

PROGRAM

60th Annual
CONFERENCE ON
GREAT LAKES RESEARCH

From Cities to Farms:
SHAPING GREAT LAKES
ECOSYSTEMS



MAY 15-19, 2017
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PROGRAM

60th Annual Conference on Great Lakes Research



May 15–19, 2017
Detroit, Michigan

#iaglr2017

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4840 South State Road
Ann Arbor, Michigan 48108
iaglr.org

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EXHIBITORS

Welcome Conference Exhibitors!

Exhibits are open daily in the River Atrium in Cobo Center.

Alpha Mach

Sainte-Julie, Québec
alphamach.com

Bactest

Cambridge, United Kingdom
bactest.com

Biosonics

Seattle, Washington
biosonicsinc.com

**Central Michigan University,
Biological Station**

Beaver Island, Michigan
cmich.edu/colleges/cst/cmubs/Pages/default.aspx

C-Map USA

Tulsa, Oklahoma
c-map.com

**Cooperative Institute for
Limnology and Ecosystems
Research**

Ann Arbor, Michigan
ciler.snre.umich.edu

Dune Technologies

Holland, Michigan
dunetechnologies.com

Elsevier

Amsterdam, Netherlands
elsevier.com

Eureka Water Probes

Austin, Texas
waterprobes.com

Fluid Imaging Technologies

Scarborough, Maine
fluidimaging.com

Fondriest

Fairborn, Ohio
fondriest.com

Friends of the Detroit River

Taylor, Michigan
detroitriver.org

GEI Consultants

Allendale, Michigan
geiconsultants.com

Great Lakes Fishery Commission

Ann Arbor, Michigan
glfc.org

**Great Lakes Institute for
Environmental Research,
University of Windsor**

Windsor, Ontario
uwindsor.ca/glier

Great Lakes Observing System

Ann Arbor, Michigan
glos.us

IAGLR 50th Anniversary

Ann Arbor, Michigan
iaglr.org

Illinois-Indiana Sea Grant

Urbana, Illinois
iisgcp.org

Kisters North America

Citrus Heights, California
kisters.net/na

McLane Research Labs

East Falmouth, Massachusetts
mclanelabs.com

Michigan Sea Grant

Ann Arbor, Michigan
miseagrant.umich.edu

A special thanks to the following, whose support is vital in our efforts to advance Great Lakes science.

Elsevier

Publisher of the *Journal of Great Lakes Research*

Great Lakes Fishery Commission

Sponsor of the *Norman S. Baldwin Fishery Science Scholarship*

**U.S. Department of Commerce, NOAA, Great Lakes Environmental
Research Laboratory**

Sponsor of IAGLR's office space

EXHIBITORS

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East Lansing, Michigan
msupress.msu.edu

Michigan Tech Research Institute
Ann Arbor, Michigan
mtri.org

Michigan Technological University, Great Lakes Research Center
Houghton, Michigan
mtu.edu/greatlakes

NOAA Great Lakes Environmental Research Laboratory
Ann Arbor, Michigan
glerl.noaa.gov

Phytoxigene
Cardiff, California
phytoxigene.com

PP Systems
Amesbury, Massachusetts
ppsystems.com

REFORMAR
Rimouski, Québec
www.reformar.ca

The Book Beat (Dan Egan book signing/sales)
Oak Park, Michigan
thebookbeat.com

Turner Designs
San Jose, California
turnerdesigns.com

Vemco
Bedford, Nova Scotia
vemco.com

Wayne State University
Detroit, Michigan
wayne.edu

Wayne State University Press
Detroit, Michigan
msupress.wayne.edu



Co-sponsored by IAGLR and the European Large Lakes Symposium

Big Lakes, Small World will be the first IAGLR meeting held outside North America, and in conjunction with the 5th European Large Lakes Symposium.



Dan Egan will be signing copies of his new book throughout the week in the exhibitor area in the Cobo River Atrium.

2017 Vallentyne Award Winner

IAGLR MEMBERSHIP

Why IAGLR Celebrates its 50th Anniversary at its 60th Conference

Fifty scientists gathered at the University of Michigan Douglas Lake Biological Station in 1953 for a conference titled *The Upper Great Lakes*. Subsequent conferences were organized regularly, and in 1966, a small steering committee proposed the formal organization of Great Lakes scientists. The result was the formation of the International Association for Great Lakes Research in 1967. That same year, the association held its first official meeting, marking the 10th gathering of these founding scientists. In recognition of the meetings that led to its formation, IAGLR includes them in the official count. That's how an organization celebrating its 50th anniversary also celebrates its tradition of 60 conferences.



Join IAGLR

Help us kick off another 50 years! Join IAGLR and support the scientific community in the exploration, discussion, and resolution of Great Lakes issues. Individual or sustaining memberships are available. Find information on our website, iaglr.org. IAGLR members enjoy

- Online and print subscription to the *Journal of Great Lakes Research*
- *Annual Conference on Great Lakes Research* registration discount
- *IAGLR Notes*, an e-mail news service
- Free *Contents Direct* email alerting service, additional discounts from Elsevier
- Eligibility for election to serve on the IAGLR Board of Directors
- Opportunities to work on IAGLR committees
- Recognition through prestigious IAGLR awards
- Access to our private *IAGLR Membership Directory*
- Networking resources
- Job Board to advertise or explore employment opportunities
- Post news of interest on our website
- And much more...

Sustaining Members

We extend our deepest appreciation to our sustaining members. Their annual contributions over the years provide a valuable foundation for IAGLR. We invite your organization to join their ranks in supporting Great Lakes research. Our current sustaining members include:

Great Lakes Fishery Commission

Ann Arbor, MI
Since 1979

Great Lakes Protection Fund

Evanston, IL
Since 1992

CONFERENCE ORGANIZERS

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SCHEDULE OVERVIEW

MONDAY

8 a.m.–5 p.m.

IAGLR Board Meeting

Cobo 259

9 a.m.–4:30 p.m.

Fish Spawning Reef Planning Techniques

Cobo 258

4–8 p.m.

Registration

Cobo 140A/River Atrium

6–9 p.m.

Welcome Reception

Cobo River Atrium

TUESDAY

8 a.m.–5 p.m.

Registration

Cobo 140A/River Atrium

8–10:40 a.m.

Concurrent Sessions

Cobo

11 a.m.–Noon

Welcome & Plenary: Joan Rose

Cobo Ambassador

Noon–1:20 p.m.

Student/Mentor Discussion Lunch

Anchor Bar 450 W Fort Street
Free ticketed event for first 50 students. Tickets available at information table.

1:20–5:20 p.m.

Concurrent Sessions

Cobo

Lake Guardian Tours

While you're learning about the latest Great Lakes research at IAGLR 2017, why not check out one of the tools making that research possible? Every year between March and October, the US



EPA research vessel Lake Guardian voyages through the five Great Lakes. Along the way, EPA scientists and visiting researchers collect vital data about the biological, chemical, and physical characteristics of the lakes. The Lake Guardian will be docked outside Cobo Hall. Tours are available the following times:

<u>Tuesday</u>	<u>Wednesday</u>	<u>Thursday</u>
12:10–1:10 p.m.	3:20–4:20 p.m.	7–8 a.m.
3:20–4:20 p.m.	5–6 p.m.	12:10–1:10 p.m.
6–7 p.m.	7–8 p.m.	3:20–4:20 p.m.

If you're interested in touring this unique vessel, please sign up at the information table when you check in.

5–6 p.m.

Editors' Workshop: Writing a paper for the JGLR

Cobo 250A

6–9 p.m.

Seafood Summit Dinner

The Atheneum

WEDNESDAY

8 a.m.–5 p.m.

Registration

Cobo 140A/River Atrium

8 a.m.–Noon

Concurrent Sessions

Cobo

Noon–1:20 p.m.

Business Lunch

Cobo Grand Ballroom A

Noon–1:20 p.m.

Teacher Luncheon

Cobo Atwater Lounge

1:40–5:20 p.m.

Concurrent Sessions

Cobo

5–6:30 p.m.

Editors' Reception

Cobo Atwater Lounge

6–8 p.m.

Poster Session & Social

Cobo River Atrium

7–10 p.m.

Wayne State University Social

Traffic Jam

511 West Canfield Street

8–10 p.m.
University of Michigan Social
Hockeytown Cafe
2301 Woodward Avenue

8–11 p.m.
Graduate Student Mixer
Garden Bowl
4120 Woodward Ave.

8:30–10 p.m.
IAGLR Defy Cup Hockey
Dearborn Ice Skating Center

THURSDAY

8 a.m.–5 p.m.
Registration
Cobo 140A/River Atrium

8–10:40 a.m.
Concurrent Sessions
Cobo

11 a.m.–Noon
Plenary: Cameron Davis
Cobo Ambassador

1:20–5:20 p.m.
Concurrent Sessions
Cobo

6–9 p.m.
**Banquet & Awards Ceremony/
Detroit River Cruise**
Aboard the Detroit Princess

FRIDAY

8 a.m.–Noon
Registration
Cobo 140A/River Atrium

8 a.m.–Noon
Concurrent Sessions
Cobo

Banquet & Awards Ceremony/Detroit River Cruise

Thursday, 6–9 p.m.
Aboard the Detroit Princess

IAGLR Awards

- Anderson-Everett Award for outstanding contributions to the Association
- Chandler-Misener Award for outstanding article in the *Journal of Great Lake Research*
- Lifetime Achievement Award for important and continued contributions to Great Lakes research
- John R. Vallentyne Award for outreach and education
- Editor's Award
- Elsevier Best Reviewer Award for the *Journal of Great Lakes Research*
- Elsevier Young Scientist Award
- Elsevier Young Student Award
- IAGLR Best Student Paper – 2016
- IAGLR Best Student Poster – 2016
- IAGLR Appreciation Awards

IAGLR Scholarships

- IAGLR Scholarship
- IAGLR-OMNR Student Travel Award
- Norman S. Baldwin Fishery Science Scholarship
- David M. Dolan Scholarship

IAGLR Defy Cup Challenge

The hockey tradition lives on! Team Canada and Team USA will face off in the IAGLR Defy Cup Challenge to raise funds for the IAGLR Scholarship. Game time is 8:30-10 p.m. Wednesday at Dearborn Ice Skating Center. Root for your favorite team while supporting young scientists and the future of Great Lakes research!



TUESDAY PLENARY

11 a.m.–Noon
Cobo Ambassador



The Science of Water Quality and Public Health in the Great Lakes

Featuring Joan Rose

Homer Nowlin Chair in Water Research, Michigan State University
Winner of 2016 Stockholm Water Prize

Is there a water quality crisis and are we risking our health in the Great Lakes region? Water is one of the most crucial of the world's life support systems, servicing a sustainable plant, animal and human network. The quality of that water affects our global biohealth. To have high water quality, we need to invest in three areas: 1) advance technology and develop water quality diagnostics. With new methodologies, we can identify emerging hazards and achieve more robust assessment of pollution sources; 2) understand water quality at larger scales impacted by land and climate. This understanding is essential to our future investments for protection and restoration; and 3) focus leadership on improving wastewater treatment, monitoring and moving toward resource recovery. Investing in cutting-edge science is more important than ever to effectively and efficiently mitigate the impacts of an aging infrastructure (or lack thereof) and the global changes underway to improve the biohealth of the planet. More than 100 years ago, cross-border pollution and untreated wastewater impacts led to one of the largest water quality studies implemented in the Great Lakes region. Great Lakes scientists led the way toward a paradigm shift that culminated in the Water Quality Agreement, one of the best compacts in the world. With current threats, Great Lakes scientists once again have an opportunity to lead.

About

Dr. Joan B. Rose is an international expert in water microbiology, water quality and public health safety. She is the Homer Nowlin Chair in Water Research at Michigan State University in the departments of Fisheries & Wildlife, and Plant, Soil and Microbiological Science and currently leads the Global Water Pathogens Project, in partnership with UNESCO. Dr. Rose is the winner of the 2016 Stockholm Water Prize. This prestigious award honors those whose work contributes to the conservation and protection of water resources, and to the well-being of the planet and its inhabitants. Her work addresses the use of new molecular tools for surveying and mapping water pollution for recreational and drinking waters, irrigation, and coastal and ballast waters; assessment of innovative water treatment technology for the developed and developing world; and use of quantitative microbial risk assessment. Rose earned her B.Sc. and Ph.D. in microbiology from the University of Arizona (Tucson) and has published more than 300 manuscripts. She is a member of the National Academy of Engineering and a Fellow of the American Academy of Microbiology. She currently serves on the U.S. EPA Science Advisory Board for the Great Lakes. She was the 2001 recipient of the Clarke Water Prize and was recently awarded honorary citizenship in Singapore for her contributions to water quality, water education and Singapore's water security 4-taps program.

11 a.m.–Noon
Cobo Ambassador

Great Lakes Evolution in a Time of Hyper-Change

Featuring Cameron Davis

Vice President, GEI Consultants

Former Senior Advisor to U.S. EPA Administrator



@Aquavate

When we think of the Great Lakes “ecosystem,” we often think immediately about the biological, chemical and physical linkages between species and their niches. But more and more, the health of the Great Lakes is linked to our other ecosystems: institutional, political, economic, technological, financial and even changes in the media landscape. Will changing dynamics within these ecosystems help or hurt the Great Lakes? The answer depends on whether we see them and how proactive we are in managing them.

Cameron (Cam) Davis has more than 30 years’ experience in integrating policy, law, science and economics. Previously, as senior advisor to two U.S. Environmental Protection Agency administrators in Washington, D.C., he coordinated the work of 11 federal departments, including the departments of the Interior, Agriculture, Homeland Security, Commerce, and the White House Council on Environmental Quality, among others. His work included federal policy and funding coordination valued at more than \$2 billion under the Great Lakes Restoration Initiative, which has been widely recognized as a successful results-oriented program with strong bipartisan support. In addition, Davis collaborated with state resource agencies, municipalities, tribes, academia, business and civic stakeholders to clean up toxic hotspot Areas of Concern,

prevent the migration of invasive species to the Great Lakes and reduce runoff to improve water quality. He was also a lead negotiator on the U.S. negotiating team along with the U.S. Department of State that led to the Great Lakes Water Quality Agreement of 2012, the first time in a quarter-century that the internationally recognized pact had been revitalized. In February 2017, Davis became a vice president at GEI Consultants, Inc., where he is responsible for guiding the firm’s Upper Midwest water quality, policy, infrastructure and other water resources efforts. Davis earned his law degree, including certification in environmental and energy law, from the Illinois Institute of Technology’s Chicago-Kent College of Law and a B.A. from Boston University in International Relations.

About

WORKSHOPS & DISCUSSIONS

MONDAY

Teaching Undergraduate Science through Great-Lakes-focused Research

Noon–4 p.m. / Wayne State University, Biological Sciences Building 1177

Traditional approaches to undergraduate science education focus on teaching from disciplines such as biology, chemistry and environmental engineering to Great Lakes issues such as invasive species control, harmful algal blooms, and habitat restoration. This interactive curriculum-development session will highlight strategies for Great Lakes researchers to reverse this paradigm by teaching through these issues to the basic science in undergraduate coursework for both majors and non-majors. Light lunch provided. (<https://ncsce.wildapricot.org/event-2532112>)

Fish Spawning Reef Planning Techniques

9 a.m.–4:30 p.m. / Cobo 258

This team-taught seminar will explore strategies for establishing fish spawning reefs to promote the recovery of native species. Specific topics will include site assessment and selection, hydrodynamics and sedimentation concerns, reef design and construction, and monitoring of early life stages of fish. Participants will discuss how techniques used in the St. Clair and Detroit rivers could be applied in other locations. Seminar registration is separate from IAGLR. See Michigan Sea Grant's site for more information about the seminar (<https://goo.gl/acOfK5>).

TUESDAY

Open Discussion on Multijurisdictional Water Quality Issues

9–9:20 a.m. / Cobo 251C

There are numerous water quality efforts underway to address issues of excessive loads of nutrients (and sediments and contaminants) to shared waters. In a multijurisdictional context, it is important to have a common understanding of the causes and consequences of excessive loads. Binational modeling holds promise as a tool by which this common understanding can be acquired to the benefit of government agencies, stakeholders and the public. This open discussion is an opportunity to share experiences regarding binational modeling and identify new opportunities. Part of the *Water Quality Modeling in Transboundary Lake and River Systems* session.

Student/Mentor Discussion Lunch

Noon-1:20 p.m. / Anchor Bar (450 W. Fort Street)

Student members of IAGLR are welcome to participate in a discussion with mentors including post-docs, early career scientists, and distinguished scientists. Students will have the opportunity to ask mentors questions on a range of topics including publishing and career advice to field-specific research. This event is free and lunch will be provided; however, space is limited to the first 50 students. Tickets for this event can be found at the information table. The Anchor Bar is a short walk from Cobo Hall.

CSMI and State of Lake Panel Discussion

3–3:20 p.m. / Cobo 252A

Representatives from several State of Lake committees will be on hand to review how IAGLR and CSMI can work together during upcoming annual State of Lake conferences. Part of the *Connecting Researchers to CSMI through IAGLR* session.

WORKSHOPS & DISCUSSIONS

Common Challenges and Successful Techniques for Fish Habitat Restoration

4:40–5:20 p.m. / Cobo 252B

The session *Lessons Learned and New Tools for Aquatic Habitat Restoration* will culminate in a panel discussion about common challenges, lessons and successful techniques for fish habitat restoration. Panelists will reflect on session talks as well as their own broad experience to help characterize key concepts and best practices for advancing restoration science and practice. Prior presenters and panelists will be candid about challenges and unanticipated restoration results to allow others to learn from these experiences. A number of lessons and tools are likely to emerge about different aspects of the restoration process, including project planning and design strategies, tips for using numerical modeling to guide decisions and recommendations for integrating physical and biological assessment techniques. All participants will be encouraged to offer comments and questions.

Microplastics in the Laurentian Great Lakes: Facilitated Discussion

5–5:20 p.m. / Cobo 250B

The negative ecosystem impacts of anthropogenic plastic debris in marine ecosystems are well-documented and include ingestion by and entanglement of animals as well as increased transport of hydrophobic contaminants. Recently, a new focus of concern has emerged: microplastics. This land-based marine debris includes plastic particles of varying shapes, e.g., beads, fibers, that are less than 5 millimeters in size. Researchers have begun to describe the abundance and location of these microplastics in the Laurentian Great Lakes region, including in sediment, tributary waters, and wastewater treatment plant effluent. However, there is continued interest in the fate of these particles and their impact on food web dynamics, particularly in freshwater systems. Following all presentations in the *Plastics Research in the Great Lakes: Identifying Gaps and Facilitating Collaboration* session, chairs will use this time to facilitate discussion to build on previous and inform future efforts regarding anthropogenic plastics research and outreach in the Great Lakes region.

CSMI and State of Lake Panel Discussion

5–5:20 p.m. / Cobo 252A

This binational panel discussion will focus on the Cooperative Science and Monitoring (CSMI) process. The panel will field questions about how groups may become more active in the CSMI process and the role of IAGLR in establishing State of Lake conferences that will, in part, summarize the results of CSMI activities in each lake. Part of the *Connecting Researchers to CSMI through IAGLR* session.

Editors' Workshop: Writing a Paper for the JGLR

5–6 p.m. / Cobo 250A

As a new scientist, you may feel overwhelmed by the idea of submitting your paper to a journal. You may be asking yourself questions like the following: *What steps should I follow to create a paper that will be accepted? Which journal should I submit this paper to? What do I need to know to successfully submit my paper? What happens after I submit my paper?* Learn the answers to these and other questions at this year's Editors' Workshop. The workshop is open to anyone wanting to become more familiar with the scientific publication process used by the *Journal of Great Lakes Research*.

WORKSHOPS & DISCUSSIONS

WEDNESDAY

Restoring Great Lakes Areas of Concern: Lessons and Challenges

Reviews: How to Give and Take

11 a.m.–Noon / Cobo Ambassador

Based on 25 presentations of the session *Restoring Great Lakes Areas of Concern*, the panel discussion will focus on synthesizing and evaluating the achievements and lessons learned through 32 years of Remedial Action Plans to restore Great Lakes Areas of Concern.

