andrew Ault, School of Public Health – Environmental Health Sciences	High Resolution Orbitrap Mass Spectrometry for Expanding U-M Freshwater Research	Krista Rule Wigginton, Civil and Environmental Engineering
11:40	*Networking Lunch, Assembly Hall*			
1:00 PM	A new sensor platform for the measurement of evaporation across the Great Lakes	Branko Kerkez, Civil and Environmental Engineering	Stuck in the Muck: Comparing how experts and local communities see beach muck in the Great Lakes	Avik Basu, School of Natural Resources and Environment
1:20	Assessing the Assessment Tool: Developing improved modeling frameworks for evaluating hydraulic fracturing water withdrawals in Michigan	Brian Ellis, Civil and Environmental Engineering	The impacts of agriculture on freshwater ecosystems: Will strengthening local food systems help or hurt?	Ethan Schoolman, School of Natural Resources and Environment
1:40	Discussion across projects		Exploring empirical evidence for climate justice in the Huron River Watershed	Paul Mohai, School of Natural Resources and Environment
2:00	*Break*			

	Large Grant Presentations, Assembly Hall	
2:15	Towards establishing a long-term multidisciplinary research platform to assess the impact of microplastics on Great Lakes ecosystem health	Melissa Duhaime, Ecology and Evolutionary Biology
2:45	Building capacity for freshwater science: Integrating microbial genomics, environmental chemistry, and ecosystem processes to understand harmful algal blooms	Greg Dick, Ecology and Evolutionary Biology, Earth and Environmental Sciences
3:15	Assessing Information Needs and Developing Tools for Great Lakes Ecosystem Management	Catherine Riseng, School of Natural Resources and Environment
3:45	Improving water quality and well-being in Great Lakes post-industrial cities: A multidisciplinary partnership to assess Detroit's green infrastructure	Joan Nassauer, School of Natural Resources and Environment
4:15	Panel discussion: Enhancing the programs underway	Panelists
4:45	Closing remarks	Jennifer Read
5:00 PM	**Networking Reception, Assembly Hall**	

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U-M Freshwater Grants
(Listed alphabetically by PI)

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

Advancing student learning in freshwater science: curriculum development and research experiences for undergraduates in aquatic geochemistry
> Rose Cory, University of Michigan, 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

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, University of Michigan, Cooperative Institute 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

Building capacity for freshwater science: Integrating microbial genomics, environmental chemistry, and ecosystem processes to understand harmful algal blooms
> Gregory Dick, University of Michigan, Department of Earth and Environmental Sciences and Biology, Department of Ecology and Evolutionary Biology
> Thomas Johengen, University of Michigan, Cooperative Institute for Limnology and Ecosystems Research
> Vincent Denef, University of Michigan, Department of Ecology and Evolutionary Biology
> Goal: Integrate methods and add perspectives from diverse disciplines to build capacity for understanding the causes and consequences of harmful algal blooms

Towards establishing a long-term multidisciplinary research platform to assess the impact of microplastics on Great Lakes ecosystem health

> Melissa Duhaime, University of Michigan, Ecology and Evolutionary Biology
> Krista Rule Wigginton, University of Michigan, Civil and Environmental Engineering
> Dmitry Beletsky, University of Michigan, Cooperative Institute for Limnology and Ecosystems Research
> Goal: Establish a research program on campus to study the ecological and environmental health risks of microplastic debris in the Great Lakes

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

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

> Timothy James, University of Michigan, Ecology and Evolutionary Biology
> Gary Fahnenstiel, University of Michigan, Water Center
> John Marino, University of Michigan, Ecology and Evolutionary Biology
> Goal: Better understand the role of algal pathogens in regulating harmful algal blooms in Lake Erie

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

> Avik Basu, University of Michigan, School of Natural Resources and Environment
> Rachel Kaplan, 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

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

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, School of Natural Resources and Environment

Natalie Sampson, University of Michigan, School of Public Health

Goal: Establish a multidisciplinary research team to explore the implications of green infrastructure design and planning strategies on socio-environmental systems in Detroit

Assessing Information Needs and Developing Tools for Great Lakes Ecosystem Management

Catherine Riseng, School of Natural Resources and Environment

Kevin Wehrly, U-M/DNR Institute for Fisheries Research

Robert Goodspeed, U-M Taubman College of Architecture and Urban Planning

Ed Rutherford, NOAA Great Lakes Environmental Research Laboratory

Lizhu Wang, International Joint Commission Great Lakes Regional Office

Lacey Mason, U-M/DNR Institute for Fisheries Research

Goal: Develop web-based, ecosystem management tools for the Great Lakes region to facilitate access to habitat data at multiple spatial scales to support planning and research analysis

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, University of Michigan, Civil and Environmental Engineering

Nancy Love, University of Michigan, Civil and Environmental Engineering

Allen Burton, University of Michigan, School of Natural Resources and Environment, CILER

Terese Olson, University of Michigan, Civil and Environmental Engineering

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