



International Association for Great Lakes Research
67th Annual Conference on Great Lakes Research | May 20-24, 2024

PROGRAM

67th Annual Conference on Great Lakes Research



#IAGLR24

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International Association for Great Lakes Research
4840 South State Road, Ann Arbor, MI 48108

iaglr.org

Cover design and conference logo by Jenifer Thomas

IAGLR CODE OF CONDUCT

IAGLR is committed to providing healthy, safe, and inclusive environments for all members and participants in its activities. We seek to provide a productive and enjoyable experience for everyone, regardless of gender, sexual orientation, disability, physical appearance, body size, race, nationality, or religion. We value a diversity of views, expertise, opinions, backgrounds, and experiences, and we recognize our responsibility to involve the full diversity of these voices in achieving our vision of a peaceful world in which large lake ecosystems are valued and healthy; where these ecosystems inspire curiosity, awe, love and respect, and stewardship in all people.

All participants, including but not limited to authors, attendees, speakers, volunteers, exhibitors, staff, service providers, and others, are expected to abide by this Code of Conduct. As such, no harassment of participants in any form will be tolerated. Harassment is defined as unwelcome conduct that is based on race, color, religion, national origin, sex, age, sexual orientation, disability (physical or mental), gender identity, protected genetic information, pregnancy, status as parent, marital status, or political affiliation.

Harassment can include, but is not limited to, the following:

- Offensive comments or jokes—whether verbal, written, or as imagery—related to gender, sexual orientation, disability, physical appearance, body size, race, or religion. Sexual language and imagery are not appropriate.

Reporting Violations

If you are the subject of unacceptable behavior or have witnessed any such behavior, please do one of the following:

- If you witness or experience behavior that constitutes an immediate and serious threat, please call 911 and/or Caesars Windsor security at #22575.
- Notify an IAGLR staff member.
- Call or email IAGLR Conference Coordinator Brianna Ellis at (703) 801-3137 or bellis@iaglr.org, or Executive Director Jérôme Marty at (613) 355-6843 or jmarty@iaglr.org.

- Sustained disruption of talks or other events. Disruptions of talks at oral or poster sessions, in the exhibit hall, or at other events organized by IAGLR are not appropriate.
- Inappropriate physical contact, sexual attention, or innuendo
- Deliberate intimidation, stalking, insults, or threats
- Photography or recording of an individual without consent
- Conduct through electronic means (e.g., sending offensive or repetitive emails, offensive use of social media, offensive content in member profile)

In addition, all participants must abide by intellectual property laws. As such, avoid plagiarism, fabrication, or falsification in the work you present in publications and presentations.

We expect all participants to follow these guidelines:

- Be kind to others. Do not insult or put down other participants.
- Behave professionally.
- Target written and verbal

communications for a professional audience that includes people of many different backgrounds.

- Demonstrate integrity in your work.

Consequences

Anyone requested to stop unacceptable behavior is expected to comply immediately. If the offense is criminal, law enforcement will be contacted. Consequences of unacceptable behavior will be determined by the IAGLR Board of Directors in conjunction with the IAGLR executive director. Consequences may include, but are not limited to, the following:

- Dismissal from the event without refund
- Removal from IAGLR digital platforms or groups
- Reporting to your agency or place of work
- Exclusion from IAGLR events
- Loss of IAGLR membership
- Loss of any previous IAGLR Awards

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Check out the Online Program

Browse and search sessions, authors, and abstracts.

Bookmark your favorites or use convenient filters.

Upvote or ask questions on presentations.

Contact other attendees.



event.fourwaves.com/iaglr2024/

IAGLR 2024 Land Acknowledgement

WE HONOR the long-standing relations of many First Peoples to this Place, which sits in the traditional territory of the Three Fires Confederacy of First Nations comprising the Ojibwe, Odawa, Bodwewaadmii. We recognize that this Place was—and is—home to many First Peoples and that colonial harms are still ongoing. We will advance understanding of Great Lakes ecosystems together through renewed and respectful relationships. We commit to working together across disciplines, knowledge systems, and domains of expertise by sharing knowledge and building partnerships. We believe that multiple ways of knowing are vital for understanding an ecosystem and the role humans have in maintaining its sustainability. We seek to reflect this commitment in IAGLR's practices and programs.

We acknowledge that this is a living statement and invite your comments to ensure healthy relationships and a welcoming space within the IAGLR community.

CONFERENCE ORGANIZERS

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Thanks also to all onsite volunteers.

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Assistant Editor

Jessica Ives
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REGISTRATION DESK HOURS

Monday: 5:30–8:30 p.m.

Tuesday: 7:30 a.m.–6:00 p.m.

Wednesday: 7:30 a.m.–1:30 p.m.

Thursday: 7:30 a.m.–5:00 p.m.

Friday: 7:45 a.m.–2:00 p.m.

HOTEL WIFI

Network: Convention

Password: Casino4132

QUIET ROOM

The Basilica Room

Located in the
Forum Tower, 20th floor

*(Available throughout
the conference except
Wednesday morning)*



EXHIBITORS

Exhibits are open daily throughout the Meeting Level hallways. Stop by and say hello!

African Center for Aquatic Research and Education
Ann Arbor, Michigan
agl-acare.org

Aquanty Inc.
Waterloo, Ontario
aquanty.com

Aquatic Ecosystem Health and Management Society
Burlington, Ontario
aehms.org

Aquatic Sensors Inc.
Kenora, Ontario
aquaticsensors.com

beadedstream
Anchorage, Alaska
beadedstream.com

DataStream
Toronto, Ontario
datastream.org

Great Lakes Commission
Ann Arbor, Michigan
glc.org

Great Lakes Fishery Commission
Ann Arbor, Michigan
glfc.org

Great Lakes Institute for Environmental Research
Windsor, Ontario
uwindsor.ca/glier

Great Lakes Observing System
Ann Arbor, Michigan
glos.org

Great Lakes Sea Grant Network
Ann Arbor, Michigan
michiganseagrant.org

Hoskin Scientific
Oakville, Ontario
hoskin.ca

International Joint Commission
Windsor, Ontario
ijc.org

Michigan State University Press
East Lansing, Michigan
msupress.org

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

Nortek
Boston, Massachusetts
nortekgroup.com

RAEON
Windsor, Ontario
raeon.org

Reformar
Rimouski, Quebec
reformar.ca

Rice Resource Technologies
Edmonton, Alberta
riceresource.com

River Institute
Cornwall, Ontario
riverinstitute.ca

Royal Canadian Geographical Society - Canadian Geographic
Ottawa, Ontario
rcgs.org

Three Waters Foundation
Miller Lake, Ontario
3waters.ca

University of Windsor Faculty of Science
Windsor, Ontario
uwindsor.ca/science/

University of Windsor Leddy Library
Windsor, Ontario
leddy.uwindsor.ca

University of Windsor Office of Vice President, Research, and Innovation
Windsor, Ontario
uwindsor.ca/vp-research/

Water Rangers
Ottawa, Ontario
waterrangers.ca



Receive discounts on scooters and bikes

Bird Canada is excited to be partnering with us! Receive **25% off two rides** on the available scooters or bikes placed around the conference venue and across the city! Discount lasts all week. To redeem the code, enter **GREATLAKES24** in the promotions tab from within the Bird app. To help enjoy Windsor's *Pockets of Awesome*, Bird Canada will also have a tent available on Wednesday to help educate riders on safe riding and the scooter program in Windsor. Free rides and complimentary helmets will also be made available.