Physiology and Ecology of Dreissenid Mussels: Adaptation, Impacts, and Control

11:40 a.m.–Noon / Cobo 250C

This will be an overview and discussion highlighting recent advances in research on dreissenid physiology and ecology, including reproductive physiology, bioenergetics, ecological stoichiometry, feeding, ecosystem engineering, and the impacts of these processes on the ecosystem. Part of the session *Invasive Dreissenid Mussels: Ecology, Impacts, and Management*.

Pulling it all Together: Reflections on Best Practices for Modeling that Support Decisionmaking

5–5:20 p.m. / Cobo 252A

A panel of Great Lakes modelers and managers will discuss the “modeling for water quality management” best practice list generated through the presentations over the course of the session *How Do We Get There from Here? Application of Models to Inform Water Quality Management*. The goal is to develop an annotated list of practices that can be circulated to regional modelers and decisionmakers alike to inform the best applied modeling work we hope to see in the region.

Editors’ Reception (*Invitation only*)

5–6:30 p.m. / Cobo Atwater Lounge

Each year the *Journal of Great Lakes Research* is supported by a group of dedicated associate editors and the ongoing efforts of the IAGLR Publication Committee. We want to take this time to thank you for your efforts and get your feedback on how the journal is doing and what we can do better. If you’re one of these hardworking folks, please join us for the Editors’ Reception.

WORKSHOPS & DISCUSSIONS

THURSDAY

Lessons Learned from the Frontiers in Nutrient Reduction Community Engagement & Science: Opportunities to Cross-pollinate Ideas that Translate into Action

3:30–3:40; 4:40–5:20 p.m / Cobo Ambassador

The full-day session *Lessons from the Frontiers in Science for Nutrient Reduction from Agriculture in the WLEB* will feature presentation that describe research and assessment results related to interdisciplinary, community-engaged efforts aimed at optimizing and accelerating implementation of conservation programs in watersheds in the Great Lakes Region, with a particular emphasis on community engagement in the Western Lake Erie Basin. The panel discussions will include speakers from the day and provide session participants with an opportunity to ask more in-depth questions. This will also be an opportunity for participants to share information with each other on how they can take information and lessons learned during the session and translate that into action back to their respective watersheds.

FRIDAY

Connecting Science, Research and Industry in the Great Lakes

11:40 a.m.–Noon / Cobo 252A

As part of the session *Freshwater, Fresh Ideas: Great Lakes Research and Innovative Industries*, session chairs will use guided Q&A to identify themes from the session presentations and explore additional opportunities for connecting industry data needs with ongoing monitoring and research about the Great Lakes ecosystem.



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PLANNER

	Monday	Tuesday	Wednesday			
8:00						
8:20						
8:40						
9:00						
9:20		Break	Break			
9:40						
10:00						
10:20						
10:40						
11:00		Welcome & Plenary: Joan Rose <i>Cobo Ambassador</i> 11-12				
11:20						
11:40						
12:00		Lunch <i>(on your own)</i>	Student Luncheon <i>Anchor Bar</i> 450 W. Fort St.	IAGLR Business Lunch <i>Cobo Grand Ballroom A</i>	Teacher Luncheon <i>Cobo Atwater Lounge</i>	
1:20						
1:40						
2:00						
2:20						
2:40						
3:00						
3:20		Break	Break			
3:40						
4:00						
4:20						
4:40						
5:00		Editors' Workshop <i>Cobo 250A</i> 5-6	Editors' Reception <i>Cobo Atwater</i> 5-6:30			
5:20						
5:40						
6:00	Welcome Reception <i>Cobo River Atrium</i> 6-9	Seafood Summit Dinner <i>The Athenaeum</i> 6-9			Poster Session & Social <i>Cobo River Atrium</i> 6-8	
6:30						
7:00						
8:00					University Socials WSU 7-10 UM 8-10	
8:30					Student Mixer <i>Garden Bowl</i> 8-11	IAGLR Hockey <i>Dearborn Ice Skating Center</i> 8-10
9:00						
10:00						

Thursday	Friday	
		8:00
		8:20
		8:40
		9:00
Break	Break	9:20
		9:40
		10:00
		10:20
		10:40
Plenary: Cameron Davis <i>Cobo Ambassador</i> 11-12		11:00
		11:20
		11:40
Lunch (on your own)	Conclusion of Conference	12:00
		1:20
		1:40
		2:00
		2:20
		2:40
		3:00
Break		3:20
		3:40
		4:00
		4:20
		4:40
		5:00
		5:20
		5:40
Banquet / Detroit River Cruise <i>Detroit Princess</i> 6-9		6:00
		7:00
		8:00
		8:30
		9:00
		10:00



Since 1975, **LimnoTech's** scientists and engineers have been partners in cutting-edge research, data management, tool and web development, ecosystem and watershed modeling, lake monitoring, and decision support.

Selected areas of expertise:

- Cloud-hosted scientific data
- Interactive online tools
- AOC data management
- 3D ecosystem modeling
- Watershed BMP management
- Long-range simulation modeling
- Real-time buoy & sensor support
- Water quality, plankton, and fish sampling
- Environmental sample design
- Regulatory and workshop support
- HABs monitoring and modeling

See us at IAGLR 2017 for these presentations:

Date	Time	Room	Expert	Title
Tues, May 16	8:00 AM	250C	Tad Slawecki	Thoughts on Early Warning Systems and the Great Lakes
Tues, May 16	3:40pm-5pm	250C	Tad Slawecki	Co-Chair: Big Data for Great Lakes Decision-Making
Tues, May 16	3:40pm	250C	Tad Slawecki	Defining Big Data for the Great Lakes
Tues, May 16	1:20 PM-5 PM	252A	Ed Verhamme	Co-Chair: Connecting Researchers to CSMI
Tues, May 16	3:40 PM	252A	Ed Verhamme	State of Lake Michigan Fall 2017 Conference
Wed, May 17	9:00 AM	258	Jen Daley	Developing DNA Science and its Potential Impact on Management and Compliance
Wed, May 17	1:40 PM	252A	Ed Verhamme	Towards Operational Modeling of Great Lake Embayments: A2EM
Wed, May 17	4:40 PM	251B	Kathy Koch	Internet-Based Larval Fish and Egg Taxonomic Key
Thu, May 18	9:40 AM	252A	Greg Cutrell	Enhancing Monitoring Capabilities with Technology Integration
Thu, May 18	2:20 PM	AMB	Derek Schlea	Assessing the Large-Scale Feasibility of Wetlands as Agricultural BMPs
Fri, May 19	8 AM-11AM	252A	Ed Verhamme	Co-Chair: Freshwater, Fresh Ideas:Great Lakes Research and Innovative Industries
Fri, May 19	8:00 AM	252A	Ed Verhamme	Industry Perspective on Great Lakes Issues
Fri, May 19	10:00 AM	252A	Doug Bradley	EPRI's Great Lakes 316b Interest Group: A Regulatory Workgroup Success

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Tuesday Morning Sessions

8–10:40	<p>Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes <i>Co-Chairs: George Lesbkeovich and Robert Shuchman</i></p>	250A
8–10:40	<p>Plastics Research in the Great Lakes: Identifying Gaps and Facilitating Collaboration <i>Co-Chairs: Sarah Zack, Melissa Dubaime, Carolyn Foley</i></p>	250B
8–9:20	<p>Modeling Fish Responses to Changing Habitat <i>Co-Chairs: Alexander Jensen, Lisa Peterson, Alexander Maguffee</i></p>	250C
8–10:40	<p>Keeping it Flowing: Science and Research in Connecting Channels of the Great Lakes <i>Co-Chairs: Dimitry Gorsky, Knut Mebler, Edward F. Roseman, Lyubov E. Burlakova</i></p>	251A
8–10:40	<p>Towards Development of a Great Lakes Early Warning System <i>Co-Chairs: Lucinda Johnson, Michael Twiss, Matthew Child, Lizhu Wang</i></p>	251B
8–10:40	<p>Water Quality Modeling in Transboundary Lake and River Systems <i>Co-Chairs: Glenn Benoy and Dale Robertson</i></p>	251C
8–9:20	<p>Data and Scientific Priorities for Managing Water Use in the Great Lakes-St. Lawrence River Basin <i>Co-Chairs: Jon Allan, Mike Piskur, Jim Nicholas</i></p>	252A
8–10:40	<p>Lessons Learned and New Tools for Aquatic Habitat Restoration <i>Co-Chairs: Lynn Vaccaro, Tim Calappi, Ed Roseman, Matt Herbert</i></p>	252B
8–10:40	<p>Discoveries, Trends, and Implications of Chemicals in the Great Lakes <i>Co-Chairs: David Pitts, Shawn McElmurry, Amina Salamova, Jiehong Guo, Elizabeth Murphy, Todd Nettesheim</i></p>	258
8–10:40	<p>Urban Field Experiences for Research and Education <i>Co-Chairs: Carol Miller and Tracie Baker</i></p>	259
8–10:40	<p>Restoring Great Lakes Areas of Concern <i>Co-Chairs: John Hartig and Mubi Munavar</i></p>	Ambassador
9:40–10:40	<p>Using Bioindicators to Monitor Ecological Responses and Restoration Success <i>Co-Chairs: David Mifsud and Maegan Stapleton</i></p>	250C
9:40–10:40	<p>Disease and Pathogens of the Great Lakes and Freshwater Ecosystems <i>Chair: Kevin Strychar</i></p>	252A

DAILY SESSION OVERVIEW

Tuesday Afternoon Sessions

1:20–3:20	Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes <i>Co-Chairs: George Lesbkeovich and Robert Shuchman</i>	250A
1:20–5:20	Plastics Research in the Great Lakes: Identifying Gaps and Facilitating Collaboration <i>Co-Chairs: Sarah Zack, Melissa Dubaime, Carolyn Foley</i>	250B
1:20–3:20	Using Bioindicators to Monitor Ecological Responses and Restoration Success <i>Co-Chairs: David Mijfsud and Maegan Stapleton</i>	250C
1:20–5	Keeping it Flowing: Science and Research in Connecting Channels of the Great Lakes <i>Co-Chairs: Dimitry Gorsky, Knut Mehler, Edward F. Roseman, Lyubov E. Burlakova</i>	251A
1:20–5	The Ecological and Managerial Impacts of Round Goby across the Great Lakes <i>Co-Chairs: Norine Dobiesz and Rick Clark</i>	251B
1:20–5	Great Lakes Acoustic Telemetry - from Ecology to the Restoration and Management of Fishes <i>Co-Chairs: Scott Colborne, Darryl Hondorp, Steven Kessel</i>	251C
1:20–5	Connecting Researchers to CSMI through IAGLR <i>Co-Chairs: Paris Collingsworth and Ed Verhamme</i>	252A
1:20–5:20	Lessons Learned and New Tools for Aquatic Habitat Restoration <i>Co-Chairs: Lynn Vaccaro, Tim Calappi, Ed Roseman, Matt Herbert</i>	252B
1:20–5:20	Discoveries, Trends, and Implications of Chemicals in the Great Lakes <i>Co-Chairs: David Pitts, Shawn McElmurry, Amina Salamova, Jiehong Guo, Elizabeth Murphy, Todd Nettesheim</i>	258
1:20–5:20	#SocialGreatLakes: Communicating Great Lakes Science through Social Media <i>Co-Chairs: Katherine O'Reilly, Nicole Wood, Solomon David</i>	259
1:20–5:20	Restoring Great Lakes Areas of Concern <i>Co-Chairs: John Hartig and Mohi Munavar</i>	Ambassador
3:40–5	Insights into Mechanisms of Ecological Change from Cross-Lake Comparisons <i>Co-Chairs: Lars Rudstam, James Watkins, Lyubov Burlakova, Todd Nettesheim</i>	250A
3:40–5	Big Data for Great Lakes Decision-Making <i>Co-Chairs: Tad Slawacki and Rebecca Pearson</i>	250C

Wednesday Morning Sessions

8–12	Restoring Great Lakes Areas of Concern <i>Co-Chairs: John Hartig and Mohi Munawar</i>	140B
8–9:20	Insights into Mechanisms of Ecological Change from Cross-Lake Comparisons <i>Co-Chairs: Lars Rudstam, James Watkins, Lyubov Burlakova, Todd Nettesheim</i>	250A
8–12	Fitting Dynamic Models to Time-Series Data <i>Co-Chairs: Scott Peacor, John Marino, Samuel Truesdell, James Bence</i>	250B
8–12	Invasive Dreissenid Mussels: Ecology, Impacts, and Management <i>Co-Chairs: Ashley Baldrige Elgin, Henry Vanderploeg, Donna Kasbian</i>	250C
8–9:20	Protecting & Restoring Urban Watersheds: Using Green Infrastructure to Reduce Urban Runoff <i>Co-Chairs: Jackie Adams, Danielle Green, Ralph Haefner</i>	251A
8–12	Pathways for Invasions into the Great Lakes: Detection, Monitoring, and New Technology <i>Co-Chairs: Carol Stepien, Jeffrey Ram, Andrew Mahon, Kevin Czajkowski</i>	251B
8–11:20	Physical Processes in Lakes <i>Co-Chairs: Dmitry Beletsky, Chin Wu, Cary Troy, Eric Anderson</i>	251C
8–12	How Do We Get There from Here? Application of Models to Inform Water Quality Management <i>Co-Chairs: Jennifer Read, Jay Martin, Scott Sowa</i>	252A
8–9:20	Real-Time Monitoring of Source Water Quality <i>Co-Chairs: James Olson and Carol Miller</i>	252B
8–12	Advances in Molecular Methods and their Impact on Management of the Great Lakes <i>Co-Chairs: Trevor Krabbenhoft and Thomas Dowling</i>	258
8–12	Harmful Algal Blooms (HABs) from Watershed Influence to Ecosystem Effects <i>Co-Chairs: Mary Anne Evans, Timothy Davis, George Bullerjahn, Ken Gibbons</i>	259
9:40–12	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management <i>Co-Chairs: Kimberly Van Meter, Chris Parsons, Nandita Basu, Philippe Van Cappellen</i>	250A
9:40–12	Great Lakes Outreach and Education <i>Co-Chairs: Kristin TePas, Helen Domske, Rochelle Sturtevant</i>	251A
9:40–11:40	A Tribute to Jim Diana and his Influence on Great Lakes Research and Management <i>Co-Chairs: David Clapp, Solomon David, Joe Nohner</i>	252B

DAILY SESSION OVERVIEW

Wednesday Afternoon Sessions

1:40–5	Progress in Restoring Areas of Concern under the Great Lakes Restoration Initiative <i>Co-Chairs: John Perrecone, Richard Hobrla, Matt Doss</i>	140B
1:40–5:20	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management <i>Co-Chairs: Kimberly Van Meter, Chris Parsons, Nandita Basu, Philippe Van Cappellen</i>	250A
1:40–3:20	Fitting Dynamic Models to Time-Series Data <i>Co-Chairs: Scott Peacor, John Marino, Samuel Truesdell, James Bence</i>	250B
1:40–5:20	Big Lakes - Small World: Not all Great Lakes are Laurentian <i>Co-Chairs: George Bullerjahn, Robert McKay, Boglarka Somogyi, John Lenters, Orlane Anneville, Lars Rudstam, Anne-Mari VentelÃ</i>	250C
1:40–3:20	Great Lakes Outreach and Education <i>Co-Chairs: Kristin TePas, Helen Domske, Rochelle Sturtevant</i>	251A
1:40–5:20	Great Lakes Fish and Fisheries <i>Chair: Jeremy Holden</i>	251B
1:40–5	Physical Processes in Lakes <i>Co-Chairs: Dmitry Beletsky, Chin Wu, Cary Troy, Eric Anderson</i>	251C
1:40–5:20	How Do We Get There from Here? Application of Models to Inform Water Quality Management <i>Co-Chairs: Jennifer Read, Jay Martin, Scott Sowa</i>	252A
1:40–3:20	A tribute to Jim Diana and his influence on Great Lakes research and management <i>Co-Chairs: David Clapp, Solomon David, Joe Nohner</i>	252B
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1:40–5	Harmful Algal Blooms (HABs) from Watershed Influence to Ecosystem Effects <i>Co-Chairs: Mary Anne Evans, Timothy Davis, George Bullerjahn, Ken Gibbons</i>	259
3:40–5:20	The Physical Systems of Large Lakes at Seasons to Millennia <i>Co-Chairs: Brent Lofgren and Jia Wang</i>	250B
3:40–5:20	Improving Model Predictions through Coupled System and Data Assimilation <i>Co-Chairs: Philip Chu, Vincent Fortin, Pengjie Xue, Matthew Hoffman</i>	251A
3:40–5:20	Advances in Understanding and Management of Non-native Species along the Invasion Curve <i>Co-Chairs: Stephen Hensler, Lindsay Chadderton, Seth Herbst, John Navarro</i>	252B

Thursday Morning Sessions

8–10:40	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management <i>Co-Chairs: Kimberly Van Meter, Chris Parsons, Nandita Basu, Philippe Van Cappellen</i>	250A
8–9	The Physical Systems of Large Lakes at Seasons to Millennia <i>Co-Chairs: Brent Lofgren and Jia Wang</i>	250B
8–10:40	Big Lakes - Small World: Not all Great Lakes are Laurentian <i>Co-Chairs: George Bullerjahn, Robert McKay, Boglarka Somogyi, John Lenters, Orlane Anneville, Lars Rudstam, Anne-Mari VentelÃ</i>	250C
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8–10:40	Great Lakes Fish and Fisheries <i>Chair: Jeremy Holden</i>	251B
8–9:20	Physical Processes in Lakes <i>Co-Chairs: Dmitry Beletsky, Chin Wu, Cary Troy, Eric Anderson</i>	251C
8–9:20	Bottom Mapping in the Laurentian Great Lakes: Physical, Biological and Cultural Features <i>Co-Chairs: Brandon Krumwiede and Peter Esselman</i>	252A
8–10:40	Advances in Understanding and Management of Non-native Species along the Invasion Curve <i>Co-Chairs: Stephen Hensler, Lindsay Chadderton, Seth Herbst, John Navarro</i>	252B
8–10:40	Discoveries, Trends, and Implications of Chemicals in the Great Lakes <i>Co-Chairs: David Pitts, Shawn McElmurry, Amina Salamova, Jiehong Guo, Elizabeth Murphy, Todd Nettesheim</i>	258
8–10:40	Progress in Restoring Areas of Concern under the Great Lakes Restoration Initiative <i>Co-Chairs: John Perrecone, Richard Hobrla, Matt Doss</i>	259
8–10:40	Lessons from the Frontiers in Science for Nutrient Reduction from Agriculture in the WLEB <i>Co-Chairs: Michelle Selzer, Monica Day, Andrea Stay</i>	Ambassador
9:40–10:40	Application of Trophic Markers in Aquatic Ecology <i>Co-Chairs: Austin Happel, Jacques Rinchard, Sergiusz Czesny</i>	250B
9:40–10:40	What Good does it do Me? Engaging Community Stakeholders in the Implementation and Valuation of Green Infrastructure <i>Chair: Paul Draus</i>	251C
9:40–10:40	Innovative Observations and Emerging Technologies <i>Co-Chairs: Steven Ruberg, Kelli Paige, Thomas Jobengen, Christopher Spence</i>	252A

DAILY SESSION OVERVIEW

Thursday Afternoon Sessions

1:20–5	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management <i>Co-Chairs: Kimberly Van Meter, Chris Parsons, Nandita Basu, Philippe Van Cappellen</i>	250A
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1:20–5:20	Regional Water Management: Development and Application of Modeling and Data for Decisions <i>Co-Chairs: Lauren Fry, Andrew Gronewold, Jacob Bruxer, Deanna Apps</i>	251A
1:20–5:20	Great Lakes Fish and Fisheries <i>Chair: Jeremy Holden</i>	251B
1:20–5:20	Lake Erie Harmful Algal Bloom Research Initiatives: Field to Faucet and Beyond <i>Co-Chairs: Douglas Kane, Jay Martin, Christopher Winslow</i>	251C
1:20–5	Innovative Observations and Emerging Technologies <i>Co-Chairs: Steven Ruberg, Kelli Paige, Thomas Johengen, Christopher Spence</i>	252A
1:20–4:40	Advances in Understanding and Management of Non-native Species along the Invasion Curve <i>Co-Chairs: Stephen Hensler, Lindsay Chadderton, Seth Herbst, John Navarro</i>	252B
1:20–3	Watershed and Coastal Sediment Processes: Where is it going? <i>Co-Chairs: Carol Miller, John Barkach, Jim Selegean, Rob Nairn</i>	258
1:20–5	Understanding Drivers of Benthic Community Condition in the Laurentian Great Lakes <i>Co-Chairs: Elizabeth Hinchey, Glenn Warren, Lyubov Burlakova, Julie Lietz</i>	259
1:20–4:40	Lessons from the Frontiers in Science for Nutrient Reduction from Agriculture in the WLEB <i>Co-Chairs: Michelle Selzer, Monica Day, Andrea Stay</i>	Ambassador
3:40–5:20	Binational and Regional Cooperation on Invasive Plant Management - the Case of Phragmites <i>Co-Chairs: Dr. Pat Chow-Fraser, Dr. Kurt Kowalski, Heather Braun</i>	250C
3:40–5	The Science and Policy of Multiple Stressors and Cumulative Effects in the Great Lakes <i>Co-Chairs: Paul Sibley, Soren Brothers, Rene Shabmohamadloo</i>	258

Friday Morning Sessions

8–12	Thiamine Deficiency in the Great Lakes - a Recurring Issue <i>Co-Chairs: Jacques Rinchard, Matt Futia, Donald Tillitt</i>	250B
8–11:40	Binational and Regional Cooperation on Invasive Plant Management - the Case of Phragmites <i>Co-Chairs: Dr. Pat Chow-Fraser, Dr. Kurt Kowalski, Heather Braun</i>	250C
8–11:40	Regional Water Management: Development and Application of Modeling and Data for Decisions <i>Co-Chairs: Lauren Fry, Andrew Gronewold, Jacob Brusser, Deanna Apps</i>	251A
8–11:20	Great Lakes Fish and Fisheries <i>Chair: Jeremy Holden</i>	251B
8–11:40	Lake Erie Harmful Algal Bloom Research Initiatives: Field to Faucet and Beyond <i>Co-Chairs: Douglas Kane, Jay Martin, Christopher Winslow</i>	251C
8–12	Freshwater, Fresh Ideas: Great Lakes Research and Innovative Industries <i>Co-Chairs: Ed Verhamme and Kathryn Buckner</i>	252A
8–12	Relevance of Bacterial, Archaeal, and Viral Dynamics to Great Lakes ecosystem processes <i>Co-Chairs: Vincent Denef and Melissa Dubaime</i>	252B
8:40–11:40	The New Age of Ballast Water Management in the Great Lakes <i>Chair: Jeffrey Ram</i>	250A

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- work at a bioregional scale
- indigenize water governance
- start new conversations about 'the commons' and our Commons Charter
- build unity in 5 Great Lakes languages
- host visioning & organizing strategies
- teach water ethics & gratitude

- are the source of our wellbeing & identity
- work as one interdependent whole connecting their health with ours
- are a gift and eternal responsibility that every generation protects for the next one
- have been shared & sustained by Indigenous nations throughout the ages
- obligate nations into shared decision making through honorable treaty

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TUESDAY, MAY 16

	250A	250B	250C	251A	251B
	Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes	Plastics Research in the Great Lakes: Identifying Gaps and Facilitating Collaboration	Modeling Fish Responses to Changing Habitat	Keeping it Flowing: Science and Research In Connecting Channels of the Great Lakes	Towards Development of a Great Lakes Early Warning System
8:00	<u>D.K. Hall</u> GLAWEX'17 - Snow and Ice Field and Aircraft Experiment in Michigan and the Great Lakes	<u>M.P. McGuire</u> Florida Microplastic Awareness Project: A Citizen Science Initiative	<u>A.W. Milt</u> Tradeoffs among sea lamprey and beneficiary species from multi-species planning of barrier removals	<u>N. Drag</u> Citizen Science Datasets Reveal Drivers of Spatial and Temporal Variation for Anthropogenic Litter	<u>T.A.D. Slaweki</u> Some Thoughts on Early Warning Systems and the Great Lakes
8:20	<u>G.E. Gunn</u> Microwave Scattering Mechanisms of Snow-Covered Freshwater Lake Ice in Western Michigan - GLAWEX-17	<u>M.A. Martz</u> Building Support for Microplastic Research Through Education and Outreach	<u>F.A. Montgomery</u> A habitat-based framework to predict and mitigate the impacts of drain maintenance on fishes	<u>R.L. Kiesling</u> Effects of tributary inflows on water, sediment, and nutrient budgets in the St. Louis River Estuary	<u>E.D. Reavie</u> Paleolimnology Provides Early Warnings of Impacts from Eutrophication, Invasive Species and Climate
8:40	<u>G. Leshkevich</u> Great Lakes Satellite SAR Ice Type Classification and Its Relation to ICECON	<u>J.S. Cross</u> Citizen Scientist, Marine Debris and the Great Lakes	<u>M.A. Simonson</u> Modeling Nearshore Fish Community Responses to Shoreline Types in Lake Erie	<u>M.B. Pawlowski</u> Sediment and water quality insights from the Great Lakes connecting channels NCCA surveys	<u>Y. Shimoda</u> Guiding delisting decisions in the Great Lakes area: A prognostic tool for forecasting HABs
9:00	<u>M.J. Sayers</u> Spatial and Temporal Patterns of Inherent Optical Properties in Western Lake Erie for 2015 and 2016	<u>E. McKinnon</u> A Citizen Engagement Approach to Water Advocacy: Experiences from eXXpedition Great Lakes 2016	<u>J.D. Weller</u> Hydrogeomorphic Modeling of Coastal Marsh Extent in Georgian Bay, Lake Huron	<u>E.F. Roseman</u> Fishery Management Considerations in an Adaptive Framework for the SCDRS Initiative	<u>D.G. Gill</u> Understanding the Potential Utility of the HAB Tracker Forecast Model for Western Lake Erie Anglers
9:20	BREAK				

251C	252A	252B	258	259	Ambassador	
Water Quality Modeling in Transboundary Lake and River Systems	Data and Scientific Priorities for Managing Water Use in the GL-SL River Basin	Lessons Learned and New Tools for Aquatic Habitat Restoration	Discoveries, Trends, and Implications of Chemicals in the Great Lakes	Urban Field Experiences for Research and Education	Restoring Great Lakes Areas of Concern	
<u>A.D. Teshager</u> Modeling St. Clair - Detroit River system watershed using the Soil and Water Assessment Tool (SWAT)	<u>J.A. Dungavell</u> Implementation of the Sustainable Water Resources Agreement in the Province of Ontario	<u>J.C. Boase</u> Connecting science and practice to restore fish habitat in the St. Clair and Detroit rivers	<u>L.L. Stahl</u> Probability-Based Assessments of Perfluorinated Compounds in Great Lakes Fish	<u>L.J. Treemore-Spears</u> The Role of Partnerships in Urban Field Research	<u>T. Hyde</u> Opening Remarks for Restoring Great Lakes Areas of Concern	8:00
<u>D.M. Robertson</u> Binational SPARROW Watershed Modeling of the Entire Great Lakes Basin	<u>M.S. Piskur</u> A Regional Science Strategy for Water Uses from the Great Lakes-St. Lawrence River Basin	<u>G. Annis</u> Informing Coastal Resilience in Western Lake Erie: A New Visualization Tool on CoastalResilience.org	<u>A.D. Point</u> Perfluoroalkyl Acid Extraction and Quantification Optimization and Basin-Wide Temporal Insights	<u>T.R. Baker</u> Wayne State University field station: the pilot plant at the GLWA's Water Works Park	<u>M. Goffin</u> Restoring Great Lakes Areas of Concern Symposium	8:20
<u>G. Benoy</u> Implications of output from Red-Assiniboine River Basin SPARROW nutrient models for Lake Winnipeg	<u>S.J. Cole</u> Human Uses of Great Lakes - St. Lawrence Water: What We Know and Don't Know	<u>M.J. Battaglia</u> Evaluation of available geospatial data for determining wetland connectivity in the Great Lakes	<u>S. Fakouri Baygi</u> Comprehensive Emerging Chemical Discovery: Aromatic Chlorinated and Brominated Compounds in Lake Ontario	<u>J. Press</u> Lake St. Clair Metropark: Radon Based Computational Mass Balance Approach to SGD Flux Quantification	<u>J. Gee</u> Restoring Canada's Great Lakes Areas of Concern-Progress and Lessons Learned	8:40
<i>Open Discussion on Multijurisdictional Water Quality Issues</i>	<u>J.R. Nicholas</u> Water Use of Thermoelectric Power Production in the Great Lakes-St. Lawrence River Basin	<u>C.A. May</u> Erie Marsh Preserve: Restoration of a Diked Coastal Wetland	<u>M.S. Milligan</u> Targeted Analysis of Emerging Contaminants in Great Lakes fish using GC/MS/MS Methodologies	<u>J.L. Ram</u> Wayne State University field station: The Belle Isle Aquarium Science Laboratory and Field Facility	<u>R.M. Hobrla</u> Michigan Approach to Targets for Removing BUIs and Delisting AOCs	9:00
BREAK						9:20

TUESDAY, MAY 16

	250A	250B	250C	251A	251B
	Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes	Plastics Research in the Great Lakes: Identifying Gaps and Facilitating Collaboration	Using Bioindicators to Monitor Ecological Responses and Restoration Success	Keeping it Flowing: Science and Research In Connecting Channels of the Great Lakes	Towards Development of a Great Lakes Early Warning System
9:40	<u>K.R. Bosse</u> Developing A Daily Composite Product for Water Quality Parameters in the Great Lakes	<u>J.F. Bartolotta</u> Barriers and benefits to desired behaviors for single-use plastic items in Northeast Ohio	<u>D.G. Uzarski</u> The Great Lakes Coastal Wetland Monitoring Program: Seven Years of Implementation	<u>R.L. DeBruyne</u> Snapshot in Time: Identifying Restoration Needs and Challenges in St. Clair-Detroit River System	<u>J.A. Birbeck</u> Online Pre-concentration of Microcystins followed by LC-MS/MS
10:00	<u>B.M. Lesht</u> Assessing Methods Used to Estimate Photic Depth in the Great Lakes from Satellite Observations	<u>P.W. Barrows</u> Grab vs. neuston tow net: a microplastic sampling performance comparison	<u>M.J. Cooper</u> An Expanded Fish-Based Index of Biotic Integrity for Great Lakes Coastal Wetlands	<u>J.A. Choitti</u> The St. Clair - Detroit River System Initiative Science and Monitoring Strategy	<u>C.A. Stow</u> Lake Erie Hypoxia Forecasting for Public Water Systems Decision Support
10:20	<u>R.T. Ford</u> Quantifying Landsat's Ability to Monitor Cyanobacteria in the Great Lakes Region	<u>T.S. Seilheimer</u> Beware of Great Lakes ghost nets!	<u>N.W. Luymes</u> Use of Salamanders as Indicators of Ecological Effects of Climate Change in Southern Ontario Forests	<u>A.J. Turner</u> Thinking Outside the "Water Box" in the Detroit River Area of Concern	<u>M.J. Donahue</u> A Binational Rapid Response Plan for Aquatic Invasive Species
11:00	WELCOME & PLENARY , Cobo Ambassador				
12:00	LUNCH (on your own)				

TUESDAY, MAY 16

251C	252A	252B	258	259	Ambassador	
Water Quality Modeling in Transboundary Lake and River Systems	Disease and Pathogens of the Great Lakes and Freshwater Ecosystems.	Lessons Learned and New Tools for Aquatic Habitat Restoration	Discoveries, Trends, and Implications of Chemicals in the Great Lakes	Urban Field Experiences for Research and Education	Restoring Great Lakes Areas of Concern	
<u>R.M. Hirsch</u> Weighted Regressions for Evaluating Progress in Nutrient Reduction in Western Lake Erie Tributaries	<u>L.N. Ivan</u> Can stocking vaccinated fish protect a Great Lakes fish population from infectious diseases?	<u>H.R. Ramage</u> Microhabitat Influence on Larval Fish Assemblages within Wetlands; Implications for Restoration	<u>T.F.M. Rodgers</u> Organophosphate Ester Transport, Fate and Emissions in Toronto, using the Multimedia Urban Model	<u>G.J. Norwood</u> Linking Applied Research and Management at Detroit River International Wildlife Refuge	<u>M.A. Koops</u> Ecosystem Responses to Eutrophication and Nutrient Control: A View from the Bay of Quinte	9:40
<u>E.A. Richards</u> The effects of wet and dry conditions on nutrient loads in the Red Assiniboine Basin	<u>M.R. Niner</u> Genetic and Geographic History of VHS Fish Virus in the Great Lakes	<u>A.C. Wagner</u> Engineering-Design Framework for the Implementation of Ecosystem Restoration Projects	<u>A. Salamova</u> Spatial and Temporal Trends of Particle Phase Organophosphate Ester Concentrations in the Atmosphere	<u>J.F. Chadde</u> Engaging Urban Detroit Teachers & Students in Natural Resource Stewardship	<u>M. Munawar</u> The structure and function of algal blooms in the Bay of Quinte, 2010-2011	10:00
<u>Y.C. Wang</u> Predicting CSO Discharges to Improve Watershed Modeling and Nutrient Load Estimates	<u>N.R. Gezon</u> Exploring the viral consortium of invasive quagga mussels in the Lake Michigan benthos	<u>C.L. Sidick</u> Classifying Habitat Units in the St. Marys Rapids with Hydrodynamic Modeling	<u>A. Li</u> Tracking Organic Chemical Pollution of Upper Great Lakes from Sedimentary Records	<u>Z.A. Miller</u> Engaging High School Students in Urban Wet Weather Flow Management	<u>M.A. Fitzpatrick</u> Eutrophication in Canadian Areas of Concern: A Comparative Assessment of Phytoplankton Dynamics	10:20
WELCOME & PLENARY, Cobo Ambassador						11:00
LUNCH (on your own)						12:00

TUESDAY, MAY 16

	250A	250B	250C	251A	251B
	Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes	Plastics Research in the Great Lakes: Identifying Gaps and Facilitating Collaboration	Using Bioindicators to Monitor Ecological Responses and Restoration Success	Keeping it Flowing: Science and Research In Connecting Channels of the Great Lakes	The Ecological and Managerial Impacts of Round Goby across the Great Lakes
1:20	<u>R.W. Sawtell</u> Near Real Time HABs Observations in Lake Erie Using a Lightweight Portable Radiometer	<u>P.L. Corcoran</u> Microplastics in Bottom Sediments of the Thames River, Ontario	<u>K.M. Keeler</u> Minnows, Madtoms, and Mudpuppies: Sensitive Species in Restored Habitats	<u>G. Pannunzio</u> Ongoing remediation within the Detroit River shows improvements while restoring beneficial uses	<u>M.S. Kornis</u> History of round goby invasion and ecological effects in the Laurentian Great Lakes
1:40	<u>R.A. Shuchman</u> Mapping Stamp Sand Erosion and Deposition in Keweenaw Bay with Hyperspectral Imagery and LiDAR Data	<u>L.M. Rios Mendoza</u> Small plastic particles with huge environment impacts in our freshwater systems	<u>M. Stapleton</u> A Case Study of Wildlife Response to Restoration of an Urban Landscape	<u>G. Kennedy</u> Use of a New Artificial Reef as Spawning Habitat by Lake Sturgeon in the Detroit River	<u>D.W. Hondorp</u> A perspective on the challenges and opportunities for field sampling of Round Goby
2:00	<u>R.A. Castañeda</u> Estimating fish densities using underwater cameras	<u>R. Knauff</u> Three-Dimensional Modeling of Plastic Transport in the Great Lakes	<u>P.L. Wigren</u> Adult Fish Response to Artificial Reefs Constructed in the St. Clair - Detroit River System	<u>R.D. Hunter</u> Pedigree Analysis Allows Assessment of Lake Sturgeon Reproduction Associated With Artificial Reefs	<u>B.C. Weidel</u> Round Goby's influence on Lake Ontario fish community and food-web dynamics

251C	252A	252B	258	259	Ambassador	
Great Lakes Acoustic Telemetry - from Ecology to the Restoration and Management of Fishes	Connecting Researchers to CSMI through IAGLR	Lessons Learned and New Tools for Aquatic Habitat Restoration	Discoveries, Trends, and Implications of Chemicals in the Great Lakes	#SocialGreat Lakes: Communicating Great Lakes Science through Social Media	Restoring Great Lakes Areas of Concern	
<u>L.A. Davis</u> Tracking a Big Fish in a Big Lake: Assessing Lake Sturgeon Movement in Eastern Lake Erie	<u>J.M. Adams</u> Overview of the State of the Great Lakes: Status and Trends	<u>C.J. Palmer</u> Quality Control Field Checks to Improve Project Quality for Aquatic Habitat Restoration	<u>Y. Zhang</u> Comparing the Removal Efficiency of 4-Nonylphenol by UV, Chlorination and Algae Cultivation	<u>S.R. David</u> Adapting Great Lakes science to social media: garish examples from the field	<u>E.K. Hinchey</u> Challenges and approaches to removing the Eutrophication or Undesirable Algae BUI	1:20
<u>S.T. Kessel</u> Movement behavior variability within a lake sturgeon (<i>Acipenser fulvescens</i>) population	<u>T.G. Nettesheim</u> Lake Superior 2016 CSMI Field Year Overview	<u>B.A. Dow</u> Assessment and Mapping of the Milwaukee Estuary Habitat	<u>S. Ponte Cabral</u> Toxicity of engineered carbon nanomaterials in benthic freshwater ecosystems	<u>T.S. Seilheimer</u> The @DrFishSG is in: improving the great lakes through #outreach and #scicomm	<u>K. Axness</u> Current Approach to the Lower Green Bay and Fox River AOC Eutrophication BUI	1:40
<u>T.E. Fendler</u> Trophic Ecology of Adult Lake Sturgeon Movement Groups in the Huron-Erie Corridor	<u>M.J. Hudson</u> Tributary and Hydrodynamic Influences on Nearshore Water Quality in Lake Superior's Chequamegon Bay	<u>B.C. Suedel</u> How the Corps is Increasing Habitat Value on Great Lakes Coastal Structures	<u>S.E. Hummel</u> Characterizing Contaminants of Emerging Concern in the Great Lakes Basin	<u>A.M.V. Fournier</u> #MORails #MOScience : Tweeting Live From The Field	<u>S.W. Pickard</u> Remediation of Sediments in the Ashtabula River Area of Concern (AOC) on Lake Erie	2:00