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the app



bit.ly/4bwEZVX

SPEAKERS



Tuesday, May 21
11:30–12:30
Augustus I & II

Black, Blue, and Green: The Color of Water

PALENCIA MOBLEY is the founder and CEO of Mode Collective. An authority on water infrastructure and environmental engineering, Mobley has 20+ years of experience in planning, design, construction, administration, and management services for water and wastewater utilities across the United States. Previously, she was the deputy director and chief engineer at Detroit Water and Sewerage Department. Under her leadership, DWSD increased investment in green stormwater infrastructure by \$19 million in 10 years. She also increased the renewal of water and sewer infrastructure from 10 to 50+ miles per year. During her tenure, Detroit passed the first post-construction stormwater ordinance, and DWSD implemented a full lead service line replacement program in 2018. That same year, she was appointed to the Michigan Infrastructure Council, which she now chairs. A dedicated change agent, Mobley is committed to ensuring that infrastructure renewal creates economic opportunity in underserved communities.



Wednesday, May 22
11:30–12:30
Augustus I & II

Water Back: Indigenous Science for Great Lakes Health

KELSEY LEONARD is a water scientist, legal scholar, policy expert, writer, and enrolled citizen of the Shinnecock Nation. Leonard is an assistant professor in the Faculty of Environment at the University of Waterloo, where her research focuses on Indigenous water justice and its climatic, territorial, and governance underpinnings. She seeks to establish Indigenous traditions of water conservation as the foundation for international water policymaking. She represents the Shinnecock Indian Nation on the Mid-Atlantic Committee on the Ocean, which is charged with protecting America's ocean ecosystems and coastlines. She also serves as a member of the Great Lakes Water Quality Board of the International Joint Commission. Her regional ocean policy work in collaboration with Tribes, state, federal, and fishery management council entities received a Peter Benchley Ocean Award for Excellence in Solutions.



Thursday, May 23
11:30–12:30
Augustus I & II

Environmental contamination through a One Health lens

TRACIE BAKER is an associate professor in the Department of Environmental and Global Health at the University of Florida and adjunct faculty in the Institute of Environmental Health Sciences and Department of Pharmacology in the School of Medicine at Wayne State University. Her lab focuses on multidisciplinary, translational research that bridges human, animal, and environmental health. She provides critical insights into environmentally induced disease by evaluating contaminant levels in global environments and using the zebrafish model to uncover the etiology of adverse health endpoints related to contaminant exposure. She earned her B.S. in biology and chemistry (Cleveland State University), an M.S. in marine biology (University of Alaska), and a Doctorate of Veterinary Medicine and Ph.D. in molecular and environmental toxicology (University of Wisconsin).

SCHEDULE AT A GLANCE

	Event	Time	Location
MON	Exhibits	5:30–9:00 p.m.	Meeting Level
	Welcome Mixer	6:00–9:00 p.m.	Meeting Level
TUE	Exhibits	8:00 a.m.–8:00 p.m.	Meeting Level
	Concurrent Sessions	8:00–11:00 a.m.	Session Rooms
	Welcome/Openings	11:00–11:30 a.m.	Augustus Ballroom I & II
	Plenary: Palencia Mobley	11:30 a.m.–12:30 p.m.	Augustus Ballroom I & II
	IAGLR Business Lunch & Presentation of Appreciation Awards	12:30–1:30 p.m.	Augustus Ballroom I & II
	Concurrent Sessions	1:40–5:40 p.m.	Session Rooms
	Editors' Reception	5:30–7:00 p.m.	Vu Bar
	Poster Session & Social	6:00–8:00 p.m.	Augustus III
	Student Triva Night Social	8:00–10:00 p.m.	Mezzanine
WED	Exhibits	8:00 a.m.–1:30 p.m.	Meeting Level
	Concurrent Sessions	8:00–11:00 a.m.	Session Rooms
	Openings & Presentation of Student Awards	11:00–11:30 a.m.	Augustus Ballroom I & II
	Plenary: Kelsey Leonard	11:30 a.m.–12:30 p.m.	Augustus Ballroom I & II
	Lunch on your own	12:30 p.m.	
	Field Trips & Workshops	12:50–5:00 p.m.	Various
	Barbecue	6:00–8:00 p.m.	Festival Plaza
	IAGLR Defy Cup Hockey Challenge	8:00–10:00p.m.	Windsor Family Credit Union
THU	Exhibits	8:00 a.m.–6:00 p.m.	Meeting Level
	Concurrent Sessions	8:00–11:00 a.m.	Session Rooms
	Openings & Presentation of Journal Awards	11:00–11:30 a.m.	Augustus Ballroom I & II
	Plenary: Tracie Baker	11:30 a.m.–12:30 p.m.	Augustus Ballroom I & II
	Lunch on your own	12:30–1:40 p.m.	
	Navigating the Diversity of Aquatic Science Careers Panel Discussion & Boxed Lunch	12:30–1:30 p.m.	Mercuri
	Concurrent Sessions	1:40–6:00 p.m.	Session Rooms
	Banquet & Presentation of IAGLR Lifetime Achievement Award, Anderson-Everett Award & Large Lake Champion Awards	6:00–9:00 p.m.	Augustus Ballroom I & III
FRI	Exhibits	8:00 a.m.–4:40 p.m.	Meeting Level
	Concurrent Sessions	8:00 a.m.–12:20 p.m.	Session Rooms
	Lunch on your own	12:20–1:20 p.m.	
	Concurrent Sessions	1:20–4:40 p.m.	Session Rooms

FIELD TRIPS & WORKSHOPS



Photo credit: LT Taylor Peace

Tuesday, Wednesday & Thursday, 10–2 p.m.

Tour *USCGC MORRO BAY*

Moored at Festival Plaza adjacent to Caesars Windsor.

Tours will be on the half hour and limited to 15 persons per time slot. Stop by the registration desk to sign up.



Wednesday, 12:50–5 p.m.

Walking Tour in Detroit

Take the Transit Windsor Tunnel Bus at 12:50 p.m. from the Caesar Windsor stop with arrival at U.S. Customs at 1:20 p.m. Meet the tour organizers at the Mariners Church, located adjacent to the U.S. Customs plaza. Remember your documents to clear customs.



Wednesday, 1–4:30 p.m.

Ojibway Prairie Complex Field Trip

Bus will pick up participants at Caesars Windsor. Make sure to pre-register online; payment required. Visit QR code below.



Wednesday, 1:30–2:30 p.m. and 2:45–3:45 p.m.

Detroit River Waterfront Tour/Walk-and-Talk

Meet at the fountain in front of Caesars on Riverside Drive 15 minutes before start of tour.



Wednesday, 1:30–5 p.m.

Tour the *Viking Polaris*

Buses will pick up participants at Caesars for transport to the *Viking Polaris*, docked on the Detroit side of the river. Remember your documents to clear customs. Photo ID required.

Wednesday, 8–11 a.m.

FishCAST x ACARE Workshop

Jovis at Caesars Windsor

Wednesday, 1:30–2:30 p.m. & 2:45–3:45 p.m.

INCUBATOR Art Lab Tour & Algae Painting Workshop

144 University W. Avenue

Wednesday, 1:30–2:30 p.m. & 2:45–3:45 p.m.

Podcasting for Science Communications Workshop

Jovis at Caesars Windsor

Thursday, 12:30–1:30 p.m.

Navigating the Diversity of Aquatic Science Careers Panel Discussion

Mercuri at Caesars Windsor

Pre-registration required!
Details Online



bit.ly/3WqnbHQ

Advances in Large Lakes Science, Technologies & Innovations

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Intellectual Property

We encourage the sharing of science on social media, and many attendees post items of interest during the conference. However, **presentations and posters are the property of the presenter.**

Please respect the presenter's choice about sharing their work.