TUESDAY, MAY 16

	250A	250B	250C	251A	251B
	Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes	Plastics Research in the Great Lakes: Identifying Gaps and Facilitating Collaboration	Using Bioindicators to Monitor Ecological Responses and Restoration Success	Keeping it Flowing: Science and Research In Connecting Channels of the Great Lakes	The Ecological and Managerial Impacts of Round Goby across the Great Lakes
2:20	<u>C.M. Riseng</u> An ecological Classification for the Great Lakes: Using Ecological Variables to Map Aquatic Habitat	<u>R.E. McNeish</u> Sources of Microplastic Contamination in Lake Michigan and Interactions with Aquatic Biota	<u>J.L. Johnson</u> Northern Madtom (<i>Noturus stigmosus</i>) use of artificial reefs in the St. Clair - Detroit River System	<u>J.L. Loughner</u> Using multiple gear types to assess the fish community in the St. Clair - Detroit River System	<u>C.M. Pennuto</u> Nutrient Translocation by Round Gobies: Is it Significant to Lake Ontario Food Webs?
2:40	<u>G. Leshkevich</u> Great Lakes CoastWatch - New Data Sets and New Data Servers	<u>N. House</u> The Abundance of Microplastics in Forage Fish of Lake Ontario	<u>D. Mifsud</u> Assessment of the Mudpuppy: Conserving a Focal Species of the St. Clair-Detroit River System	<u>J.L.M. Hinderer</u> Water Quality, Habitat Restoration, and Invasive Sea Lamprey in the St. Clair River	<u>D.G. Field</u> Are Gobies the New but Benthic Alewives in Lake Huron?
3:00	<u>M.G. Billmire</u> Enabling Increased Sharing of Great Lakes Remote Sensing Data	<u>H.A. Barrett</u> The Effects of Plastic Pollution on Zooplankton	<u>S.D. Ritchie</u> Overwintering Ecology of Head-started <i>Emydoidea blandingii</i> Turtles in an Artificial Wetland	<u>B.P. Coyle</u> Diet and Growth of Larval Fishes in the St. Clair-Detroit River System	<u>T.P. O'Brien</u> Age and Growth of Round Gobies in Lake Huron: Implications for Food Web Dynamics
3:20	BREAK				

TUESDAY, MAY 16

251C	252A	252B	258	259	Ambassador	
Great Lakes Acoustic Telemetry - from Ecology to the Restoration and Management of Fishes	Connecting Researchers to CSMI through IAGLR	Lessons Learned and New Tools for Aquatic Habitat Restoration	Discoveries, Trends, and Implications of Chemicals in the Great Lakes	#SocialGreat Lakes: Communicating Great Lakes Science through Social Media	Restoring Great Lakes Areas of Concern	
<u>N.V. Klinard</u> Post-stocking Behaviour, Habitat Use, & Survival of Hatchery-Reared Bloated Using Acoustic Telemetry	<u>T.P. Hollenhorst</u> Eutrophication Monitoring for Lake Superior's Chequamegon Bay - Before and After Large Summer Storms	<u>E.J. Geisthardt</u> A Novel Ecosystem at a Modified Boulder Breakwall	<u>M.E. Brigham</u> Identifying Mixtures of Emerging Contaminants Representative of U.S. Great Lakes Tributaries	<u>J.M. Lajavic</u> Using Social Media from a Field Office Perspective to Engage the Public with Fisheries Science	<u>L.A. Richman</u> Contaminated Sediment Management In Canadian AOCs: Bringing us Closer to Restoration and Delisting	2:20
<u>S.M. Larocque</u> Understanding movement of adult stocked Atlantic Salmon in a Lake Ontario tributary	<u>T.J. Holda</u> Seasonal and spatial patterns in <i>Mysis diluviana</i> in Southern Lake Michigan during 2015	<u>S.J. Faust</u> Fish and Wildlife Habitat Restoration for the St. Clair River	<u>H.L. Schoenfuss</u> CECs in Great Lakes Tributaries Alter Reproductive Potential in Resident and Lab Exposed Fish	<u>J.E. Rutter</u> Using Social Media at Scientific Conferences, A Case Study of NAOC 2016	<u>M.L. Tuchman</u> US EPA's Great Lakes Legacy Act: 12 Years of Progress Remediating Contaminated Sediments at AOCs	2:40
<u>J.T. Ives</u> Feasibility of Electro-sedation as an Alternative to Chemical Sedation of Lake Trout	<i>CSMI and State of Lake Panel Discussion</i>	<u>N. Kalejs</u> An Assessment of Reef Restoration Potential in Saginaw Bay, Lake Huron	<u>A.P. Jacob</u> Great Lakes Mussel Watch: Initiation of Effects based Monitoring of Contaminants of Emerging Concern CANCELED	<u>A.K. Neubauer</u> Tweeting at Sea: Bringing Science and Life on a Research Vessel Back to Shore	<u>K.G. Drouillard</u> Sediment contamination in the Huron-Erie Corridor and linkages to AOC beneficial use impairments	3:00
BREAK						3:20

TUESDAY, MAY 16

	250A	250B	250C	251A	251B
	Insights into Mechanisms of Ecological Change from Cross-Lake Comparisons	Plastics Research in the Great Lakes: Identifying Gaps and Facilitating Collaboration	Big Data for Great Lakes Decision-Making	Keeping it Flowing: Science and Research In Connecting Channels of the Great Lakes	The Ecological and Managerial Impacts of Round Goby across the Great Lakes
3:40	<u>R.P. Barbiero</u> A Comparative Survey of the Lower Food Web Across the Laurentian Great Lakes	<u>S. Grigorakis</u> Effect of microplastics on dietary assimilation efficiency of PCBs by fish	<u>T.A.D. Slawecki</u> Defining Big Data for the Great Lakes	<u>D.K. Castle</u> What'dya Catch?: An introduction to a research project analyzing creel survey data in the SCDRS.	<u>K.L. Jonasen</u> Competitor, Prey Item, or Both: Exploring Costs and Benefits of Round Goby to Juvenile Yellow Perch
4:00	<u>E.S. Osantowski</u> Analysis of long-term water quality trends across open waters of the Great Lakes from 1983	<u>T.O. Höök</u> Meta-analysis of effects of microplastics on aquatic organisms	<u>B. Huberty</u> Wetland Identification and Change Detection using Multi-sensor, Multi-frequency Remote Sensing	<u>R. Rozon</u> Assessment of the Phytoplankton and Zooplankton Populations in the Niagara River Area of Concern	<u>J.L. Jonas</u> The ever changing prey of lake trout in Lake Michigan
4:20	<u>K.A. Meyer</u> Particulate Nutrients in the Great Lakes: Analyzing a 20-year dataset	<u>S.E. Lowe</u> Progress Summary of the Great Lakes Marine Debris Action Plan	<u>O.C. Gates</u> The Great Lakes Adaptation Data Suite: Evaluating the Utility of a Data Suite for the Great Lakes	<u>K. Mehler</u> The Niagara River from a benthic perspective: What has been done and what needs to be done	<u>D.B. Bunnell</u> The relative importance between round goby and alewife effects on Lake Michigan salmonines

TUESDAY, MAY 16

251C	252A	252B	258	259	Ambassador	
Great Lakes Acoustic Telemetry - from Ecology to the Restoration and Management of Fishes	Connecting Researchers to CSMI through IAGLR	Lessons Learned and New Tools for Aquatic Habitat Restoration	Discoveries, Trends, and Implications of Chemicals in the Great Lakes	#SocialGreat Lakes: Communicating Great Lakes Science through Social Media	Restoring Great Lakes Areas of Concern	
<u>S.F. Colborne</u> Fish Movement in Urban Ecosystems: Using Acoustic Telemetry to Monitor Fish in the Detroit River	<u>C. Cook</u> State of Lake Michigan Fall 2017 Conference	<u>J.L. Fischer</u> Physical Maturation of Artificial Reefs in the St. Clair-Detroit River System	<u>R. Seth</u> Advanced Treatment of Secondary Treated Municipal Wastewater in the Great Lakes Region	<u>K.E. O'Reilly</u> It's Beginning to Look a Lot Like #25DaysofFishmas: #Scicomm through Education and Entertainment	<u>T. Theysmeyer</u> 20 Years of Progress Restoring River Mouth Marshes in the Hamilton Harbour AOC	3:40
<u>L.K. Peterson</u> Evaluating Mortality Estimation Methods Using Simulated Acoustic Telemetry Data	<u>A.S. Trebitz</u> Spatial and temporal water quality patterns in open-water Lake Michigan from the 2015 CSMI	<u>J.E. Marsden</u> Long-Term Assessment of the Physical Integrity and Biotic Colonization of Artificial Reefs	<u>J.L. Newsted</u> Effects of bis(2,4,6-tribromophenoxy) ethane (BTBPE) in Mink (<i>Mustela vison</i>)	<u>C.J. Foley</u> Birth and success of the @TwoYellowBuoys Twitter account	<u>J.H. Hartig</u> Habitat rehabilitation in the Detroit River Area of Concern	4:00
<u>A.B. Bade</u> Using Knowledge of Sex-Specific Reproductive Behavior to Inform the Management of Lake Erie Walleye	<u>P. Glyshaw</u> Potential effects of UV radiation on vertical distribution of zooplankton in Southeast Lake Michigan	<u>R.M. Claramunt</u> The Next Frontier in Great Lakes Fisheries Habitat: Building Criteria for Spawning Reef Restoration	<u>J. Guo</u> Mass Balance Study of Lake Michigan for Polychlorinated Biphenyls in 2010-2015	<u>E.T. Spencer</u> Digital Media as a Tool to Inspire Participation in Invasive Species Management	<u>M.M. Child</u> Binational Areas of Concern - Symmetry or Solitude?	4:20

TUESDAY, MAY 16

	250A	250B	250C	251A	251B
	Insights into Mechanisms of Ecological Change from Cross-Lake Comparisons	Plastics Research in the Great Lakes: Identifying Gaps and Facilitating Collaboration	Big Data for Great Lakes Decision-Making	Keeping it Flowing: Science and Research In Connecting Channels of the Great Lakes	The Ecological and Managerial Impacts of Round Goby across the Great Lakes
4:40	<u>A.J. Bramburger</u> Size matters: Intra-generic relative abundance change in Great Lakes planktonic diatoms	<u>C.S. Harris</u> Plastics Producers Solutions on Marine Litter: 2016 Progress Report	<u>S.S. Qian</u> A Risk Forecasting Model of Cyanobacterial Toxin for Western Lake Erie	<u>D. Gorsky</u> The Lower Niagara River: breeding grounds of native species recovery in western Lake Ontario.	<u>N.E. Dobiesz</u> What we know, don't know, and need to know about round gobies in the Great Lakes
5:00		<i>Microplastics in the Laurentian Great Lakes: Facilitated Discussion</i>			

TUESDAY, MAY 16

251C	252A	252B	258	259	Ambassador	
Great Lakes Acoustic Telemetry - from Ecology to the Restoration and Management of Fishes	Connecting Researchers to CSMI through IAGLR	Lessons Learned and New Tools for Aquatic Habitat Restoration	Discoveries, Trends, and Implications of Chemicals in the Great Lakes	#SocialGreat Lakes: Communicating Great Lakes Science through Social Media	Restoring Great Lakes Areas of Concern	
<u>C.M. Holbrook</u> A Passively Transported Receiver System to Improve Spatial Monitoring of Telemetry-Tagged Fishes	<u>H. Carrick</u> Plankton dynamics in Lake Michigan along a near to offshore gradient in Lake Michigan	<i>Panel Discussion: Common challenges and successful techniques for fish habitat restoration</i>	<u>N.R. Urban</u> Spatial and Temporal Variability in PCB Concentrations in Lake Trout from Lake Superior	<u>A.R. Voglesong</u> From Message to Method: What Data Does Your #SciComm Need?	<u>J.J. Ridal</u> The tri-national St. Lawrence River AOC (Canada, Akwesasne, USA): Paramount importance of community	4:40
		<i>Discussion continued</i>	<u>E.W. Murphy</u> Mean Deviation Ratio: A Novel Approach to assessing multiple Chemicals in Great Lakes Whole Fish	<u>N.J. Wood</u> Live streaming your science: The engaging platforms of Periscope and FacebookLive	<u>J.G. Read</u> Governance and Coordination in a Bi-national AOC: the St Clair and Detroit River AOCs as case study	5:00

WEDNESDAY, MAY 17

	140B	250A	250B	250C	251A	251B
	Restoring Great Lakes Areas of Concern	Insights into Mechanisms of Ecological Change from Cross-Lake Comparisons	Fitting Dynamic Models to Time-Series Data	Invasive Dreissenid Mussels: Ecology, Impacts, and Management	Protecting & Restoring Urban Watersheds: Using Green Infrastructure to Reduce Urban Runoff	Pathways for Invasions into the Great Lakes: Detection, Monitoring, and New Technology
8:00	<u>C. McLaughlin</u> Remedies for improved development and implementation of Remedial Action Plans in the Great Lakes	<u>A.E. Scofield</u> A cross-lake comparison of trends in deep chlorophyll layers from 1996 to 2016	<u>J.R. Bence</u> Fitting Dynamic Models to Time-series of Data: Musings About Current Approaches and the Future	<u>C. Shen</u> Regulation of plankton and nutrient dynamics by profundal quagga mussels in Lake Michigan: A one dim	<u>M.E. Gueguen</u> Project STREAMS Green Infrastructure CANCELED	<u>A.R. Mahon</u> Population genomics of invasive species in the Great Lakes and beyond
8:20	<u>G. Krantzberg</u> Assessing governance capacity for nearshore zones and AoCs	<u>G.J. Warren</u> Are Inputs from Large Bays Important to Whole Lake Productivity?	<u>F. Zhang</u> Decadal Variation in Stock-recruitment Relationships of Lake Erie Yellow Perch	<u>K.A. Bockwoldt</u> Quantifying Phytoplankton Production in Post-dreissenid Lake Michigan	<u>J.L. Isaac</u> Stormwater Fees: Reforming Ontario Stormwater Management Funding Model	<u>J.K. Connolly</u> Non-Native cyclopoid copepod (<i>Thermocyclops crassus</i>) detected in Lake Erie
8:40	<u>N.T. French</u> Creative Financing: Implementing the St. Louis River Area of Concern Remedial Action Plan in MN	<u>D.J. Jude</u> Trends in <i>Mysis diluviana</i> Abundance in the Great Lakes, 2006-2016	<u>J.M. Syslo</u> Accounting for Escapement Quality in a Stock-Recruit Model for Yukon River Chinook Salmon	<u>H.J. Kane</u> Using Stable Isotopes to Determine the Effects of the Nearshore Shunt on the Lake Michigan Food Web	<u>D. Green</u> Measuring the Difference, Targeting Green Infrastructure in Great Lakes Shoreline Cities	<u>E.A. Whitmore</u> Planning for the Detection of invasive zooplankton in the Great Lakes using DNA barcoding.
9:00	<u>R.K. Sherman</u> Severn Sound RAP the friendly little monster	<u>K.E. Kovalenko</u> Cross-lake comparisons of multi-assembly breakpoints: the GLNPO story	<u>Z.S. Su</u> Bayesian Hierarchical Modeling A modern approach for fisheries modeling	<u>J.M. Majarreis</u> Water Quality Parameter Variability in Relation to Near-Bed Processes in the Lake Erie Nearshore CANCELED	<u>R.J. Haefner</u> Stormwater Reduction from Green Infrastructure through Collaborative USEPA and USGS Research	<u>C.S. Meredith</u> Characterizing Lake Superior Zooplankton Communities Using Occupancy Modeling and DNA-based ID
9:20	BREAK					

WEDNESDAY, MAY 17

251C	252A	252B	258	259	
Physical Processes in Lakes	How Do We Get There from Here? Application of Models to Inform Water Quality Management	Real-Time Monitoring of Source Water Quality	Advances in Molecular Methods and their Impact on Management of the Great Lakes	Harmful Algal Blooms (HABs) from Watershed Influence to Ecosystem Effects	
<u>L. Leon</u> Multi-year lake modelling effects of climate change in Lake Erie	<u>S.P. Sowa</u> Complementary Role of Science, Models, and Decision Tools in Helping Achieve Sustainable Agriculture	<u>A.E. Mangus</u> Source Water Monitoring for Public Health, Infrastructure and Water Resource Goals	<u>K.T. Scribner</u> Anthology of genetic laboratory and analytical methods applied to Great Lakes aquatic research	<u>E.A. Berg</u> Trade-offs Between Ecosystem Restoration and Biodiversity Maintenance in Lake Erie Coastal Wetlands	8:00
<u>M.D. Rowe</u> Modeling Dissolved Oxygen Dynamics Near Drinking Water Intakes in the Central Basin of Lake Erie	<u>N. Aloysius</u> Drivers of nutrient hotspots in agriculturally dominated watersheds	<u>M. Selzer</u> Detroit Regional Source Water Monitoring Data Platform	Previous Presentation Continued	<u>C.S. Tan</u> Innovative drainage water management strategies to reduce nutrient loading	8:20
<u>N. Hawley</u> Time series measurements of ice thickness in Lake Erie, 2010-2011	<u>N.B. Basu</u> Nutrient legacies in anthropogenic catchments: implications for water quality	<u>S. Robicheau</u> A Review of Ontario's Source Protection Planning Program 10 years into the Clean Water Act	<u>M.H. Meek</u> Genomics to the Rescue--Improving Conservation of Imperiled Fish Populations	<u>C.M. Long</u> Impacts of Concentrated Animal Feeding Operations and Manure on Nutrient Inputs in a Watershed	8:40
<u>R. Valipour</u> Sediment re-suspension by high-frequency linear internal waves in the Great Lakes	<u>M. Abouali</u> Watershed-level Evaluation of Wetland Implementation Strategies on Phosphorus Reduction	<u>V. Paul Marshall</u> Online Volatile Organic Contaminant Monitoring: Huron to Erie Corridor	<u>J.M. Daley</u> Developing DNA Science and its Potential Impact on Management and Compliance	<u>S. Mishra</u> Relationships Between Field and Satellite Estimates of Cyanobacterial Bloom Severity in Western Lake	9:00
BREAK					9:20

WEDNESDAY, MAY 17

	140B	250A	250B	250C	251A	251B
	Restoring Great Lakes Areas of Concern	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management	Fitting Dynamic Models to Time-Series Data	Invasive Dreissenid Mussels: Ecology, Impacts, and Management	Great Lakes Outreach and Education	Pathways for Invasions into the Great Lakes: Detection, Monitoring, and New Technology technology
9:40	<u>K. Cave</u> The Rouge River AOC - A Multi-Year, Multi-Level Successful Approach to AOC Restoration	<u>M.N. Mohamed</u> Eutrophication in the Laurentian Great Lakes basin, past, present, and future	<u>M.R. DuFour</u> Estimating Detroit River larval walleye export with a Bayesian hierarchical state-space model	<u>V.L. Langen</u> The effects of invasive dreissenid mussels on the offshore foodwebs of Lake Simcoe, Ontario.	<u>H.M. Domske</u> Center for Great Lakes Literacy: An Engaged Network of Educators, Scientists, and Students	<u>C.A. Stepien</u> Population Genetic Characterization of the Silver Carp Invasion Front Approaching the Great Lakes
10:00	<u>M. Rich</u> Sustaining Stewardship and Community Engagement after Delisting the Collingwood Harbor AOC	Previous Presentation Continued	<u>J.A. Marino</u> Fitting models to field time series data to quantify <i>Bythotrephes</i> effects in Lake Michigan	<u>A.Y. Karatayev</u> <i>Dreissena</i> Growth Variation in Time and Space: Lessons from Lake Erie	<u>K.M. TePas</u> Inspiring a New Generation of Aquatic Scientists!	<u>M.R. Snyder</u> High-Throughput eDNA Assay to Assess Invasive Goby Species and Population Genetic Diversity
10:20	<u>J.C. Hoffman</u> Remediation to Restoration to Revitalization - A Path Forward for AOCs?	<u>A.J. Reisinger</u> Natural and anthropogenic disturbances affect water quality of Great Lakes coastal wetlands	<u>R. Clark</u> Using Predator-Prey Ratio to Manage a Balance between Chinook Salmon and Alewives in Lake Michigan	<u>A.K. Elgin</u> Quagga Mussel Body Condition and Size Distribution Inform Recent Lake Michigan Population Trends	<u>S.A. Waters</u> Place-based Stewardship Education and Citizen Science: A Powerful Partnership in Northeast Michigan	<u>M.R. Scheppler</u> Identifying Species from Bait Shops: Potential Vectors for Invasives in the Great Lakes?
10:40	<u>K.M. Evans</u> Planning for Life After Delisting for the Muskegon Lake Area of Concern	<u>J.V. Klump</u> The potential biogeochemical Impact of impoundments in the Green Bay watershed	<u>R.J. Sorichetti</u> Time-Frequency Analysis Reveals Physical, Chemical, and Climate Drivers of Changing Algal Dynamics	<u>D.R. Kashian</u> Effects of cyanobacteria on quagga mussel (<i>Dreissena rostriformis bugensis</i>) reproduction	<u>C.A. Hagley</u> Shipboard Experiences Unite Scientists with Educators and Decision-Makers for Lasting Impacts	<u>N.T. Marshall</u> Evaluating Genetic Diversity of Dreissenid Mussel Communities with High-Throughput Sequencing

WEDNESDAY, MAY 17

251C	252A	252B	258	259	
Physical Processes in Lakes	How Do We Get There from Here? Application of Models to Inform Water Quality Management	A Tribute to Jim Diana and his Influence on Great Lakes Research and Management	Advances in Molecular Methods and their Impact on Management of the Great Lakes	Harmful Algal Blooms (HABs) from Watershed Influence to Ecosystem Effects	
<u>L.S. Reisinger</u> The influence of water currents on community and ecosystem dynamics in coastal Lake Michigan	<u>B. Kerkez</u> Toward the autonomous management of water quality through real-time sensing and control	<u>D.F. Clapp</u> A Finger on the Pulse of Fisheries: Making Connections Through Space and Time	<u>T. Krabbenhoft</u> Transcriptomics identifies genes associated with functional differences among Great Lakes ciscoes	<u>L.A. Molot</u> Cyanobacteria N ₂ fixation: Review of benchtop studies and implications for N removal programs	9:40
<u>E.J. Anderson</u> Development of the Next-Generation Lake Michigan-Huron Operational Forecast System (LMHOFS)	<u>M.R. Herman</u> Stream Health Based Optimization of Best Management Practice Implementation	<u>M.J. Diana & C.M. Crissman</u> Jim Diana and his influence on the next generation of fisheries science.	<u>W. Stott</u> Historic and Contemporary Genetic Diversity of Lake Erie Cisco, <i>Coregonus artedii</i>	<u>K.A. Meyer</u> The impact of nitrogen form and availability on the toxicity of <i>Microcystis</i> blooms in Lake Er	10:00
<u>A. Linares</u> Role of meteorologically-induced water level oscillations on Contaminated Sediment Transport	<u>M.W. Gitau</u> Perspectives on Modeling Watershed Water Quality Responses and Best Management Practice Effects	<u>P.W. Seelbach</u> Reflections from Jim Diana's first graduate student	<u>W.A. Larson</u> Developing a Rapture panel to investigate genetic diversity in cisco across the Great Lakes region	<u>J.A. Myers</u> Effects of Nitrogen Loading on Denitrification and Nitrous Oxide Production in a Coastal Wetland	10:20
<u>D.J. Cannon</u> Examining the Importance of Stratification and Unsteadiness in Law-of-the-Wall Velocity Scaling	<u>J.F. Martin</u> Projection and Adoption of Management Plans to Reduce Lake Erie's Harmful Algal Blooms	<u>J.G. Mychek-Londer</u> Diet overlap, egg predation, digestion and recruits among deep offshore benthic Lake Michigan fishes	<u>T.E. Pitcher</u> Major histocompatibility complex variation among alternative reproductive tactics of Chinook salmon	<u>S.E. Newell</u> Water column ammonium dynamics in two large, eutrophic, freshwater lakes: Lakes Taihu and Okeechobee	10:40

WEDNESDAY, MAY 17

	140B	250A	250B	250C	251A	251B
	Restoring Great Lakes Areas of Concern	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management	Fitting Dynamic Models to Time-Series Data	Invasive Dreissenid Mussels: Ecology, Impacts, and Management	Great Lakes Outreach and Education	Pathways for Invasions into the Great Lakes: Detection, Monitoring, and New Technology
11:00	<i>Restoring Great Lakes Areas of Concern: Lessons and Challenges</i>	<u>L.P. Moore</u> Nutrient limitations in Great Lakes coastal wetlands: gradients and their influence	<u>A.J. Dennhardt</u> Spatiotemporal Factors and their Impacts to Lake Huron Fish Communities	<u>A.G. Boegehold</u> Impacts of cyanobacteria on quagga mussel spawning and veliger mortality	<u>M. Kitson</u> Using Mentoring Aboard a Tall Ship to Foster a Great Lakes Education Community of Practice	<u>J.J. Davis</u> Effects of barge vessel transit on the efficacy of the CSSC Electric Dispersal Barrier
11:20	<i>Discussion Continued</i>	<u>T. Maavara</u> Spatiotemporal drivers of Si:P stoichiometry in the Grand River Watershed, Ontario, Canada	<u>M.T. Vincent</u> Analysis of a Four Region Tag-Integrated Catch-at-Age Model that estimates Natural Mortality	<u>H.A. Vanderploeg</u> Food-web impacts of Dreissena are Context-dependent: Mapping out a New Research Agenda	<u>J.H. Vail</u> Great Lakes Public Engagement through Shipboard Programs	<u>P.A. Bzonek</u> Responses of Common Carp to Acoustic and Strobe-Light Behavioural Barriers in a Lab and Mesocosm
11:40	<i>Discussion Continued</i>	Previous Presentation Continued	<u>Y. Li</u> A Comprehensive Framework for Modeling Spatial Tag-Recovery Data With Different Movement Assumptions	<i>Discussion: Physiology and ecology of dreissenid mussels: adaptation, impacts, and control</i>	<u>Y. Vadeboncoeur</u> Bringing the science of communication to communicating science: an evaluation of an outreach product	<u>C.N. Brooks</u> Using advanced mapping tools to help monitor Eurasian watermilfoil for improved treatment options
12:00	BUSINESS LUNCH					

WEDNESDAY, MAY 17

251C	252A	252B	258	259	
Physical Processes In Lakes	How Do We Get There from Here? Application of Models to Inform Water Quality Management	A Tribute to Jim Diana and his Influence on Great Lakes Research and Management	Advances in Molecular Methods and their Impact on Management of the Great Lakes	Harmful Algal Blooms (HABs) from Watershed Influence to Ecosystem Effects	
<u>C.D. Troy</u> Lateral dispersion of dye and drifters in the center of Lake Michigan	<u>K.J. Fermanich</u> How will (could?) changes in farmland management systems shape Green Bay water quality?	<u>J.R. Krieger</u> Development and Evaluation of A Habitat Suitability Models for Young Lake Sturgeon in the GLCCs	<u>K.T. Scribner</u> Hatchery Strain Contributions to Emerging Wild Lake Trout Populations in Lake Huron	<u>D.K. Hoffman</u> Water Column Ammonium Dynamics Affecting Harmful Cyanobacterial Blooms in Lake Erie	11:00
<u>P. Semcesen</u> Frequent hypoxic upwelling events in Hamilton Harbour driven by wind forcing	<u>J.J. Pauer</u> Great Lakes nearshore assessment: What would Goldilocks do?	<u>R.T. Young</u> Assessing the spatiotemporal distribution of larval Lake Sturgeon in the St. Clair River, Michigan	<u>M. Smith</u> Spatial Distribution of Naturally Produced Lake Trout from the Canadian Waters of Lake Huron	<u>K.R. Salk</u> Dramatic Shifts in Nitrogen Cycling in Sandusky Bay, Lake Erie: Effects on HABs and Nitrogen Loading	11:20
<u>L. Wen</u> Air-lake boundary layer and thermal conditions over Tibetan lakes CANCELED	<u>C. Huang</u> Hydrodynamics, Point Source Discharges and Water Quality in the Lake Ontario Nearshore		<u>A. Perreault-Payette</u> Parallelism in Morphological and Genomic Divergence among Lake Trout Ecotypes in Lake Superior	<u>A.R. Boedecker</u> Sediments as a nitrogen source or sink to Lake Erie: the roles of denitrification and N fixation	11:40
BUSINESS LUNCH					12:00

WEDNESDAY, MAY 17

	140B	250A	250B	250C	251A	251B
	Progress in Restoring Areas of Concern under the Great Lakes Restoration Initiative	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management	Fitting Dynamic Models to Time-Series Data	Big Lakes - Small World: Not all Great Lakes are Laurentian	Great Lakes Outreach and Education	Great Lakes Fish and Fisheries
1:40	<u>A. Ruszaj</u> Progress in Removing Beneficial Use Impairments in Waukegan Harbor Area of Concern	<u>J.P. Zarnetske</u> Water Flow, Not Carbon Sources Determines Organic Carbon Flux from U.S. Watersheds	<u>J.X. He</u> Time-varying Components in Stock Assessments: A Procedure for Selection of Statistical Options	<u>H.W. Paerl</u> Controlling cyanobacterial blooms in "great" lakes: Dual (N & P) nutrient reductions are needed	<u>I. Vouk</u> Online and Interactive Visualization Tools to Communicate Science	<u>L.R. Tessier</u> Gill Microenvironment Influences Lampricide Uptake and Clearance in Non-Target Fish
2:00	<u>J. Miller</u> Mapping Application for Lower Maumee River (MALMR) characterizes habitat for BUI removal planning	Previous Presentation Continued	<u>C. Zhou</u> Bayesian modeling of uncertainty in the natural mortality of statistical catch-at-age models	<u>H. Xu</u> The roles of external vs internal nutrient sources in Cyanobacterial bloom in Lake Taihu, China	<u>R.A. Sturtevant</u> Stakeholder Engagement in a Wicked World: Crude Oil Transport in the Great Lakes Region	<u>C.J. White</u> Forensic Markers of Lampricide Toxicity
2:20	<u>J. Burton</u> Innovative Project Management Produces Results	<u>F.C. Cheng</u> Biogeochemical Hotspots: Role of Small Water Bodies on Regional Nutrient Processing	<u>S.B. Truesdell</u> A comparison of catch-at-age and catch-at-size fish stock assessment models	<u>G.W. Zhu</u> Challenge of extreme weather on cyanobacterial bloom control in Lake Taihu, China	<u>E. Waisanen</u> Supporting Conservation and Decision-Making in the Northwoods: Mapping Values, Services, and Threats	<u>S.L. Hepditch</u> The influence of water chemistry on the uptake of the lampricide TFM by lake sturgeon

WEDNESDAY, MAY 17

251C	252A	252B	258	259	
Physical Processes in Lakes	How Do We Get There from Here? Application of Models to Inform Water Quality Management	A Tribute to Jim Diana and his Influence on Great Lakes Research and Management	Advances in Molecular Methods and their Impact on Management of the Great Lakes	Harmful Algal Blooms (HABs) from Watershed Influence to Ecosystem Effects	
<u>C.H. Wu</u> Freak Waves in the Apostle Islands, Lake Superior: Characteristics and Occurrence	<u>E.M. Verhamme</u> Towards Operational Modeling of Great Lake Embayments: A2EM	<u>J.K. Nohner</u> Muskellunge Spawning Habitat: Reviewing Twenty Years of Research in the Jim Diana Lab	<u>T.J. Krabbenhoft</u> Population Genomics of Invasive Sea Lamprey (<i>Petromyzon marinus</i>) in the Laurentian Great Lakes	<u>R.M.L. McKay</u> An Early Onset and Highly Toxic Cyanobacterial Bloom in the Maumee River (OH)	1:40
<u>D.T. Titze</u> Sensitivity of Great Lakes Ice Cover to Air Temperature	<u>L.J. Gloege</u> The Fate of Tributary Loads to Lake Michigan	<u>T.G. Zorn</u> Hydrologic influences on fish and Jim Diana's influence on two biologists	<u>N.M. Sard</u> Testing vectors to explain how Round Goby colonized inland lakes and rivers using genomics data	<u>H. Zhang</u> Modeling succession of algal functional groups associated with Lake Erie harmful alga blooms	2:00
<u>G. Fai</u> Formation of a wind-drive cross-shelf sediment plume in a large lake	<u>A.H. Hendricks</u> Model Validation as A Critical Component for the Management of Mercury Contamination in Lakes	<u>K.M. Keeler</u> Great Lakes Bowls and Bioenergetics: Experiences Across Outreach and Research	<u>A.W. Wicks</u> Gene expression variation in round goby and Johnny darter in two Southeast Michigan streams	<u>D.S. Derminio</u> Impacts of Hydrogen Peroxide on the Growth of Cyanobacteria and Chlorophytes	2:20

WEDNESDAY, MAY 17

	140B	250A	250B	250C	251A	251B
	Progress in Restoring Areas of Concern under the Great Lakes Restoration Initiative	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management	Fitting Dynamic Models to Time-Series Data	Big Lakes - Small World: Not all Great Lakes are Laurentian	Great Lakes Outreach and Education	Great Lakes Fish and Fisheries
2:40	<u>A.R. Meyer</u> Clinton River Area of Concern: Lessons Learned During Design of Four GLRI Projects	<u>Y. Audette</u> An understanding of legacy P in sediments - chemistry of P forms influenced by agricultural practice	<u>I. Tsehaye</u> Sensitivity of Green Bay lake whitefish catch-at-age model estimates to gear selectivity assumptions	<u>C. Guo</u> The Extreme Weather Event Induced Microcystis Blooms in Qiantang River, China	<u>S.A. Orlando</u> Do Your PART: A Coastal Storms Preparation, Adaptation, and Response Tool for Great Lakes Marinas	<u>R.A. Ionescu</u> A Pathophysiological Study on the Effects of TFM on Lake Sturgeon (<i>Acipenser fulvescens</i>)
3:00	<u>S. Lovall</u> Habitat Restoration in the Detroit River Area of Concern	<u>K.J. Van Meter</u> Nitrogen-Phosphorus Ratios: Hysteresis Effects and Long-Term Trajectories in the Grand River Watersh	<u>N.C. Fisch</u> A sex-specific, integrated statistical catch at age model applied to Cisco in Thunder Bay, Ontario.	<u>L. Yu</u> The dynamics of toxic cyanobacteria and microcystins and associations with environmental factors in... CANCELED	<u>M. Middlebrook Amos</u> The Environment Depends on You - You Depend on Quality Resources	<u>B.A. Parvizian</u> Determining Hexaboromocyclododecane and Tetrabromobisphenol concentration in fish tissues using LC-H
3:20	BREAK					

WEDNESDAY, MAY 17

251C	252A	252B	258	259	
Physical Processes in Lakes	How Do We Get There from Here? Application of Models to Inform Water Quality Management	A Tribute to Jim Diana and his Influence on Great Lakes Research and Management	Advances in Molecular Methods and their Impact on Management of the Great Lakes	Harmful Algal Blooms (HABs) from Watershed Influence to Ecosystem Effects	
<u>P.J. McKinney</u> Remote sensing and underwater glider observations of a springtime plume in western Lake Superior.	<u>A. Kuczynski</u> Development, Calibration, and Confirmation of the Great Lakes <i>Cladophora</i> Model v3	<u>K.E. Wehrly</u> Jim Diana's Contribution to the Michigan Department of Natural Resources	<u>J.M. Waraniak</u> Genetic diet analysis detects predation of larval lake sturgeon (<i>Acipenser fulvescens</i>)	<u>T.A. Tuttle</u> Understanding Drivers of Bloom Toxicity by Quantifying Toxic Strains of Planktothrix in Sandusky Bay	2:40
<u>A.J. Bechle</u> The 2014 Lake Superior Meteotsunami	<u>M.T. Auer</u> Setting Phosphorus Substance Objectives for <i>Cladophora</i> Management	<u>S.R. David</u> Regarding Jim Diana: Over a decade of fish research from the Great Lakes to Mexico	<u>K. Hilliard</u> Development of a TaqMan assay for the identification of Silver Chub in larval catch samples	<u>J.M.A. Stough</u> Discrimination of temperate vs lytic phage activity in <i>Microcystis</i> blooms using systems biology	3:00
BREAK					3:20

WEDNESDAY, MAY 17

	140B	250A	250B	250C	251A	251B
	Progress in Restoring Areas of Concern under the Great Lakes Restoration Initiative	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management	The Physical Systems of Large Lakes at Seasons to Millennia	Big Lakes - Small World: Not all Great Lakes are Laurentian	Improving Model Predictions through Coupled System and Data Assimilation	Great Lakes Fish and Fisheries
3:40	<u>K.N. Rice</u> Habitat Restoration of Two Former Celery Fields, Bear Creek, Muskegon Lake Area of Concern	<u>B. Negasi Isaac</u> Discourse around nutrients problem in western basin of Lake Erie	<u>B.M. Lofgren</u> Influence of Greenhouse Gas Concentrations on Lake Phenology and Temperature Profiles	<u>N. Tugyi</u> Phyto- and Bacterioplankton Production in a Shallow Central European Great Lake (Lake Fertő Hungary)	<u>Q. Liu</u> A Physical-Biogeochemical Simulation of Muskegon Lake	<u>U. Strandberg</u> Correlation Between Fish Omega-3 Levels And Consumption Advisories
4:00	<u>T.R. Naperala</u> Ecological Restoration of the Little Rapids Area of the St. Marys River	<u>S.A. Bocaniov</u> Nutrient dynamics, transport and retention in Lake St. Clair: Insights from three-dimensional model	<u>B. Music</u> Great Lakes Water Supply as simulated by the NA-CORDEX and Canadian Regional Climate Models	<u>G.S. Bullerjahn</u> Community Dynamics and Function of Algae and Bacteria During Winter in Central European Great Lakes	<u>H. Hu</u> Simulation of Phytoplankton Distribution and Variation in the Bering-Chukchi Sea using a 3D Physica	<u>A.M. McLeod</u> Their Lasting Legacy: Insights into Foodweb Ecology Using Contaminant Tracers
4:20	<u>M. Boote</u> Improving the Rouge River AOC - Fish and Wildlife Habitat Improvement through GLRI Funding	<u>T.N. Brown</u> A Nested Nearshore Nutrient Model (N ³ M) for Nearshore Condition Assessment and Management.	<u>K.M.L. Gaibisels</u> The effects of climate change on water level fluctuations in north temperate lakes	<u>T.J. Ted Lawrence</u> Capacity Building of Africa's Future Fresh Water Scientists, Managers, and Politicians: A Proposal	<u>Y. Hu</u> Toward a high-resolution model of urban phosphorus input into the Detroit River	<u>E.S. Rutherford</u> Have Invasive Species Caused Changes in Larval Fish Density and Distribution in SE Lake Michigan?