- If you see the “social” icon shown here, presenters have already signaled their approval to share their work on social media.
- If you don't see it, ask permission of the presenter to record and share images.
- Always provide due credit when sharing images.



Presenters, if you do NOT want your presentation shared on social media or recorded, please verbally indicate at the start of your presentation or on your poster. If you're okay with sharing your work on social media, please share your social media accounts to facilitate attributing your work.

Share the excellent work of people who have opted in with the hashtag #IAGLR24.

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TUESDAY, MAY 21

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Toward a Resilient and Reciprocal Relationship Between Coregonines and Humans, I of II <i>Chairs: David Bunnell, Erin Dunlop, Ryan Lauzon, Jason Smith</i></p>	<p>Ecological Modeling and Physical-Biological Interactions in Large Lakes and Their Watersheds, I of II <i>Chairs: Reza Valipour, Mark Rowe, Casey Godwin, Josef Ackerman</i></p>	<p>Aquatic Invasive Species Research <i>Chair: Rochelle Sturtevant</i></p>	<p>Great Lakes Region Green Energy Opportunities Supporting U.S. and Canadian 2035 Targets <i>Chair: Mithra Sankrithi</i></p>	<p>PFAS Loading to and Discharges from Water Treatment Plants <i>Chairs: Carol Miller, Tracie Baker, John Norton</i></p>
8:00		<p><u>K. Avetisyan</u> Biogeochemical Dynamics in the Water Column of Hamilton Harbour (Lake Ontario)</p>	<p><u>R. Sturtevant</u> Laurentian Great Lakes Horizon Scanning for Aquatic Invasive Species</p>	<p><u>P. Kasthurirangan</u> Wind and Solar along the Great Lakes</p>	<p><u>M. Llewellyn</u> Novel Identification and Quantification of Per- and polyfluoroalkyl substances (PFAS) Contamination in a Great Lakes Urban-Dominated Watershed</p>
8:20	<p><u>E. Overholt</u> Challenges and Successes in Building Reciprocal Relationships: Creating an Ethical Space to Study Adikameg</p>	<p><u>Y. Kasahun</u> Assessment of water quality, phytoplankton, zooplankton and trophic interaction of Lake Tinshu Abaya.</p>	<p><u>C. Weibert</u> Great Lakes Invasive Aquatic Plant Control Prioritization and Needs Assessment</p>	<p><u>N. Cislo</u> Powering Non-Powered Dams in the Great Lakes Region</p>	<p><u>A. Okolocha</u> Emerging contaminants, Perfluoroalkyl and polyfluoroalkyl — PFAS under changing climatic variability: Insights from a preliminary survey in Agulu Lake, Anambra State, Nigeria</p>
8:40	<p><u>K. King</u> Modeling historical spawning habitat of cisco (<i>Coregonus artedii</i>) in Lake Erie to support coregonine restoration</p>	<p><u>R. Sorichetti</u> Insights from a seasonal nearshore water quality survey in the western basin of Lake Ontario</p>	<p><u>R. Hackett</u> Plant and marsh bird relationships with invasive <i>Phragmites australis</i> occurrence and management in Saginaw Bay</p>	<p><u>J. Meldrum</u> Undergraduate Research in Alternative and Renewable Energy Systems</p>	<p><u>P. Hania</u> Protecting Great Lakes freshwater, and communities from PFAS discharges from wastewater treatment plants.</p>
9:00	<p><u>J. Chiotti</u> Identifying and characterizing Lake Whitefish spawning habitat in Lake Erie</p>	<p><u>T. Harrow-Lyle</u> Developing a novel dialysis array system to assess primary productivity along a nutrient gradient in Lake Ontario</p>	<p><u>C. Brooks</u> Using drone imagery to quantify changes in Eurasian watermilfoil extent due to different treatment methods</p>	<p><u>M. Sankrithi</u> Harnessing the Great Lakes for the World's Largest Pumped Storage System</p>	<p><u>C. Miller</u> PFAS Loadings to a Regional Treatment/Recovery Facility Serving Multiple Land Uses and Demographics</p>
9:20	Break				

Martis	Mercuri	Saturni	Solis	
<p>Cyanotoxins and Off-Flavors in Freshwater: Synthesis Mechanism to Toxicology Assessment Chairs: Xuexiu Chang, Arthur Zastepa, Lin Li</p>	<p>Centering Communities in Great Lakes Restoration Chairs: Meghan Klasic, Mike Shriberg, Sara Hughes</p>	<p>Overview of Lake Huron CSMI Activities During the 2022 Field Year Chairs: Paris Collingsworth, Annie Scofield</p>	<p>Toward a Great Lakes Microbial Water Quality Assessment Chairs: Tom Edge, Joan Rose</p>	
	<p>K. Williams Exploring what it means to center communities in Great Lakes restoration and ecosystem-based management programs</p>	<p>P. Collingsworth Overview of Lake Huron CSMI activities during the 2022 intensive field year</p>	<p>T. Edge Microbial source tracking of fecal pollution (human and ruminant) and nutrients along the Thames River to Lake Erie corridor, Ontario</p>	8:00
<p>K. Brown Bacterial community and cyanotoxin gene distribution of the Winam Gulf, Lake Victoria, Kenya</p>	<p>M. Klasic A review of social indicators of environmental restoration</p>	<p>P. Alsip An Experimental Biophysical Forecast System to Support Lake Huron CSMI 2022</p>	<p>E. Harrop Environmental surveillance of antimicrobial resistance within the Huron-Erie corridor</p>	8:20
<p>X. Chang A New Dominant Microcystis in Dianchi Lake (China) Disrupts Food Intake in Fish by Regulating Neurotransmitters and Hormones</p>	<p>I. Staph Community perceptions of remediation, restoration, and revitalization in the Great Lakes Areas of Concern (AOCs)</p>	<p>S. Ruberg Lake Huron Karst Groundwater Observations</p>	<p>Y. Lin Impacts of anthropogenic activities on phytoplankton and fish communities in Dianchi Basin via eDNA biomonitoring</p>	8:40
<p>L. Li Investigation of off-flavour episodes and characteristics of earthy/musty odor producers in some lakes and reservoirs in China</p>	<p>L. Rubin Centering Communities in Great Lakes Restoration</p>	<p>A. Banerji Algal & Cyanobacterial Distributions within Lake Huron CSMI 2022 Field Season</p>	<p>E. Kiledal Advancing ‘Omics in the Great Lakes with the Great Lakes Atlas of Multi-omics Research (GLAMR)</p>	9:00
Break				9:20

TUESDAY, MAY 21

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Toward a Resilient and Reciprocal Relationship Between Coregonines and Humans, I of II Chairs: David Bunnell, Erin Dunlop, Ryan Lauzon, Jason Smith</p>	<p>Ecological Modeling and Physical-Biological Interactions in Large Lakes and Their Watersheds, I of II Chairs: Reza Valipour, Mark Rowe, Casey Godwin, Josef Ackerman</p>	<p>Aquatic Invasive Species Research Chair: Rochelle Sturtevant</p>	<p>Co-Producing Knowledge and Co-Innovating Solutions—From Local to Global Waters Chairs: Navjot Dhaliwal, Fani Tsaroucha, Ali Mokdad</p>	<p>PFAS Loading to and Discharges from Water Treatment Plants Chairs: Carol Miller, Tracie Baker, John Norton</p>
9:40	<p>D. Hondorp Lake Whitefish spawning behavior and habitat selection in northeast Lake Michigan</p>	<p>D. Depew Benthic and pelagic productivity across a nutrient gradient in Lake Ontario</p>	<p>P. Esselman A new status and trends dataset for round goby lake-wide abundances using robots carrying cameras</p>	<p>J. Hartig Exemplars of ecosystem-based management</p>	<p>E. Zvereva Estimating the mass of PFAS in exterior building materials</p>
10:00	<p>T. Funnell Lakewide movements of lake whitefish (<i>Coregonus clupeaformis</i>) from US waters of Lake Huron</p>	<p>S. Todd The effect of total nitrogen flux on nutrient cycling in a freshwater mussel, <i>Lampsilis siliquoidea</i></p>	<p>A. Geglio GobyNet: Catching Round Goby with neural nets instead of trawl nets</p>	<p>F. Tsaroucha Making way for boundary spanners and actionable science in Great Lakes restoration</p>	<p>C. Linn How do different stakeholder groups approach solutions about PFAS contamination in Michigan?</p>
10:20	<p>T. Hayden Habitat use of cisco along a nearshore-offshore gradient in Northern Lake Huron</p>	<p>J. Ackerman Spatial and temporal dynamics of near-bottom dissolved oxygen in the central basin of Lake Erie</p>	<p>K. Schulz Round goby (<i>Neogobius melanostomus</i>) inter-lake biomass estimates and size frequencies across physical habitat features in the Laurentian Great Lakes</p>	<p>A. Mokdad Plasticity from hatcheries to the wild: insights into the phenotype-environment mismatch</p>	<p>S. Oza PFAS in biosolids and comparison on interlaboratory detection limits</p>
10:40	<p>A. Ackiss Ghosts and relics of Lake Erie: a genomic comparison of historic and contemporary <i>C. artedi</i></p>	<p>A. Isabwe Triggers of chlorophyll-a phenology in the western Lake Erie basin</p>	<p>C. Heuvel The impact of invasive species on Lake Erie walleye and yellow perch: Ecopath modelling</p>		<p>R. Fernandez-Valdivia PFAS pollutants and the Great Lakes Ecosystem: Decoding PFAS exposure in breast and lung carcinogenesis</p>
11:00	Welcome/Openings				
11:30	Plenary by Palencia Mobley Augustus Ballroom I & II				
12:30	IAGLR Business Lunch & Presentation of Appreciation Awards (ticket required)				

Martis	Mercuri	Saturni	Solis	
<p>Cyanotoxins and Off-Flavors in Freshwater: Synthesis Mechanism to Toxicology Assessment Chairs: Xuexiu Chang, Arthur Zastepa, Lin Li</p>	<p>Centering Communities in Great Lakes Restoration Chairs: Meghan Klasic, Mike Shriberg, Sara Hughes</p>	<p>Overview of Lake Huron CSMI Activities During the 2022 Field Year Chairs: Paris Collingsworth, Annie Scofield</p>	<p>Multi-Nation Science: The Benefits and Challenges of Science Spanning Borders Chairs: Jessica Ives, Ted Lawrence, Alfred Achieng</p>	
<p>X. Zhang Production and Release of 2-MIB in Pseudanabaena: Effects of Growth Phases on Cell Characteristics and 2-MIB Yield</p>	<p>J. Rudnick Establishing social well-being indicators for ecosystem management: comparative learning from the California Delta</p>	<p>E. Rutherford NOAA's coordinated sampling of water quality and lower food web dynamics in Lake Huron 2022</p>	<p>G. Bullerjahn US/Canada/Kenya Collaborative research on HABs and contaminants on Lake Victoria</p>	9:40
<p>K. Zhang Research on odor-producing response mechanism of freshwater algae under stressful conditions and the corresponding control technologies</p>	<p>M. Shriberg Great Lakes Restoration in a New Era of Challenges and Opportunities</p>	<p>C. Brant Investigating fish recruitment constraints in the first year of life: A 2022 Lake Huron CSMI update</p>	<p>E. Shaw Local remediation can decrease local concentrations of ASEPs - a policy analysis of PCB concentrations in the Great Lakes basin</p>	10:00
<p>Y. Qian Exudate of Microcystis aeruginosa change root development by impacting plant hormone synthesis and auxin signal transduction</p>	<p>Panel: Centering communities in Great Lakes restoration and ecosystem-based management programs</p>	<p>R. Lepak Connecting energetic subsidies to contaminants to better understand contaminant fate and transport in Lake Huron</p>	<p>B. Redford The gift of multiple knowledges</p>	10:20
<p>X. Hou Response of an endangered macrophytes to co-occurring cyanobacterial bloom and invasive fish</p>		<p>M. Mahon PFAS in Fish in the Minnesota Portion of the Lake Superior Basin</p>	<p>M. Cort Science Across Borders: The Global Center for Understanding Climate Change Impacts on Transboundary Waters</p>	10:40
Welcome/Openings				11:00
Plenary by Palencia Mobley Augustus Ballroom I & II				11:30
IAGLR Business Lunch & Presentation of Appreciation Awards (ticket required)				12:30

TUESDAY, MAY 21

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Toward a Resilient and Reciprocal Relationship Between Coregonines and Humans, I of II Chairs: David Bunnell, Erin Dunlop, Ryan Lauzon, Jason Smith</p>	<p>Ecological Modeling and Physical-Biological Interactions in Large Lakes and Their Watersheds, I of II Chairs: Reza Valipour, Mark Rowe, Casey Godwin, Josef Ackerman</p>	<p>Aquatic Invasive Species Research Chair: Rochelle Sturtevant</p>	<p>Co-Producing Knowledge and Co-Innovating Solutions—From Local to Global Waters Chairs: Navjot Dhaliwal, Fani Tsaroucha, Ali Mokdad</p>	<p>Advances in Wetland Science: Connecting the Land, Water, and People, I of II Chairs: Rebecca Rooney, Andrea Kirkwood, Courtney Robichaud, Tyler Hampton</p>
1:40	<p>C. Wilson Genomic Diversity of Lake Whitefish (<i>Coregonus clupeaformis</i>) from Algonquin Park</p>	<p>A. Kain Estimation of Microcystis Buoyancy by Calibrating a Numerical Model to In-Situ Observations</p>	<p>C. Pennuto Snails behaving badly: an example of maladaptive behavioral responses to non-native predators</p>	<p>L. Haambiya A Pilot Approach Towards Managing the Commons of Lake Tanganyika: experiences and lessons</p>	<p>K. Kowalski Landscape-Scale Implementation of the Great Lakes Coastal Wetland Restoration Assessment</p>
2:00	<p>N. Sard Geonotyping larval coregonines provides insights into Lake Ontario adult breeding and offspring dispersal patterns</p>	<p>J. Pauer Modeling Harmful Algal Blooms: Transparency, baby steps and patience are required</p>	<p>X. Gonzalez First observations of host finding behaviors of parasitic sea lamprey in the wild</p>	<p>S. Smith Collaborative approaches and actionable solutions for the transboundary African Great Lakes</p>	<p>B. Frey Saginaw Bay to Western Lake Erie Coastal Wetland Conservation Blueprint</p>
2:20	<p>W. Stott Development of Genomic Resources for Monitoring and Monitoring Diversity and Harvest (<i>Streblospio leucicbthys</i>)</p>	<p>R. Valipour High-resolution modeling to simulate mussels' nutrient recycling and Cladophora growth in Lake Erie</p>	<p>M. Jones Casting toward shore: vertical movements reveal timing and duration of shoreward migration in sea lamprey</p>	<p>R. Stewart Is Lake Nipigon Part of Great Lakes Management? Community-Based Monitoring and Governance Opportunities in the Lake Superior Basin</p>	<p>D. Kraus Identifying Key Biodiversity Areas to support wetland conservation in the Great Lakes</p>
2:40	<p>J. Bonilla-Gomez Cisco fever in Saginaw Bay, a multi-agency effort seeking to restore a native species</p>	<p>D. Rucinski Advancement and Application of the 3-Dimensional Lake Erie Ecosystem Model (LEEM)</p>	<p>A. Nalesnik Larger larval Sea Lamprey have longer survival times when exposed to the lampricide 3-trifluoromethyl-4-nitrophenol</p>	<p>N. Shrestha Western Lake Ontario Land to Lake Invasive - A collaborative approach towards Lake Ontario health and resilience.</p>	<p>Z. Swan Capitalizing on the Capabilities of Sensor Network Systems in H2Ohio Wetlands</p>
3:00	<p>M. Herbert Evaluating the distribution of Lake Whitefish tributary spawning runs and the potential to restore them</p>	<p>X. Zhou Climate Change Impact on Lake Michigan Phytoplankton: A Biophysical Modeling Study</p>	<p>Z. Jones Effects of winter phenology on the activity and behaviour of an invasive warmwater predator fish</p>	<p>M. Rodman One Block at a Time: Equitable Adaptation through Green Infrastructure</p>	<p>M. Battaglia Assessment of Great Lakes Coastal Wetland Inundation Extent with Synthetic Aperture Radar</p>
3:20	Break				