WEDNESDAY, MAY 17

251C	252A	252B	258	259	
Physical Processes in Lakes	How Do We Get There from Here? Application of Models to Inform Water Quality Management	Advances in Understanding and Management of Non-native Species along the Invasion Curve	Advances in Molecular Methods and their Impact on Management of the Great Lakes	Harmful Algal Blooms (HABs) from Watershed Influence to Ecosystem Effects	
<u>L. Ralahamill</u> Evaluating the flushing mechanisms in the nearshore of South-eastern Georgian Bay	<u>D.S. Francy</u> Statistical models for estimating levels of E. coli and microcystins in waters as management tools	<u>B.T. DeStasio</u> How to clean AIS from those waders and nets? Tests of effectiveness of decontamination techniques	<u>J.K. Ruzich</u> Genetic Assessment of Seven Fish Species Above and Below the Prairie du Sac Dam	<u>E.L. Hillis</u> Factors Regulating Primary Production in the Western Basin of Lake Erie	3:40
<u>B. Flood</u> Analysis of barotropic and baroclinic flushing process in two large Great Lakes embayments.	<u>N.F. Manning</u> Ecosystem Services of Lake Erie: Spatial Distribution and Concordance of Multiple Services	<u>M.S. Piskur</u> Regional Collaboration to Protect the Great Lakes and St. Lawrence River Against AIS	<u>E.J.H. Nelson</u> Comparison of Diets for Largemouth and Smallmouth Bass in Eastern Lake Ontario using DNA Barcoding	<u>T.K. Scholze</u> Impacts of Lake Erie Harmful Algal Blooms on Larval Fish Abundance and Walleye Year-Class Strength	4:00
<u>M.G. Wells</u> Investigating the water movements around a shallow shipwreck in Lake Huron.	<u>F. Daneshvar</u> Assessing Impact of Spatial Resolution on Stream Health Based Environmental Justice Models	<u>S.T. Stanton</u> Early Invasion Dynamics of New Zealand Mudsnaills in Michigan Rivers	<u>N. Schafer</u> qPCR: A Screening Tool For Harmful Algal Blooms	<u>L.E. Krausfeldt</u> The <i>mir</i> pathway for microcystin degradation may not be relevant in Lake Erie and Lake Tai	4:20

WEDNESDAY, MAY 17

	140B	250A	250B	250C	251A	251B
	Progress in Restoring Areas of Concern under the Great Lakes Restoration Initiative	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management	The Physical Systems of Large Lakes at Seasons to Millennia	Big Lakes - Small World: Not all Great Lakes are Laurentian	Improving Model Predictions through Coupled System and Data Assimilation	Great Lakes Fish and Fisheries
4:40	<u>M. Foose</u> St. Clair River AOC Habitat Restoration Sites	<u>A. Neumann</u> Probabilistic Assessment of Nutrient Export with SPARROW Model under Extreme Climate Regimes	<u>A. Fujisaki-Manome</u> Modeled ice thickness in Lake Erie with different parameterizations of the ice strength	<u>S. Jetoo</u> Comparison of Operationalizing the Ecosystem Approach in the Great Lakes and the Baltic Sea.	<u>U. Adhikari</u> Evaluating the wetland restoration scenarios for watershed-scale sediment reduction	<u>C. Cieciek</u> Internet-Based Larval Fish and Egg Taxonomic Key Resources for Freshwater and Marine Environments
5:00		<u>C.R. Farrow</u> Effects of river inputs on Phytoplankton Community Structure	<u>J.A. Kessler</u> Modeling the Great Lakes with FVCOM+UGCICE	<u>R.W. Sterner</u> Assessing the Ecosystem Services Provided by Earth's 21 largest lakes.	<u>J.J. Li</u> Relative importance of tissue growth rate on Hg and PCB dynamics in fish	<u>S. Needs-Howarth</u> Archaeological Evidence Indicates Alewife (<i>Alosa pseudoharengus</i>) is Native to Lake Ontario
6:00	POSTER SESSION & SOCIAL , Cobo River Atrium					

WEDNESDAY, MAY 17

251C	252A	252B	258	259	
Physical Processes in Lakes	How Do We Get There from Here? Application of Models to Inform Water Quality Management	Advances in Understanding and Management of Non-native Species along the Invasion Curve	Advances in Molecular Methods and their Impact on Management of the Great Lakes	Harmful Algal Blooms (HABs) from Watershed Influence to Ecosystem Effects	
<u>B. Hlevca</u> Observations and Numerical Modeling of the Exchange Flows between Toronto Harbour and Lake Ontario	<u>C.C. Wellen</u> Advancing Policy-Science Dialog Using models: An Example of Watershed Modeling in Ontario	<u>W.C. Kerfoot</u> Plague of Waterfleas (Bythotrephes): Impacts Cascade From Microcrustaceans to Planktivorous Fish	<u>D.K. Dila</u> Host-associated fecal indicators driven by hydrology, precipitation and watershed land use	<u>A. Zastepa</u> Deep-living layers of phytoplankton in oligo-mesotrophic Georgian Bay embayments CANCELED	4:40
	<i>Panel Discussion: Pulling it all together: Reflections on best practices for modeling that supports decision making</i>	<u>T. Heer</u> Preliminary Assessment of Asian Carp Spawning Potential in Canadian Tributaries to Lake Ontario	<u>K.N. Turnquist</u> Genetic Heritage of Naturally Produced Lake Trout in Lake Michigan		5:00
POSTER SESSION & SOCIAL , Cobo River Atrium					6:00

THURSDAY, MAY 18

	250A	250B	250C	251A	251B
	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management	The Physical Systems of Large Lakes at Seasons to Millennia	Big Lakes - Small World: Not all Great Lakes are Laurentian	Improving Model Predictions through Coupled System and Data Assimilation	Great Lakes Fish and Fisheries
8:00	<u>E. Sinha</u> Precipitation Dominates Interannual Variability of Riverine Nitrogen Loading Across the CONUS	<u>J. Wang</u> Seasonal forecast of Great Lakes ice cover using multi-variable regression and FVCOM+ice models	<u>M.J. McCarthy</u> Microbial nitrogen sinks in large lake sediments as an ecosystem service	<u>T. Baracchini</u> Coupling In-situ and Remote Sensing Data with Three Dimensional Hydrodynamic Models	<u>D.L. Larson</u> Factors Affecting Lake Sturgeon (<i>Acipenser fulvescens</i>) Spawning Migration in the Black River, MI
8:20	<u>Q. Zhang</u> Synthesis of Long-term Patterns of Nutrient and Sediment Export from the Chesapeake Bay Watershed	<u>J.A. Austin</u> Preliminary Measurements of Passive Acoustics in Lake Superior	<u>O. Anneville</u> Reducing phytoplankton diversity to understand ecosystem functioning: The Baroque in the Nature	<u>P. Xue</u> Improve Lake Erie Thermal Structure Predictions using Data Assimilative Hydrodynamic Model	<u>J.R. Hegna</u> Juvenile lake sturgeon downstream passage and survival at two hydroelectric dams
8:40	<u>J.D. Delvaux</u> Tributary Influence on the Biogeochemistry and Metabolism of Nearshore Lake Superior	<u>A.R. Kireta</u> Assessing Lake Superior Planktonic Diatom Distribution: Improving Paleolimnological Interpretations	<u>M. Lemaire</u> Sensitivity of lake food web structure and functioning to strong variations in fish abundances	<u>P. Chu</u> Towards an Integrated Environmental Modeling System for the Great Lakes	<u>J.D. Midwood</u> Short-term response of fish to a turbid river plume
9:00	<u>N.C. Feisthauer</u> Assessing Vulnerability of Lake Erie Landscapes to Soil Erosion: Modelled and Measured Approaches		<u>Y.C. Kao</u> Not all great lake fisheries are equally great in response to climate and land use changes	<u>X. Ye</u> Coupling a Regional Climate Model with a 3-D Hydrodynamic Model over the Great Lakes	<u>A. Perez-Fuentetaja</u> Importance of migratory forage fish in the workings of the Niagara ecosystem: the emerald shiner
9:20	BREAK				

THURSDAY, MAY 18

251C	252A	252B	258	259	Ambassador	
Physical Processes in Lakes	Bottom Mapping in the Laurentian Great Lakes: Physical, Biological and Cultural Features	Advances in Understanding and Management of Non-native Species along the Invasion Curve	Discoveries, Trends, and Implications of Chemicals in the Great Lakes	Progress in Restoring Areas of Concern under the Great Lakes Restoration Initiative	Lessons from the Frontiers in Science for Nutrient Reduction from Agriculture in the WLEB	
<u>B. Yang</u> High frequency observations of radiatively driven convection under winter ice in Lake Simcoe	<u>T.H. Hansen</u> Investigating the use of existing single-beam bathymetric data for sediment and biotope analysis	<u>E.M. Reed</u> Nearshore Zooplankton Communities in Lake Michigan and Implications for Asian Carp Establishment	<u>C.L. Zhou</u> Mercury temporal trends in top predator fish of the Laurentian Great Lakes from 2004 to 2015: are	<u>P. Evanoff</u> Detroit River AOC Projects on Belle Isle	<u>R. Wilson</u> The role of farmer efficacy in improving water quality	8:00
<u>A. Safaie</u> The importance of groundwater-lake interactions on stratification in a deep inland lake	<u>S.D. Pecoraro</u> Bottom-Type Classification of Multi-Year Acoustic Transects across Lakes Michigan and Huron	<u>H. Embke</u> A Bayesian Modeling Framework for Identifying Conditions Favorable for Grass Carp Spawning	<u>R.L. Lepak</u> Changes in Stable Isotope Composition in Lake Michigan Trout - a 40 year perspective	<u>R. Ellison</u> Determining Nature and Extent of Contaminated Sediment in a Large, Urban, High Flow Environment	<u>S. Gasteyer</u> Engaging Local Knowledge and Context: Farmers and Community Institutions in Watershed Management	8:20
<u>M. Stastna</u> Gravity currents near the four degree temperature maximum	<u>L.B. Bender</u> Find Your (Underwater) Park: Benthic Mapping in Great Lakes National Parks	<u>C. Harris</u> Tributary Use and Large-Scale Movement of Grass Carp in Western Lake Erie	<u>D.P. Krabbenhoft</u> Determination of MeHg Sources to Fish in the St. Louis River, MN, USA, using Hg Stable Isotopes	<u>J. O'Meara</u> Stony and Celeron Islands - Major Implementation of Habitat in the Detroit AOC Under GLRI	<u>K.R. Cronk</u> Overview of runoff risk forecasting tools under development in the Great Lakes Basin	8:40
<u>L. Boegman</u> High-resolution simulation of internal hydraulic jumps and solitary waves in Cayuga Lake	<u>C. Menza</u> Using LIDAR Surveys to Map Habitats and Archaeological Sites in Western Lake Michigan	<u>S. Avlijas</u> The Eurasian Tench (<i>Tinca tinca</i>): A globally invasive fish poised to invade the Great Lakes	<u>F. Yuan</u> Enhanced Transfer and Cycling of Trace Metals and Plant Nutrients in Lake Erie	<u>R.W. Darnton</u> Assessment of Contaminated Sediments in the Detroit River and Comparison with Historical Use Data	<u>J.B. Kast</u> Modeling the Impact of Manure Application Practices: Phosphorous Discharge from the Maumee Watershed	9:00
BREAK						9:20

THURSDAY, MAY 18

	250A	250B	250C	251A	251B
	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management	Application of Trophic Markers in Aquatic Ecology	Big Lakes - Small World: Not all Great Lakes are Laurentian	Improving Model Predictions through Coupled System and Data Assimilation	Great Lakes Fish and Fisheries
9:40	<u>M.E. Oudsema</u> Long-Term Monitoring of Phosphorus in a Grassroots Initiative to Improve and Restore a Watershed	<u>A. Happel</u> Consumption of Forage Fish Alters Fatty Acids of Brown Trout Eggs	<u>F. Soullignac</u> Assessing water quality of lakes: should lake monitoring consider spatio-temporal variability?	<u>V. Fortin</u> Towards a 30 years North American Precipitation and Land Surface Reanalysis	<u>B.P. O'Malley</u> Is diel vertical migration in Mysis related to body size?
10:00	<u>I. Ilampooranan</u> Modeling nitrogen legacies and time lags in agricultural landscapes using SWAT	<u>K.M. Irvin</u> Use of Fatty Acid Signatures to Explore the River Continuum Concept	<u>J.R. Ma</u> Three Gorges Reservoir: Has water quality improved in the 20 years since impoundment?	<u>N. Hawley</u> Developing a long-term database of water temperature measurements in the Great Lakes	<u>C.C. Slife</u> Life cycle durations among Finger Lakes mysid populations
10:20	<u>C.H. Ridenour</u> Nutrient Silicon Cycling in Hamilton Harbour Area of Concern (Ontario, Canada)	<u>A.N. Evans</u> Comparison of two trophic biomarkers to describe the diets of Great Lakes planktivorous fishes	<u>S.J. Guildford</u> Do nutrients or light control phytoplankton growth rates in Lake Taupo in winter?		<u>R.J. Johnson</u> Evaluating immune responses of emerald shiners (<i>Notropis atherinoides</i>) in the Niagara River
11:00	PLENARY, Ambassador Room				
12:00	LUNCH (on your own)				

THURSDAY, MAY 18

251C	252A	252B	258	259	Ambassador	
What Good does it do Me? Engaging Community Stakeholders in the Implementation and Valuation of Green Infrastructure	Innovative Observations and Emerging Technologies	Advances in Understanding and Management of Non-native Species along the Invasion Curve	Discoveries, Trends, and Implications of Chemicals in the Great Lakes	Progress in Restoring Areas of Concern under the Great Lakes Restoration Initiative	Lessons from the Frontiers in Science for Nutrient Reduction from Agriculture in the WLEB	
<u>M. Krug</u> Green Infrastructure and Community Revitalization: Opportunities in the Bowman Creek Watershed	<u>G. Cutrell</u> Enhancing Monitoring Capabilities with Technology Integration	<u>E.S. Chenery</u> Forecasting Secondary Spread of AIS in the Great Lakes Using Expert Opinion and Mechanistic Models	<u>S. Rakhimbekova</u> Effect of varying wave conditions on the mobility of arsenic in a nearshore aquifer on the Great Lak	<u>M. Loomis</u> Data Synthesis Tools for Evaluating Progress and Planning Restoration of Areas of Concern	<u>K. Jacobs</u> Putting A Price On Phosphorus: How On-Farm Actions Are Improving The Health Of The Great Lakes	9:40
<u>T.A. Formby</u> A Greenspace Vision in Southeast Michigan's Most Heavily Industrialized Area	<u>E.M. Houghton</u> Green Bay Water Quality Review: 30 Years of Monitoring	<u>J.M. Bossenbroek</u> Potential Spread of Hydrilla (<i>Hydrilla verticillata</i>) in the Great Lakes Basin	<u>K.L. Simon</u> Bald Eagles as Indicators of Historic and Emerging Contaminants in the Great Lakes	<u>M.B. Nevers</u> Tracking Contaminants, Delisting BUIs, and Restoring Ecosystem Services: Grand Calumet River AOC	<u>L.C. Young</u> Empowering Farmers and Partners of Agriculture with Strategic Online Conservation Tools	10:00
<u>E.S. Isely</u> Rainwater Rewards: Stormwater Green Infrastructure Ecosystem Services Calculator	<u>A.D. Weinke</u> Time-series and discrete data reveal dynamics and consequences of hypoxia in Muskegon Lake, Michigan	<u>C.J. Huckins</u> Eurasian Watermilfoil Response to Herbicide Control and Predictions of its Dispersal	<u>S.H. Yao</u> Comparison of contaminants in silver and bighead carp from Three Gorges Reservoir and Mississippi R.	<u>J.L. Kaster</u> Reintroduction of <i>Hexagenia</i> to Green Bay, Lake Michigan	<u>C.A. Toussant</u> Evaluating Agricultural Conservation Practices through edge-of-field monitoring in the Great Lakes	10:20
PLENARY, Ambassador Room						11:00
LUNCH (on your own)						12:00

THURSDAY, MAY 18

	250A	250B	250C	251A	251B
	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management	Application of Trophic Markers in Aquatic Ecology	Big Lakes - Small World: Not all Great Lakes are Laurentian	Regional Water Management: Development and Application of Modeling and Data for Decisions	Great Lakes Fish and Fisheries
1:20	<u>M.L. Macrae</u> Importance of Climate Drivers and Land Management Practices on Runoff and Phosphorus Losses	<u>L.Z. Almeida</u> Using morphology and trophic markers to indicate fish niche use in seasonally hypoxic lakes	<u>S. Sharma</u> On thin ice: are lakes feeling the heat?	<u>J. Allis</u> Great Lakes Water Management 101	<u>J.P. Holden</u> How Many Cisco are in Lake Ontario: Scaling Up Acoustics and Midwater Trawl Data
1:40	<u>W.R. Midden</u> Extremely High Dissolved Phosphorus from No-Till Fields without Fertilizer Incorporation	<u>P.M. Armenio</u> Comparing niche space overlap and trophic shifts between Lakes Michigan and Huron	<u>B.A. Hewitt</u> Effects of Climate Change on Lake Ice Freeze Up on Lakes Across the Northern Hemisphere	<u>A.F. Hamlet</u> Developing Flexible, Integrated Hydrologic Modeling Systems for Multiscale Analysis in the Midwest	<u>M.R. Pauve</u> Investigating Habitat Suitability for Cisco (<i>Coregonus artedii</i>) Spawning and Egg Incubation
2:00	<u>C.C. Wellen</u> A cross scale meta-analysis of the effectiveness of agricultural conservation measures	<u>H. Pettitt-Wade</u> Basin Specific Niche Partitioning of Lake Huron Lake Trout	<u>L.S. Lopez</u> The effects of climate change on lake ice break-up across the Northern Hemisphere	<u>L. Pei</u> Applying Climate Change Projections in Great Lakes Regional Water Management Decisions	<u>K. Broadway</u> Morphological Assessment of Cisco Populations in Lake Michigan and Connected Inland Waterways
2:20	<u>L.E. Oldfield</u> Geospatial model Estimating Phosphorus Loadings from Septic Systems to the Lake Erie Basin	<u>J. Trumpickas</u> 60 Years of Foodweb Change in South Bay, Lake Huron	<u>E.A. Silow</u> Temperature trends in Lake Baikal and ecosystem changes	<u>A.R. Erler</u> Coupling Regional Climate Projections with an Integrated Hydrologic Model to Assess Water Resources	<u>N.E. Saavedra</u> Quantifying Lake Ontario lake trout responses before, during, and after the Ponto-Caspian invasion

251C	252A	252B	258	259	Ambassador	
Lake Erie Harmful Algal Bloom Research Initiatives: Field to Faucet and Beyond	Innovative Observations and Emerging Technologies	Advances in Understanding and Management of Non-native Species along the Invasion Curve	Watershed and Coastal Sediment Processes: Where is it going?	Understanding Drivers of Benthic Community Condition in the Laurentian Great Lakes	Lessons from the Frontiers in Science for Nutrient Reduction from Agriculture in the WLEB	
J.L. Schnars Monitoring HABs in the Pennsylvania Waters of Lake Erie	C. Spence Ship-Borne Observations of Great Lakes Evaporation	A.J. Tucker Application of a Watch List to Inform AIS Surveillance in the Laurentian Great Lakes	D.K. Kim Determination of the best management practices in the Napanee River watershed using SWAT	L.E. Burlakova Developing Water Quality Indices Based on Great Lakes Benthos: Traditional and Modeling Approaches	J. Kelpinski Farmers choose MAEAP to Protect Water Quality	1:20
H.A. Raymond Use of a Multiplex qPCR Assay for HAB Monitoring in Ohio	M.R. Twiss Novel sensor deployments in a hydropower dam on the Saint Lawrence River	W.L. Chadderton A Spatially Explicit Method to Inform AIS Surveillance Site Selection in the Laurentian Great Lakes	F. Alighalehbabakhani Impacts of land use change and dam construction on sediment delivery to the Laurentian Great Lakes	S.E. Daniel The effect of <i>Dreissena</i> on sediment organic matter and Oligochaeta in the Great Lakes	K.L. Stammler Many Hands Lighten the Load: Working Together to Reduce Phosphorus Loss from Agricultural Landscapes	1:40
R.A. Read Microcystin ELISA: Comparison of the Manual Method vs. the Automated CAAS method	W.J.S. Currie Spatial discrimination of Toronto region zooplankton distributions using a towed sensor array	A.S. Briggs Update of an Early Detection and Monitoring Program for Non-native Fishes in Lake Erie	E.J. Theuerkauf Coupling Hydrodynamic Forces With Geomorphic Change Along the Illinois Lake Michigan Coast	B. Bodamer-Scarbro Factors Driving Population Density of Mayfly Nymphs in Western Lake Erie 1999-2014	J. Taylor TP Concentrations in Essex County Streams: Greenhouse Farming Impacts and Mitigation Strategies	2:00
P. Bertani Immuno-FET AlGaIn/GaN Biosensors for Microcystin Detection	A.R. Hrycik A comparison of FlowCam and microscopy methods for phytoplankton community assessment	N.M. Sard Comparing eDNA and traditional surveys of diversity and abundance: implications for invasive fishes	J. Barkach Preliminary Analysis of Watershed Sediment Delivery to 30 USACE Great Lakes Harbors	M.W. Wick Using National Coastal Condition Assessment Underwater Video to investigate nearshore substrate type	D.A. Schlea Assessing the Large-Scale Feasibility of Wetlands as Agricultural BMPs	2:20