Martis	Mercuri	Saturni	Solis	
<p>The Intersection of Natural/Social Sciences and Institutions in Restoration <i>Chairs: Mike Shriberg, John Bratton</i></p>	<p>Great Lakes Decadal Science Plan: Preparing for What the Future Will Bring <i>Chairs: Matthew Child, Gail Krantzberg, Lizhu Wang, Val Klump</i></p>	<p>Celebrating the Contributions of Prof. William Taylor, Michigan State University <i>Chairs: Andrew Muir, Abigail Lynch</i></p>	<p>Multi-Nation Science: The Benefits and Challenges of Science Spanning Borders <i>Chairs: Jessica Ives, Ted Lawrence, Alfred Achieng</i></p>	
<p><u>O. Schloegel</u> Cultivating Science-Policy-Practitioner Partnerships in Wetland Restoration</p>	<p><u>V. Klump</u> Towards the Development of a Decadal-Scale Great Lakes Science Plan</p>	<p><u>A. Muir</u> Everyone needs a graduate student</p>	<p><u>M. Ngochera</u> Past and present research initiatives in Lake Malawi/Nyasa/Niassa: Opportunities and challenges in conducting transboundary research</p>	1:40
<p><u>M. Shriberg</u> Resourcing Coastal Resilience in Michigan</p>	<p><u>D. Lee</u> Delivering Science, Service and Stewardship: Insights on Governance and Management of Complex Science Programs</p>	<p><u>A. Muir</u> Everyone needs a graduate student</p>	<p><u>T. Lawrence</u> The influence of colonization on research of freshwater lakes of Africa: Breaking the cycle</p>	2:00
<p><u>W. Pevec</u> Great Lakes Marine Protected Areas: Designating and Managing for Success</p>	<p><u>J. Marty</u> Building a Framework Toward Bridging Traditional Ecological Knowledge and Western Science to Support Decision Making within the Great Lakes.</p>	<p><u>A. Lynch</u> Taylor-isms: the Wit and Witisms of Professor William W. Taylor</p>	<p><u>C. Vandergoot</u> Benefits, Challenges and Opportunities of Conducting Multi-Jurisdictional Fish Movement Research on the Laurentian Great Lakes</p>	2:20
<p><u>J. Coffin-Schmitt</u> Urban fishers demonstrate diverse perceptions and practices within the Niagara River Area of Concern</p>	<p><u>P. Czajkowski</u> The Global Center for Understanding Climate Change Impacts on Transboundary Waters</p>	<p><u>S. Cooke</u> Modelling what professional service should be - the Bill Taylor approach.</p>	<p><u>X. Chang</u> From Plateau Lakes to the Laurentian Great Lakes: collaborations between Windsor (Canada) and Yunnan (China)</p>	2:40
<p><u>M. Chirwa</u> Power dynamics and value chain of silver cyprinid in Lake Victoria, Uganda</p>	<p><u>J. Livernois</u> Developing an ecosystem valuation plan for the Great Lakes</p>	<p><u>D. Infante</u> It's about the people: A key to fisheries management</p>	<p><u>J. Namugize</u> Water quality and sediment monitoring in the Nile Basin countries</p>	3:00
Break				3:20

TUESDAY, MAY 21

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Toward a Resilient and Reciprocal Relationship Between Coregonines and Humans, I of II Chairs: David Bunnell, Erin Dunlop, Ryan Lauzon, Jason Smith</p>	<p>Ecological Modeling and Physical-Biological Interactions in Large Lakes and Their Watersheds, I of II Chairs: Reza Valipour, Mark Rowe, Casey Godwin, Josef Ackerman</p>	<p>Aquatic Invasive Species Research Chair: Rochelle Sturtevant</p>	<p>Co-Producing Knowledge and Co-Innovating Solutions—From Local to Global Waters Chairs: Navjot Dhaliwal, Fani Tsaroucha, Ali Mokdad</p>	<p>Advances in Wetland Science: Connecting the Land, Water, and People, I of II Chairs: Rebecca Rooney, Andrea Kirkwood, Courtney Robichaud, Tyler Hampton</p>
3:40	<p>D. Smith Translocation: A Means to Re-establishing Tributary Spawning Lake Whitefish</p>	<p>S. Lin The impact of ice model on the multi-year water quality simulation in Lake Winnipeg</p>	<p>D. Weik Limited Catch: How Back-Calculated Growth Histories for Grass Carp in Lake Erie can Inform Management</p>	<p>Circle Discussion: Co-Producing Knowledge and Co-Innovating Solutions</p>	<p>D. Vander Bilt Using Multitemporal Remote Sensing to Monitor Treatment and Restoration of Phragmites infested Great Lakes Wetlands</p>
4:00	<p>M. Morphet A bottle full of Dikameg: A collaborative effort to monitor a spawning Dikameg population and a potential egg predator using environmental DNA barcoding in</p>	<p>Y. Fernando Understanding the Interactions between Cladophora, Dreissenid Mussels, and Phytoplankton: A 0-D (Box-Model) Approach</p>	<p>K. Flanigan Two analytical methods for calculating sampling effort of an invasive fish</p>		<p>A. Bozimowski Sonar data provide insights into fish passage and habitat use of restored coastal wetlands</p>
4:20	<p>A. Koeberle Acoustic telemetry and eDNA to evaluate cisco restoration in an inland lake</p>	<p>N. Kayitesi Modeling Land Use Land Cover Change and hydrological processes in the African Great Lakes region: case study of the Lake Kivu catchment, Rwanda</p>	<p>R. DiPuccio Combining $87\text{Sr}/86\text{Sr}$ and $\text{Sr}:\text{Ca}$ Data to Determine Natal Rivers of Grass Carp in Lake Erie</p>		<p>D. Montocchio Where's Walleye? The search for a modern fish survey technique to study ghost forests in coastal wetlands</p>
4:40	<p>N. Berry UV exposure induces hatching of Adikameg eggs</p>	<p>F. Eghe Developing a Sediment-Specific Multimetric Index (SMMI) for Assessing the Effects of Fine Sediments in the Ogba River and its Tributaries, Edo State, Nigeria</p>	<p>J. Wu Predicting Black Carp (<i>Mylopharyngodon piceus</i>) age at first sexual maturity in different environments with temperature</p>		<p>A. Kramarenko Assessing Waterfowl Forage Quality change following invasive Phragmites suppression Using Vegetative Forage Quality Index</p>

Martis	Mercuri	Saturni	Solis	
<p>Connecting Youth to the Great Lakes through Education <i>Chairs: Kristin TePas, Megan Gunn, Emilie DeRochie-Poirier, Alysse Kennedy, Eric Jackman</i></p>	<p>Great Lakes Decadal Science Plan: Preparing for What the Future Will Bring <i>Chairs: Matthew Child, Gail Krantzberg, Lizhu Wang, Val Klump</i></p>	<p>Celebrating the Contributions of Prof. William Taylor, Michigan State University <i>Chairs: Andrew Muir, Abigail J Lynch</i></p>	<p>Multi-Nation Science: The Benefits and Challenges of Science Spanning Borders <i>Chairs: Jessica Ives, Ted Lawrence, Alfred Achieng</i></p>	
<p>A. Comar BOTtttle: Engaging with underserved and underrepresented students to pilot marine debris removal technologies</p>	<p>C. Winslow Development of a Great Lakes Community Science Guidebook</p>	<p>N. Leonard Effective Mentoring ‘a la’ Taylor Style</p>	<p>C. Atuhaire Remote Sensing for Monitoring Lake Victoria Water Quality: Challenges, Achievements and Future Research</p>	3:40
<p>E. DeRochie Inspiring Action for the Great Lakes: The Great River Rapport’s Change Maker Series</p>	<p>R. Rooney Developing frameworks for monitoring and assessing the ecological risk of microplastics in the Great Lakes</p>	<p>K. Weaver Student to sherpa to supervisor - benefiting from the unconventional leadership stylings of Dr. Taylor</p>	<p>M. Gaden Cross-border science, sea lamprey control, and management of the shared Great Lakes fishery</p>	4:00
<p>A. Belle Incorporating Virtual Reality Into Environmental Education To Connect Youth To The Great Lakes</p>	<p>M. Twiss Status of winter science in the Great Lakes: defining future needs</p>	<p>M. Hansen Lake Trout Restoration in Lake Superior: A Branch in Bill Taylor’s Academic Tree</p>	<p>A. Migeni Advisory Groups: A Sustainable Framework for Strengthening Collaboration and Sound-Management of the African Great Lakes Resources</p>	4:20
<p>I. Barrette-Ng myWATERSHED: Accelerating sustainability stewards of the future</p>	<p>L. Johnson Formalizing an Early Warning System for the Great Lakes for Future Protection</p>	<p>D. Beard First Global Inland Fisheries Summit; or how we learned to love the number 47</p>	<p>J. Ikwaput Nyeko Limitations for informed decision making and better management of the transboundary Lake Albert resources.</p>	4:40

TUESDAY, MAY 21

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Toward a Resilient and Reciprocal Relationship Between Coregonines and Humans, I of II <i>Chairs: David Bunnell, Erin Dunlop, Ryan Lauzon, Jason Smith</i></p>		<p>Aquatic Invasive Species Research <i>Chair: Rochelle Sturtevant</i></p>		<p>Advances in Wetland Science: Connecting the Land, Water, and People, I of II <i>Chairs: Rebecca Rooney, Andrea Kirkwood, Courtney Robichaud, Tyler Hampton</i></p>
5:00	<p><u>E. Bloomfield</u> Seasonal trophic ecology of lake whitefish in Lake Ontario</p>		<p><u>A. Galloway</u> MusselFinder: Automatic Dreissenid mussel analysis from AUV imagery in Lake Michigan</p>		<p><u>J. Pickering</u> Spatio-temporal changes of a breeding bird community over 30 years at Long Point, Ontario, Canada</p>
5:20			<p><u>S. Daniel</u> Invasion dynamics of New Zealand mud snail (<i>Potamopyrgus antipodarum</i>) in the Laurentian Great Lakes</p>		<p><u>J. Bowman</u> Testing for causes of long-term muskrat declines in Great Lakes coastal wetlands</p>

TUESDAY, MAY 21

Martis	Mercuri	Saturni	Solis	
<p>Connecting Youth to the Great Lakes through Education <i>Chairs: Kristin TePas, Megan Gunn, Emilie DeRochie-Poirier, Alysse Kennedy, Eric Jackman</i></p>	<p>Great Lakes Decadal Science Plan: Preparing for What the Future Will Bring <i>Chairs: Matthew Child, Gail Krantzberg, Lizhu Wang, Val Klump</i></p>	<p>Celebrating the Contributions of Prof. William Taylor, Michigan State University <i>Chairs: Andrew Muir, Abigail Lynch</i></p>	<p>Multi-Nation Science: The Benefits and Challenges of Science Spanning Borders <i>Chairs: Jessica Ives, Ted Lawrence, Alfred Achieng</i></p>	
<p><u>K. TePas</u> Overview of Social Science Research on the Shipboard Science Workshop Impacts</p>	<p>Discussion: IAGLR delegate perspectives on the Great Lakes Decadal Science Plan</p>	<p><u>D. Hayes</u> Bill Taylor's Impact on Inland Fisheries Management</p>	<p>Small group discussions around multi-nation freshwater research and management</p>	5:00
		<p><u>M. Munawar</u> Celebrating Professor Taylor's partnership with the Aquatic Ecosystem Health & Management Society</p>		5:20

WEDNESDAY, MAY 22

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Toward a Resilient and Reciprocal Relationship Between Coregonines and Humans, II of II <i>Chairs: David Bunnell, Erin Dunlop, Ryan Lauzon, Jason Smith</i></p>	<p>Ecological Modeling and Physical-Biological Interactions in Large Lakes and Their Watersheds, II of II <i>Chairs: Reza Valipour, Mark Rowe, Casey Godwin, Josef Ackerman</i></p>	<p>Spatial and Temporal Dynamics of Lower Trophic Levels, I of II <i>Chairs: James Watkins, Lyubov Burlakova, Alexander Karatayev, Euan Reavie</i></p>		<p>Advances in Wetland Science: Connecting the Land, Water, and People, II of II <i>Chairs: Rebecca Rooney, Andrea Kirkwood, Courtney Robichaud, Tyler Hampton</i></p>
8:00	<p><u>E. Dunlop</u> Early life history dynamics of coregonines in lakes Huron and Simcoe</p>		<p><u>C. Godwin</u> A Call for Monitoring and Tracking Biodiversity in the Laurentian Great Lakes</p>		<p><u>R. Simard</u> Riparian vegetational biodiversity and environmental gradients in Southern Ontario created wetlands</p>
8:20	<p><u>T. Brown</u> Reconstructing half a century of lake whitefish and cisco recruitment dynamics across the Great Lakes</p>	<p><u>U. Ghimire</u> Investigating the impacts of agricultural best management practices on nitrous oxide emissions</p>	<p><u>E. Reavie</u> Great Lakes phytoplankton are changing in many ways and for many reasons</p>		<p><u>N. Basu</u> Farmed wetlands: The outsized role of small agricultural wetlands in basin scale nutrient retention</p>
8:40	<p><u>J. Trumpickas</u> Seasonal spatial distribution of lake whitefish in Lake Simcoe, Ontario</p>	<p><u>W. Fetzer</u> Linking environmental drivers and fish community dynamics across the Great Lakes</p>	<p><u>K. Kovalenko</u> Fluorometry versus taxonomic phytoplankton assessments in the Great Lakes</p>		<p><u>A. Kirkwood</u> Modelling of discrete and continuous data reveals role of coastal wetlands in nearshore water quality of Lake Ontario</p>
9:00	<p><u>K. A. Hoyer</u> Vulnerability of Larval and Juvenile Lake Whitefish (<i>Coregonus clupeaformis</i>) and Cisco (<i>C. artedii</i>) to Introduced Nearshore Predators Round Goby (<i>Neogobius melanostomus</i>) and Rainbow Smelt (<i>Osmerus mordax</i>)</p>	<p><u>W. Shi</u> Earlier hatching affects the larval dispersal in Lake Erie</p>	<p><u>M. Hernandez Limon</u> Drivers of free-living and particle-associated prokaryotic community structure in the Laurentian Great Lakes</p>		<p><u>A. Mokdad</u> Developing community-based wetland monitoring in the Great Lakes</p>
9:20	Break				