THURSDAY, MAY 18

	250A	250B	250C	251A	251B
	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management	Application of Trophic Markers in Aquatic Ecology	Big Lakes - Small World: Not all Great Lakes are Laurentian	Regional Water Management: Development and Application of Modeling and Data for Decisions	Great Lakes Fish and Fisheries
2:40	<u>J.R. Smudde</u> A Utility Led Agricultural Based Adaptive Management Pilot Study in Silver Creek - Green Bay, WI	<u>G. Paterson</u> Ecological tracers indicate basin specific ecologies for the Lake Huron food web	<u>J.D. Lenters</u> Rapid Warming of the World's Large Lakes: Physical Mechanisms and Regional Perspectives	<u>L.K. Read</u> Current and Future Efforts in Development of Lake Accounting for the National Water Model	<u>M.S. Kornis</u> Post-release survival of lake trout stocked at four historical spawning sites in Lake Michigan, USA
3:00	<u>E.A. Kindervater</u> Phosphorus Retention in West Michigan Two-stage Agricultural Ditches	<u>B.A. Turschak</u> Effects of Ecology and Biogeochemistry on the Stable Isotopes of Nearshore Fishes in Lake Michigan	<i>Panel Discussion</i>	<u>H.W. Reeves</u> Incorporating groundwater dynamics into water management decisions in the Great Lakes	<u>C.T. Karboski</u> Lake Trout Behavior and Habitat Preference in Lake Ontario
3:20	BREAK				

THURSDAY, MAY 18

251C	252A	252B	258	259	Ambassador	
Lake Erie Harmful Algal Bloom Research Initiatives: Field to Faucet and Beyond	Innovative Observations and Emerging Technologies	Advances in Understanding and Management of Non-native Species along the Invasion Curve	Watershed and Coastal Sediment Processes: Where is it going?	Understanding Drivers of Benthic Community Condition in the Laurentian Great Lakes	Lessons from the Frontiers in Science for Nutrient Reduction from Agriculture in the WLEB	
<u>D. Isailovic</u> Developing methods for preconcentration and LC-MS quantification of microcystins in water and serum	<u>T.W. Davis</u> Combining advanced technologies to develop an early warning system for HABs in western Lake Erie	<u>N.E. Mandrak</u> History of Rapid Response to Aquatic Invasive Species in the Great Lakes	<u>N.B. Jordan</u> Abrupt Changes to Coastal Bluffs Adjacent to Coastal Structures: New Insights and Lessons Learned	<u>L.R. Katona</u> Littoral benthic primary production in Western Lake Erie and Georgian Bay, Lake Huron	<u>T.Q. Zhang</u> Use of soil legacy P, a valid approach meeting 40% loading reduction goal in the Lake Erie basin?	2:40
<u>C. Moldaenke</u> A New Measuring Method as an Early Warning System for the Appearance of Cyanobacteria's Compounds.	<u>S.A. Ruberg</u> Observations of the distribution of phytoplankton during cyanobacteria blooms using an AVP	<u>R.A. Sturtevant</u> Update on the Great Lakes Aquatic Nonindigenous Species Information System (GLANSIS)		<u>S.N. Francoeur</u> Light Saturation and P Limitation of Saginaw Bay Charophycean Algae	<i>Lessons Learned: Opportunities to Cross-pollinate Ideas that Translate into Action</i>	3:00
					BREAK	3:20

THURSDAY, MAY 18

	250A	250B	250C	251A	251B
	Nutrient Sources, Transport & Retention Across Scales: Measurement, Modeling & Management	Application of Trophic Markers in Aquatic Ecology	Binational and Regional Cooperation on Invasive Plant Management - the Case of Phragmites	Regional Water Management: Development and Application of Modeling and Data for Decisions	Great Lakes Fish and Fisheries
3:40	<u>M.J. Debues</u> Agricultural land use change and nutrient export in Lake Ontario tributaries CANCELLED	<u>L. Chavarie</u> Generalist morphs of Lake Trout: Avoiding constraints on the evolution of intraspecific divergence?	<u>E. Ferrier</u> Developing a collaborative regional approach to Phragmites management, research, and restoration	<u>B. Astifan</u> Use of Climate Forecasting System Forcings to Improve Lake Erie Harmful Algal Bloom Bulletin	<u>A.G. Guthrie</u> Collaboration Networks Supported the Adoption of Ecosystem-based Management
4:00	<u>M. Veliz</u> From big to little watersheds: The use of water and sediment control basins to improve water quality	<u>B.S. Gerig</u> Atlantic salmon in Great Lakes food webs: Implications for future stocking and pollutant monitoring	<u>K. Alexander</u> Developing the Phragmites Adaptive Management Framework (PAMF)	<u>O. Al-Dabbagh</u> Phosphorus and Nitrogen as Large-Scale Stressors in the Great Lakes	<u>J.M. Kosiara</u> Exploring coastal habitat-use patterns of Great Lakes yellow perch with otolith microchemistry
4:20	<u>S. Rasiah</u> Cold Region Hydrology: A Modelled Assessment of Winter Nutrient Runoff Processes	<u>L. Dolgova</u> Comparing Mercury Levels in Gull Eggs from Different Lakes Using Amino Acid-Specific $\delta^{15}\text{N}$ Analysis	<u>A. DaSilva</u> Developing the Monitoring Protocol for the <i>Phragmites</i> Adaptive Management Framework (PAMF)	<u>J. Noel</u> New Website Supporting Bi-national Coordination of Precipitation over the Great Lakes	<u>C.G. Prichard</u> Otolith chemistry patterns within- and between-species of resident sculpin and juvenile salmonids
4:40	<u>H.M. Fazekas</u> Attached Algae as Indicators of Stream Ecosystem Function in Headwaters of the Lake Erie Watershed	<u>B. Laurich</u> Using stable isotopes and fatty acids to understand gull population declines on Lake Superior	<u>J.M. Gilbert</u> Assessing System Response and Impacts of Invasive <i>Phragmites australis</i> Control Activities	<u>L. Mason</u> Development of a new geospatial hydrofabric to support advanced hydrological modeling	<u>T.R. Warriner</u> Adaptive stress: maternal stress may optimize salmon offspring performance under climate change
5:00			<u>G.J. Norwood</u> Costs and Benefits of Phragmites Management in Western Lake Erie Coastal Wetlands	<u>D.H. Lee</u> The application of hydroclimate science to Lake Ontario-St. Lawrence River System regulation	<u>A. Happel</u> Diet Compositions of Five Salmonid Species in Lake Michigan from 2015

251C	252A	252B	258	259	Ambassador	
Lake Erie Harmful Algal Bloom Research Initiatives: Field to Faucet and Beyond	Innovative Observations and Emerging Technologies	Advances in Understanding and Management of Non-native Species along the Invasion Curve	The Science and Policy of Multiple Stressors and Cumulative Effects in the Great Lakes	Understanding Drivers of Benthic Community Condition in the Laurentian Great Lakes	Lessons from the Frontiers in Science for Nutrient Reduction from Agriculture in the WLEB	
<u>J.M. Owen</u> Harmful Algal Blooms (HABs) in Lake Erie and Possible Causes of a Low Bloom Year (2016)	<u>A.J. Vander Woude</u> Variability in Lake Erie by Integrating Hyperspectral Imagery, AUV's and a Shipboard Underway System	<u>M.E. Brown</u> The Light at the End of the Funnel: Using Light-based Traps for the Detection of Hemimysis anomala.	<u>Y. Zheng</u> Measuring thermal stress and tolerance of Brook Trout under chronic temperature exposure	<u>A.N. Kneisel</u> The Impact of <i>Phragmites australis</i> Invasion on Great Lakes Coastal Wetland Macroinvertebrates	<u>M. Mushinski</u> Demonstrating Innovation in Wisconsin's Lower Fox River Watershed	3:40
<u>R.A. Briland</u> Cyanobacterial bloom impacts on higher consumers in western Lake Erie	<u>D.G. Stuart</u> Trends In Nitrate, Phosphate And Bloom Indicators During The 2016 Western Lake Erie Field Season	<u>D.D. Foubister</u> Effects of Sampling Techniques on Forensic Markers of Lampricide Mortality in Non-Target Fishes	<u>B.A. Allen</u> Effects of Multiple Stressors on the Fish Communities of the Credit River Watershed	<u>J.D. Ackerman</u> Flow, flux and feeding: Evidence for niche separation in freshwater mussels	<u>A.H. Heilers</u> The Blanchard River Demonstration Farms Network-Conservation Partnerships and Information Transfer	4:00
<u>D.D. Kane</u> YEAH BUOY?!? Monitoring cHABS in western Lake Erie using in-situ technology	<u>J.P. Smith</u> Utilization of PostgreSQL Database for Real-Time Western Lake Erie Data Storage and Dissemination	<u>M.J. Symbal</u> Lampricide induced growth and metabolic response of Age-0 Lake Sturgeon <i>Acipenser fulvescens</i>	<u>K. Wehrly</u> A Condition Assessment of Multistressors on Nearshore Fish Habitat in the Great Lakes Basin	<u>S. Tuttle-Raycraft</u> The effect of suspended sediment flux on the feeding and gill morphology of a freshwater mussel	<u>M.K. Fales</u> The Hard Work of Multi Stakeholder Engagement in Agricultural Conservation: Lessons from Saginaw Bay	4:20
<u>D.L. Bade</u> Microcystin Dynamics in Lake Erie Linked to Nutrients Concentrations	<u>T.H. Johengen</u> State of the Science for Great Lakes Observations: Conclusions from the 2016 CILER Symposium		<u>S.M. Brothers</u> Long-Term Metabolic Shifts in Lake Superior: A Case of Cumulative Effects?	<u>K. Tran</u> Differences in the Feeding of Sympatric Freshwater Mussels May Indicate Resource Partitioning	<i>Lessons Learned: Opportunities to Cross-pollinate Ideas that Translate into Action</i>	4:40
<u>J.D. Chaffin</u> Cyanobacterial Blooms in Lake Erie's Central Basin					<i>Discussion continued</i>	5:00

FRIDAY, MAY 19

	250A	250B	250C	251A
	The New Age of Ballast Water Management in the Great Lakes	Thiamine Deficiency in the Great Lakes - a Recurring Issue	Binational and Regional Cooperation on Invasive Plant Management - the Case of Phragmites	Regional Water Management: Development and Application of Modeling and Data for Decisions
8:00		<u>A.M. Harder</u> Overview of Thiamine Deficiency Complex and Identification of Underlying Genetic Mechanisms	<u>P.A. Rupasinghe</u> Determining the best time to map invasive Phragmites in wetlands using time series analysis	<u>L.M. Fry</u> Assessment of Probabilistic 5-year Forecasts of Great Lakes Levels and Outflows for Hydropower
8:20		<u>D.E. Tillitt</u> Thiamine concentrations in lake trout eggs from the Great Lakes: current and past trends	<u>L.L. Bourgeau-Chavez</u> Monitoring the Control of Invasive Phragmites australis to Inform Adaptive Management	<u>C.J. Warren</u> Investigation of Simulated and Observed SWE for Water Level Forecasting of the Great Lakes
8:40	<u>J.L. Ram</u> New Technology to Ascertain Compliance with the IMO's Ballast Water Convention	<u>M. Futia</u> Comparison between diet and thiamine deficiency complex in wild Lake Ontario salmonines	<u>P.J. Higman</u> Implementing Adaptive Management and Monitoring for Restoration of Wetlands Invaded by Phragmites	<u>V. Cheng</u> Relationship between large-scale climate indices, local climate variability and lake levels of Lake
9:00	<u>S. Fujiwara</u> JFE ballast water management system	<u>J. Rinchard</u> Prevalence of thiamine deficiency in lake trout eggs from Cayuga Lake	<u>W.S. Currie</u> The Mondrian Model: a Tool to Develop an Adaptive Management Framework to Restore Invaded Wetlands	<u>D.C. Apps</u> Developing and Testing New Regression Models for Application to Seasonal Water Level Forecasts
9:20	BREAK			

251B	251C	252A	252B	
Great Lakes Fish and Fisheries	Lake Erie Harmful Algal Bloom Research Initiatives: Field to Faucet and Beyond	Freshwater, Fresh Ideas: Great Lakes Research and Innovative Industries	Relevance of Bacterial, Archaeal, and Viral Dynamics to Great Lakes Ecosystem Processes	
<u>D.J. Stanton</u> DNA Fingerprinting of Walleye (<i>Stizostedion vitreum</i>) from Saginaw Bay	<u>K.J. Egan</u> Benefit-Cost Analysis for Policy Options (e.g., fertilizer fee, wetlands) to Reduce Nutrient Runoff	<u>K.A. Buckner</u> Industry Perspective on Great Lakes Issues	<u>D.A. VanMensel</u> Great Lakes Recreational Water Security - Human Pathogens and Sediment Dynamics	8:00
<u>R.R. Holem</u> Saginaw Bay Walleye Regulation Changes and Potential Impact on Exposure to Fish Contaminants	<u>E.A. Dayton</u> On-Field Ohio! Findings for Important Causes and Controls of Ohio Agricultural Phosphorus Runoff	<u>S. Moegling</u> Optimizing Water Treatment at Cleveland Water	<u>K. Kowalski</u> A science agenda for managing non-native <i>Phragmites australis</i> through microbial intervention	8:20
<u>S.R. Rafferty</u> Prevalence of intersex in <i>Micropterus dolomieu</i> collected from Presque Isle Bay and Long Point Bay	<u>S.D. Whitacre</u> On-Field Ohio! Considerations and Implications for Measuring Total Phosphorus and Suspended Sediment	<u>B.N. Nagusky</u> Building a Clean Energy Industry based on Sound Science in Lake Erie	<u>R. Props</u> Invasive dreissenid mussels induce phenotypic shifts in bacterioplankton communities	8:40
<u>C.E. Heuvel</u> March to the beat of your own Drum: Ontogenetic variation in niche & diet in three Lake Erie fishes	<u>A.M. Apostel</u> Simulating historical land management impacts on Maumee River phosphorus loading trends	<u>A.P. McClure</u> Ongoing Research and HABs Strategy for City of Toledo Water Utilities	<u>R.M. Martin</u> Genome sequence of <i>Cylindrospermopsis raciborskii</i> Virus and host: from test tube to invasion ecology	9:00
BREAK				9:20

FRIDAY, MAY 19

	250A	250B	250C	251A
	The New Age of Ballast Water Management in the Great Lakes	Thiamine Deficiency in the Great Lakes - a Recurring Issue	Binational and Regional Cooperation on Invasive Plant Management - the Case of Phragmites	Regional Water Management: Development and Application of Modeling & Data for Decisions
9:40	<u>B.A. Allen</u> Examining Flow Dynamics in Ballast Water Management Systems	<u>C.L. Kozel</u> Early Feeding in Lake Trout Fry as a Mechanism to Ameliorate Thiamine Deficiency	<u>J.V. Marcaccio</u> Pattern of Expansion of Phragmites Along Roadway Corridors in South Central Ontario: 2006 to 2015	
10:00	<u>P. Mayerfeld</u> Rapid Compliance Monitoring using Indicative Tools	<u>W.R. Ardren</u> Does boosting thiamine levels of Atlantic salmon enhance upstream migration?	<u>P. Chow-Fraser</u> Evidence-based Strategies to Control Phragmites in Ontario's Highway Corridors using Glyphosate	<u>J.P. Smith</u> Great Lakes water budget modelling and uncertainty estimation under a Bayesian MCMC framework
10:20	<u>J.N. Bradie</u> Ballast Water Compliance Monitoring: Can Analytic Tools Rapidly Detect the Effects of UV-Treatment?	<u>K.A. Edwards</u> Nature recognizing nature: Relying on bacteria-derived proteins for thiamine analysis	<u>R.C. Rooney</u> Can we restore ecological integrity by controlling Phragmites australis	<u>S.N. Rodrigues</u> Index-Velocity and Stage-Fall-Discharge Flow Computations for the St. Clair and Detroit Rivers
10:40	<u>T. Doyle</u> bbe 10cells - Approved Measuring Instrument for the Indicative Investigation of Ballast Water	<u>A.N. Evans</u> Thiaminase Activity of Great Lakes Zooplankton is not Related to Zooplankton Community Composition	<u>S. Ameri</u> Effectiveness Monitoring of a Control Program for Invasive Phragmites in Rondeau Bay Wetland Complex	<u>F.H. Quinn</u> Reconciling Discontinuity of Temporal Flow Measurements for the Detroit River
11:00	<u>R. Burt</u> FastBallast - Rapid On-board Compliance Testing for Ballast Water Discharges	<u>A.N. Evans</u> Thiaminase activity of planktivorous fish in the Great Lakes is unrelated to their diet	<u>K. Erickson</u> Times Beach Aquatic and Riparian Invasive Plant Species (AIS) Control Demonstration Project	<u>W. Bialkowski</u> Great lakes Routing Model with St Clair River Variable Conveyance
11:20	<u>J.P. Joubert</u> The Light Is Green - Is This Thing On? On-Board, Integrated Ballast Water Testing	<u>C.A. Richter</u> De novo production of thiabinase by alewife, a preferred prey fish for lake trout in the Great Lakes	<u>D.D. Engel</u> New Approaches to an Old Problem: Innovative Techniques for <i>Phragmites</i> Management	<u>K.A. Labuhn</u> Optimizing Water Levels in the Grass Island Pool for Hydropower Production on the Niagara River
11:40		<u>K.T. Mitchell</u> Effects of dietary thiabinase on reproductive traits in three populations of Atlantic salmon		
12:00	CONFERENCE ENDS			

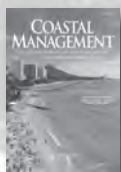
FRIDAY, MAY 19

251B	251C	252A	252B	
Great Lakes Fish and Fisheries	Lake Erie Harmful Algal Bloom Research Initiatives: Field to Faucet and Beyond	Freshwater, Fresh Ideas: Great Lakes Research and Innovative Industries	Relevance of Bacterial, Archaeal, and Viral Dynamics to Great Lakes Ecosystem Processes	
<u>T.D. Malinich</u> Factors Leading to Plastic Expression of Morphological Variation of <i>Perca flavescens</i>	<u>A.M. Rifenburgh</u> Water Quality of the Upper Maumee River: A Two Year Assessment	<u>C.L. Fietsch</u> Case Study: Risk Assessment of Industrial Thermal Effluent on Fish Species of Interest	<u>S.R. Coy</u> Chlorovirus methylation: a model for elucidating epigenomic functions in large dsDNA viruses	9:40
<u>J.L. Schnars</u> Overcoming Barotrauma in Lake Erie Yellow Perch	<u>M.R. Brooker</u> Discerning organic phosphorus signatures in pollutant sources from Lake Erie tributaries	<u>D.L. Bradley</u> EPRI's Great Lakes 316b Interest Group: A Regulatory Workgroup Success	<u>C.E. Payne</u> Longitudinal Monitoring of Microbial Populations and Nutrient Loads in the Macatawa Watershed	10:00
<u>C.N. Nieman</u> Visual Ecology of Lake Erie Fish: Assessing the Impacts of Increased Turbidity on Vision	<u>J. Lee</u> Bioaccumulation of Microcystin in Vegetables: Impact on Food Quality and Human Health Risk	<u>P.S. Wiegand</u> A View on the Intersection of Aquatic Science and the Forest Products Industry	<u>A. Dart</u> Picoplankton dominant the particulate P pool along a near to offshore gradient in Lake Michigan	10:20
<u>M.E. Sierszen</u> Support of coastal fishes by nearshore and coastal wetland habitats	<u>A.M. Brandel</u> Isolation and Characterization of Lake Erie Bacteria that Degrade the Microcystin Toxin MC-LR	<u>T.M. Mata</u> Using Blue Accounting to Track Environmental, Social and Economic Progress in the Great Lakes Basin	<u>S.F. Paver</u> Microbial diversity across the Laurentian Great Lakes through space and time	10:40
<u>P.T. Euclide</u> Movement of walleye in Lake Champlain inferred from forty years of mark-recapture data	<u>A. Bairacharya</u> Removal of Microcystin-LR Using Powdered Activated Carbon	<u>E. Pinero</u> How Data Can Support the Business Case for Water Stewardship	<u>M.L. Schmidt</u> Active and total bacterial communities differ along a near to offshore transect in Lake Michigan	11:00
	<u>X. Duan</u> Destruction of Cyanotoxins by Chlorination and UV/Chlorine Processes	<u>B. Music</u> Lake Ontario Water Temperature in a Changing Climate	<u>D.N. Niewinski</u> Quantification of the <i>nosZ</i> gene relative to sediment denitrification rates in Lake Erie	11:20
		<i>Panel Discussion: Connecting Science, Research and Industry in the Great Lakes</i>	<u>K. Knackstedt</u> Ice Nucleating Particles of Rivers and River Spray Aerosols	11:40
CONFERENCE ENDS				12:00



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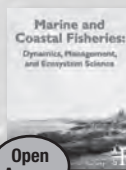
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COBO RIVER ATRIUM

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In addition to the IAGLR Best Student Poster Award, we're recognizing great posters with several other awards:

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For effective and artistic design for conveying scientific information

Information Impact Award

For best use of minimal and informative text to convey a clear message

Science Communication Award

For effective science translation to both scientific and public audiences

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Make sure to pick up your ballot and vote!