WEDNESDAY, MAY 22

Martis	Mercuri	Saturni	Solis	
<p>Urban Aquatic Ecosystems: Foes or Allies in the Conservation of the Laurentian Great Lakes? <i>Chairs: Piata Marques, Edina Illyes, Erik Dean</i></p>	<p>General Contributions: Fish & Fisheries <i>Chair: Geoffrey Chavula</i></p>	<p>Nutrient Export from Urban and Rural Watersheds to Large Lakes: Addressing the Diversity of Nutrient Sources, Speciation and Transport Pathways, and Their In-Lake Biogeochemical Impacts, I of II <i>Chairs: Serghei Bocaniov, Zahra Akbarzadeh, Philippe Van Cappellen</i></p>	<p>Sustainability of Great Lake Systems: A One Health, All Hands Approach <i>Chairs: Donna Kashian, Halima Salah, Nadia Harduar Catherine Febria</i></p>	
<p><u>P. Marques</u> Invaders across the cityscape: does level of urbanization influence the invasive potential of the goldfish?</p>	<p><u>M. Dender</u> A Brief Overview of Fisheries Offsetting and Compensation in Ontario's Construction Landscape</p>	<p><u>F. Yuan</u> Remarkable resilience of Lake Erie carbon dynamics attributed to carbonate weathering?</p>	<p><u>D. Kashian</u> Centering Sustainability in the Great Lakes through the United Nations Regional Center of Expertise</p>	8:00
<p><u>E. Illyes</u> Pets going wild? Probability of Goldfish (<i>Carassius auratus</i>) dispersal from urban ponds</p>	<p><u>P. Euclide</u> What the Pareto principal can tell us about the Lake Michigan Salmonid fishery</p>	<p><u>E. DiBiasio</u> Evaluating oxygen consuming organic matter in the central and eastern basins of Lake Erie using stable carbon isotopes</p>	<p><u>R. Semyalo</u> Environmental Impacts and Integrated Water Resources Management in Ugandan Aquaculture: A Study Fish farms in the Lake Victoria Basin.</p>	8:20
<p><u>N. Turner</u> Detecting goldfish (<i>Carassius auratus</i>) and native fishes in urban ponds using eDNA and conventional fish sampling</p>	<p><u>J. Walakira</u> Emerging Pathogens Isolated from Farmed Tilapia: Lake Victoria, Uganda</p>	<p><u>A. Elsayed</u> Application of machine learning algorithms for quantification of nutrient transport in two distinct agricultural settings</p>	<p><u>H. Nakiyende</u> Navigating Data Gaps: Employing Stock Assessment Models for Sustainable Artisanal Fisheries in Lake Albert, East Africa.</p>	8:40
<p><u>L. McGill</u> Acoustic Tracking of Largemouth Bass in a Busy, Steel-Walled Urban Waterway</p>	<p><u>O. Galloway</u> Physical enrichment as a tool for minimizing the environmental mismatch in hatchery-reared Lake sturgeon</p>	<p><u>X. Liu</u> Attributing Historical Nutrient Variations to Climate and Agricultural Practices Changes in the Maumee River Watershed</p>	<p><u>A. Getahun</u> Lake Turkana: Status of world's largest permanent desert and alkaline lake</p>	9:00
Break				9:20

WEDNESDAY, MAY 22

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Toward a Resilient and Reciprocal Relationship Between Coregonines and Humans, II of II Chairs: David Bunnell, Erin Dunlop, Ryan Lauzon, Jason Smith</p>	<p>Ecological Modeling and Physical-Biological Interactions in Large Lakes and Their Watersheds, II of II Chairs: Reza Valipour, Mark Rowe, Casey Godwin, Josef Ackerman</p>	<p>Spatial and Temporal Dynamics of Lower Trophic Levels, I of II Chairs: James Watkins, Lyubov Burlakova, Alexander Karatayev, Euan Reavie</p>		<p>Communicating About Great Lakes Invasive Species Chair: El Lower</p>
9:40	<p>I. Hebert Variation in the feeding success of larval lake whitefish from Lake Huron.</p>	<p>B. Kuyumcu Modelling the fate of Walleye eggs in western Lake Erie using a particle tracking model</p>	<p>E. Alexson Diversity and abundance of protozoa in the Laurentian Great Lakes</p>		<p>T. Gruninger Great Lakes Aquatic Invasive Species Landing Blitz</p>
10:00	<p>K. Skubik Helping Ojibwapi (Cisco, Coregonus artedii) using Geometric Morphometrics</p>	<p>A. McReynolds Shifts in rainbow smelt distributions during alewife invasion in Lake Champlain</p>	<p>A. Scofield Long-term trends in Great Lakes shallow zooplankton communities</p>		<p>S. Carlton Clean, Drain, Why? Aquatic invasive species prevention behavior among Great Lakes boaters</p>
10:20	<p>B. Redford A Saugeen Ojibway Nation methodology for applying Saugeen Ojibway knowledge in dikameg (Coregonus clupeaformis) research.</p>	<p>K. Chong Navigating turbulence: the effects of eddy size on the swimming performance of walleye (Sander vitreus) larvae</p>	<p>C. Marshall Seasonal Zooplankton Community Trends: Lake Ontario CSMI 2018</p>		<p>I. Paulsen Exploring New Pathways: Teachers' and Culinary Market's Attitudes Towards Invasive Crayfish</p>
10:40		<p>C. Farrow Size matters: Effects of propagule size on dispersal in the Speed River, ON.</p>	<p>I. Armstrong Long-term zooplankton change driven by multiple stressors in the Bay of Quinte Area of Concern</p>		<p>E. Lower Inclusive Language in AIS Communication - A Workshop Report</p>
11:00	Openings & Presentation of Student Awards				
11:30	<p>Plenary by Dr. Kelsey Leonard Introduced by Dr. Bev Jacobs Augustus Ballroom I & II</p>				
12:30	Lunch (on your own)				