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great lakes observing system

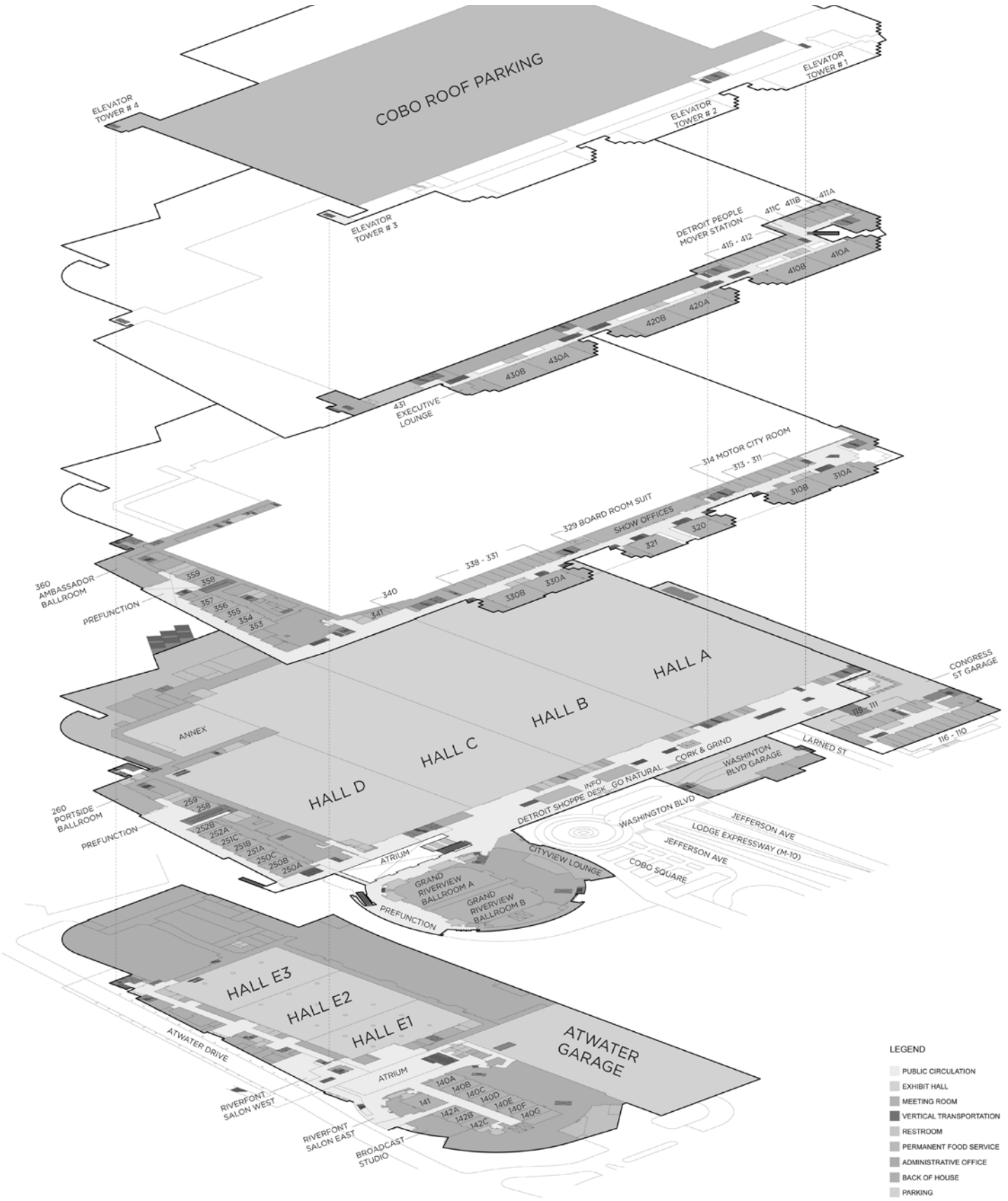
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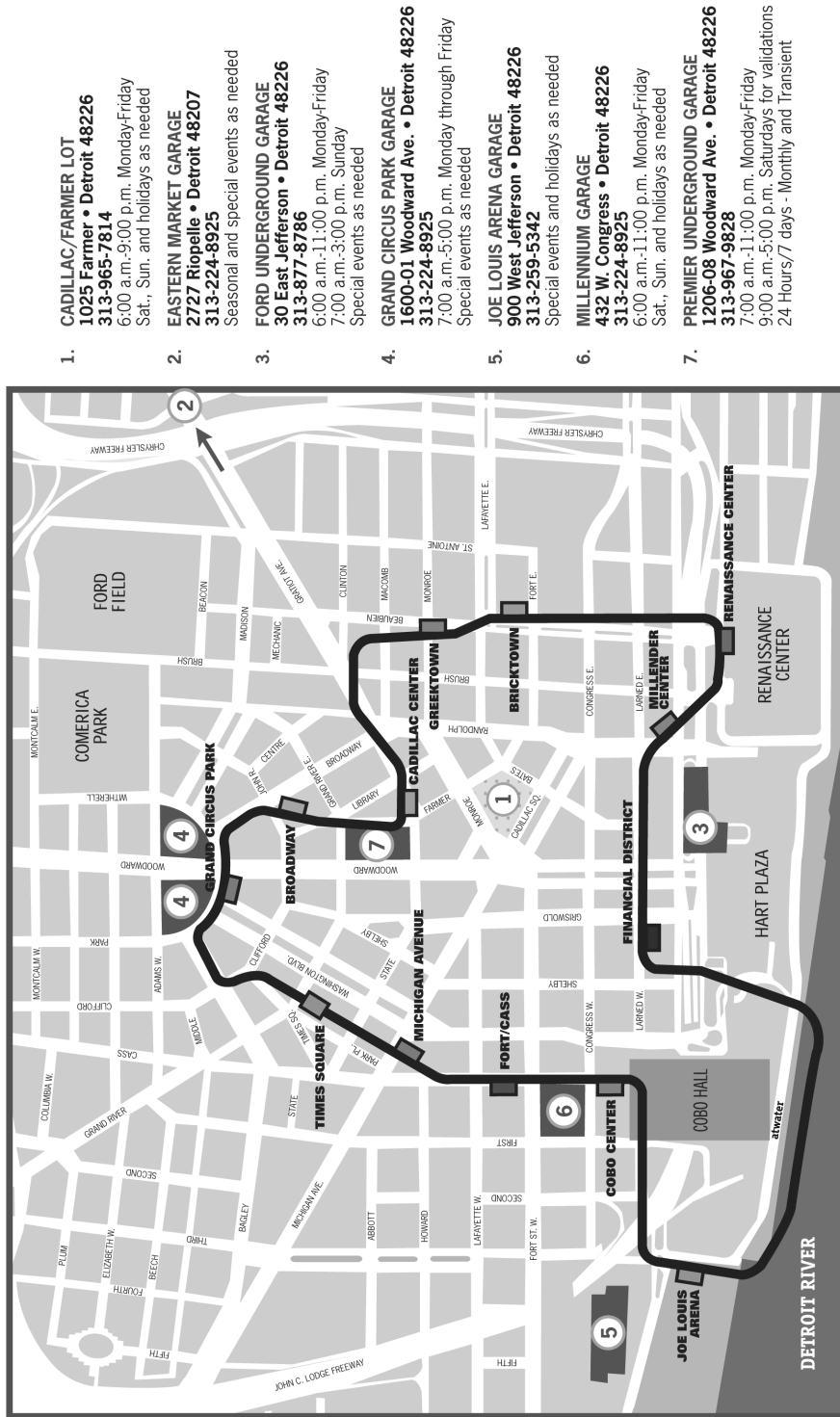
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COBO FLOOR PLAN



PARKING & PEOPLE MOVER MAP



1. **CADILLAC/FARMER LOT**
1025 Farmer • Detroit 48226
313-965-7814
6:00 a.m.-9:00 p.m. Monday-Friday
Sat., Sun. and holidays as needed
2. **EASTERN MARKET GARAGE**
2727 Riopelle • Detroit 48207
313-224-8925
Seasonal and special events as needed
3. **FORD UNDERGROUND GARAGE**
30 East Jefferson • Detroit 48226
313-877-8786
6:00 a.m.-11:00 p.m. Monday-Friday
7:00 a.m.-3:00 p.m. Sunday
Special events as needed
4. **GRAND CIRCUS PARK GARAGE**
1600-01 Woodward Ave. • Detroit 48226
313-224-8925
7:00 a.m.-5:00 p.m. Monday through Friday
Special events as needed
5. **JOE LOUIS ARENA GARAGE**
900 West Jefferson • Detroit 48226
313-259-5342
Special events and holidays as needed
6. **MILLENNIUM GARAGE**
432 W. Congress • Detroit 48226
313-224-8925
6:00 a.m.-11:00 p.m. Monday-Friday
Sat., Sun. and holidays as needed
7. **PREMIER UNDERGROUND GARAGE**
1206-08 Woodward Ave. • Detroit 48226
313-967-9828
7:00 a.m.-11:00 p.m. Monday-Friday
9:00 a.m.-5:00 p.m. Saturdays for validations
24 Hours/7 days - Monthly and Transient

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 or visit www.detroitmi.gov



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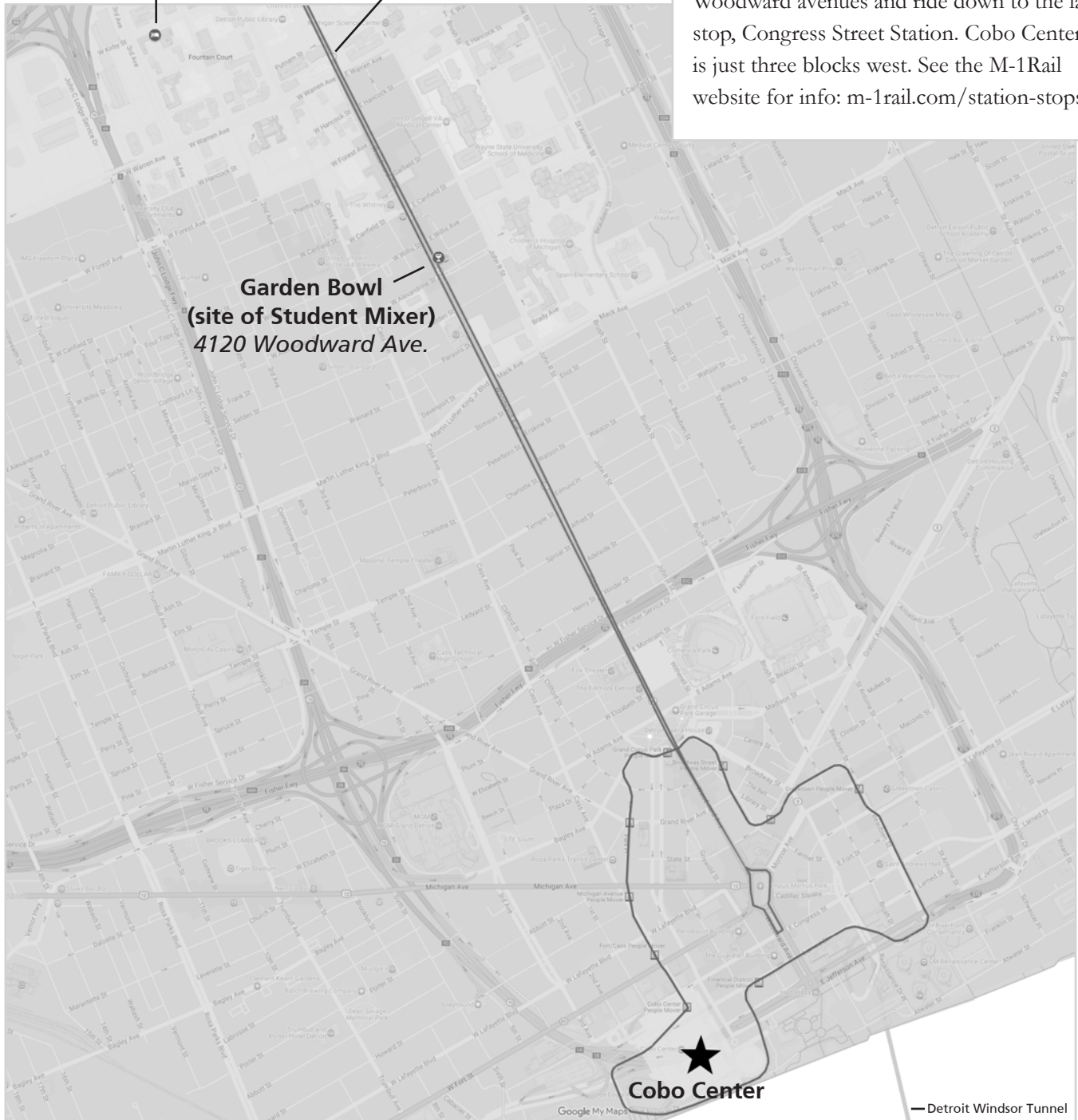
WAYNE STATE INFORMATION

Towers Residential Suites
Wayne State University
655 W. Kirby

QLine - Warren Station
Warren & Woodward

Garden Bowl
(site of Student Mixer)
4120 Woodward Ave.

Students staying at the WSU dorms can take the QLine, Detroit's new streetcar line scheduled to open just before the conference. Hop on at the Warren Station at Warren & Woodward avenues and ride down to the last stop, Congress Street Station. Cobo Center is just three blocks west. See the M-1Rail website for info: m-1rail.com/station-stops/



THINGS TO DO

There's plenty to do in Detroit! Enjoy a variety of amazing dining options, a vibrant cultural scene, and a beautiful walk along the Detroit River. Read on for more options, and be sure to check out visitdetroit.com for more information about restaurants, museums, and cultural opportunities.

Museums and Culture

The Detroit Institute of Arts offers more than 100 galleries featuring works from prominent artists such as Diego Rivera, Degas, and Cézanne. Just down the block, pop into the Charles H. Wright Museum of African American History to explore exhibits from the Middle Passage to the Underground Railroad. To learn more about the city's history, the Detroit Historical Museum offers a look into the city's past. Hitsville U.S.A., home to the Motown Museum, offers a testimony to the legacy of Motown music, featuring exhibits and artifacts from the era. Pop into Cliff Bell's jazz club for a taste of Prohibition-era Detroit.

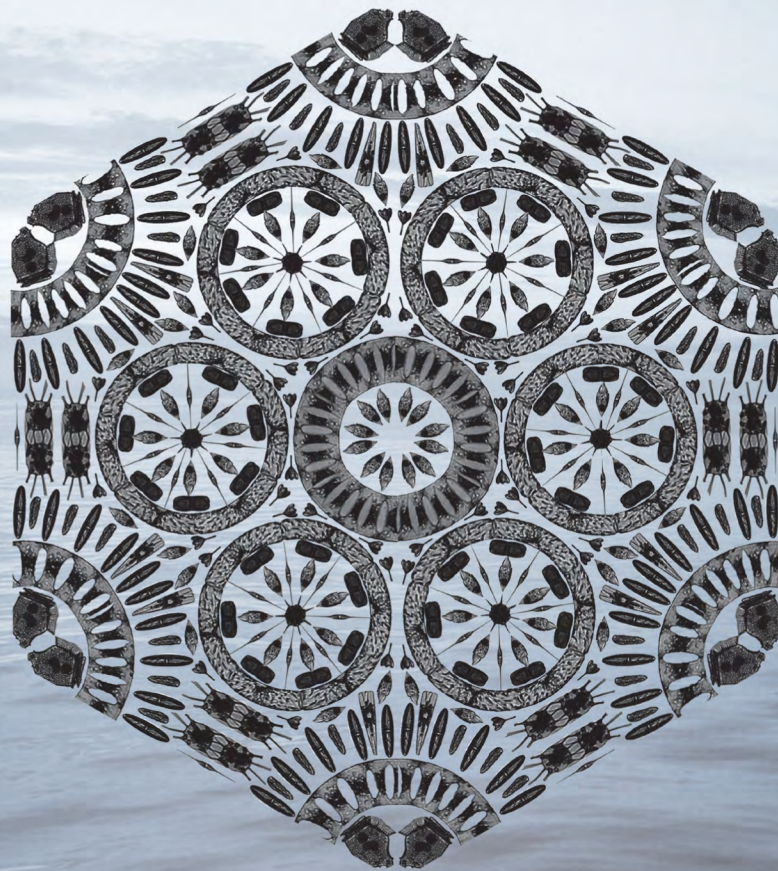
Nature in the City

Just outside Cobo Center, the Detroit RiverWalk provides a 5.5-mile paved pathway offering majestic views of the Detroit-Windsor International Waterfront. Belle Isle, a state park in the Detroit River, features an aquarium, conservatory, trails, a beach, and the Dossin Great Lakes Museum. Take a walk through William G. Milliken State Park and Harbor, the first urban state park in Michigan, which provides opportunities for picnics, walks, and shore fishing.

Detroit's culinary scene receives rave reviews!

- For a **Detroit classic**: Visit one of the many Coney Island restaurants, notably American or Lafayette. The two neighboring restaurants have been battling it out since the 1920s for the title of “best Coney dog.”
- For the **best BBQ**: Check out Slows Bar BQ in Detroit's historic Corktown neighborhood.
- For a **Latin flavor**: Home of the city's largest Mexican population since the 1920s, Southwest Detroit's Mexicantown neighborhood features some of the best Mexican food in the state. Any place near Bagley or Vernor is sure to provide a great, authentic meal.
- For a **five-star, fine-dining** experience: Head up to the 71st floor of the GM Renaissance Center to Coach Insignia. It boasts one of Michigan's largest wine lists and panoramic views of Detroit, Windsor, and the surrounding area.
- For a **steak dinner**: Take a trip to either the Book-Westin Cadillac Hotel and their award-winning restaurant, Roast, or to one of Detroit's oldest steakhouses, London Chop House — once a destination for Detroit's automotive elite.
- For **burgers and brews**: Corktown's Mercury Burger Bar sets the scene for the great American classic with great burgers and local brews on tap. Hopcat Detroit is home to one of “America's 10 Best French Fries” as voted by Food Network Magazine and boasts Michigan's largest tap selection.
- For **breakfast or brunch**: Featuring all things savory and sweet, the award-winning Hudson Café offers a coffee bar and lounge area.
- For a **Mediterranean** taste: Take a walk under the lights down Monroe Avenue and eat at any of Greektown's authentic restaurants. Save room for dessert at Astoria Pastry Shop.
- For **Detroit-Style pizza**: Find this square, deep-dish, Sicilian-style fare at PizzaPapalis and Niki's.

NOTES



*Mosaic made from
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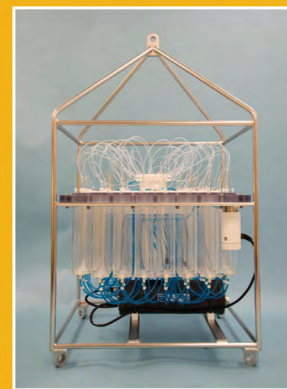
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