WEDNESDAY, MAY 22

Martis	Mercuri	Saturni	Solis	
<p>Urban Aquatic Ecosystems: Foes or Allies in the Conservation of the Laurentian Great Lakes? <i>Chairs: Piata Marques, Edina Illyes, Erik Dean</i></p>	<p>General Contributions: Fish & Fisheries <i>Chair: Geoffrey Chavula</i></p>	<p>Nutrient Export from Urban and Rural Watersheds to Large Lakes...I of II <i>Chairs: Serghei Bocaniov, Zahra Akbarzadeh, Philippe Van Cappellen</i></p>	<p>Sustainability of Great Lake Systems: A One Health, All Hands Approach <i>Chairs: Donna Kashian, Halima Salah, Nadia Harduar, Catherine Febria</i></p>	
<p>Z. MacFarlane Storm-Water Retention & Habitat: Impacts of Elevated Salinity on Pond Dwelling Amphibians</p>	<p>J. Midwood Spatio-temporal comparison of nearshore fish communities in Hamilton Harbour and Bay of Quinte AOCs</p>	<p>S. Chaudhary Characterizing First Flush Behavior in Urban Subwatersheds Located in Continental Climates</p>	<p>N. Vojno Casting Ripples: The potential of watershed based civic assemblies</p>	9:40
<p>P. MacKeigan Responding to oil spills in urban waterways: A case study from the National Environmental Emergencies Centre</p>	<p>I. Valentine Climate Change and Land Use Impacts on Hydrology of Ethiopia Rift Valley River Basin</p>	<p>S. Jivani Monitoring and Modelling Phosphorus Exports from a Cold Climate Urban Subwatershed</p>	<p>C. Febria Local to Global: Empowering early career across the Great Lakes to engage with the UN intergovernmental platform on biodiversity and ecosystem services (IPBES)</p>	10:00
<p>Urban Aquatic Ecosystems Reception</p>	<p>H. Glandon The effects of tissue, lipid content, and time on predator-prey fatty acid profile resemblance</p>	<p>B. Zhou How efficient are bioretention cells in mitigating urban stormwater phosphorus and nitrogen export?</p>	<p>H. Salah Comparing Global Anthropogenic Emission Inventories and Their Impacts on Air Quality and Human Health</p>	10:20
	<p>K. Adeli Thiamine concentration and heart morphology of alternative reproductive life histories in Chinook salmon (<i>Oncorhynchus tshawytscha</i>)</p>	<p>G. Arhonditsis Integrating Regional Assessment with Watershed Planning and Field-level Implementation</p>	<p>J. Elder Great Lakes sustainability requires social, economic, and institutional transformation</p>	10:40
Openings & Presentation of Student Awards				11:00
<p>Plenary by Dr. Kelsey Leonard Introduced by Dr. Bev Jacobs Augustus Ballroom I & II</p>				11:30
Lunch (on your own)				12:30

THURSDAY, MAY 23

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Shared Visions for Holistic and Indigenous-Led Stewardship in the Great Lakes <i>Chairs: Shayenna Nolan, Janessa Esquible, Alexander Duncan, Catherine Febria</i></p>	<p>NOAA Great Lakes Environmental Research Laboratory: Fifty Years of Science in Service to Society, I of II <i>Chairs: Mark Rowe, Gabrielle Farina, Craig Stow, Casey Godwin</i></p>	<p>Spatial and Temporal Dynamics of Lower Trophic Levels, II of II <i>Chairs: James Watkins, Lyubov Burlakova, Alexander Karatayev, Euan Reavie</i></p>	<p>Undergraduate Research Experiences in Lake Erie and Its Watersheds <i>Chairs: George Bullerjahn, Suzanne Gray, Thomas Bridgeman, Justin Chaffin</i></p>	<p>From Data to Best Management Practices: Toward Data-Driven Field and Controlled-Environment Agriculture <i>Chair: Cameron Proctor</i></p>
8:00		<p>D. Lee GLERL at 50 - A Review of Fifty Years of Science in Service to Society</p>	<p>K. Mitchell Zooplankton grazing preferences throughout a cyanobacterial bloom season in Western Lake Erie</p>		
8:20		<p>D. Reid NOAA's Great Lakes Environmental Research Laboratory the first 25 years: Origin, Growth, Struggles, and Scientific Contributions</p>	<p>E. Whitmore-Stolar Utilizing metabarcoding and traditional taxonomy to evaluate zooplankton community structure.</p>	<p>H. Esber Wetland surface water extent at St. Joseph's River Restoration Project using PyGEE-SWTtoolbox</p>	<p>H. Mohebzadeh Analyzing the effectiveness of best management practices on ephemeral gully erosion using the AnnAGNPS model</p>
8:40		<p>D. Schwab Great Lakes Coastal Forecasting System - the Long and Winding Road from Research to Operations</p>	<p>J. Watkins Lake Michigan Mysids- Continued decline or emerging signs of recovery?</p>	<p>S. Brown The Defiance Research Alliance: What is it and where are we going?</p>	<p>C. Proctor Spatial and Temporal Trends in Greenhouse Plant Physiology</p>
9:00	<p>D. Martin Hill Kayanní:yo ('a good path'): Working with Indigenous ecological knowledge to advance resiliency</p>	<p>L. Fry GLERL Hydrology collaborations to advance monitoring, understanding and prediction of water level variability</p>	<p>K. Nasworthy Vertical distribution and migration of Mysis diluviana in the upper Great Lakes assessed from uncrewed surface vessels</p>	<p>G. Watson Phosphorus Dynamics in the Sediment of a Lake Erie Coastal Wetland</p>	<p>Z. Diloreto Calcinated Eggshell and Woodchip Bioreactors - Upcycling Waste Products for Cost-Effective P Removal in A Circular Economy</p>
9:20	Break				

THURSDAY, MAY 23

Martis	Mercuri	Saturni	Solis	
<p>Plastic Debris in the Great Lakes Basin: Sources, Impacts, and Best Actions <i>Chairs: Haley Dalian, Patricia Corcoran, Lisa Sealock, Julian Aherne</i></p>	<p>Adaptive Management and Transboundary Collaboration in the Great Lakes <i>Chairs: Marc Nelitz, John Bratton, Jimena Eyzaguirre</i></p>	<p>Nutrient Export from Urban and Rural Watersheds to Large Lakes...II of II <i>Chairs: Serghei Bocaniov, Zahra Akbarzadeh, Philippe Van Cappellen</i></p>	<p>Oil Spill Science in the Great Lakes: One Water, Many Perspectives <i>Chairs: Kelsey Prihoda, Mark Burrows, Ken Lee, Jérôme Marty</i></p>	
<p><u>R. Akhbarizadeh</u> Microplastics load into Lake Ontario through the Etobicoke creek watershed</p>	<p><u>M. Nelitz and J. Bratton</u> Opening Presentation: Adaptive Management and Transboundary Collaboration in the Great Lakes</p>		<p><u>K. Lee</u> The Need to Advance Oil Spill Science and Response Strategies for Inland Waters</p>	8:00
<p><u>B. Welsh</u> Microplastic Distribution during the Ice and Ice-free Period in a Background Headwater Lake, Muskoka, Ontario</p>	<p><u>S. Tank</u> The Phragmites Adaptive Management Framework: Implementation and refinement from 2017-present</p>	<p><u>M. Kaur</u> Frequency of threshold events affecting non-point source pollution in agricultural watersheds in Southern Ontario, Canada</p>	<p><u>N. Saborimanesh</u> Effect of Sunken Bitumen on Freshwater Sediment Microbial Communities and Nitrification</p>	8:20
<p><u>M. Watson</u> Temporal trends in microplastics deposition to rural reservoirs in the Grand River Watershed</p>	<p><u>A. McGowan</u> Sustaining Long-term Adaptive Water Quality Monitoring in Saginaw Bay and the Great Lakes</p>	<p><u>A. Javed</u> Evaluating the effectiveness of best management practices in mitigating phosphorus export from the Napanee River and Wilton Creek agricultural watersheds</p>	<p><u>J. Olowoyo</u> Catalytic effects of Iron-based particles on the combustion of crude oils: an approach for oil spill response</p>	8:40
<p><u>J. Feng</u> Microplastic Pollution in Water, Sediment, Soils, and Air of Southwestern Ontario, Great Lakes Basin</p>	<p><u>D. Ferreira</u> Great Lakes - St. Lawrence River Adaptive Management Committee - Adaptive management in action</p>	<p><u>R. Chang</u> SWAT modelling of the Nitrogen Cycle in the Bay of Quinte Watersheds</p>	<p><u>P. Guo</u> Comparison of Polyester Foams for Decanted Water Treatment in Oil Spill Response</p>	9:00
Break				9:20

THURSDAY, MAY 23

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Shared Visions for Holistic and Indigenous-Led Stewardship in the Great Lakes <i>Chairs: Shayenna Nolan, Janessa Esquible, Alexander Duncan, Catherine Febria</i></p>	<p>NOAA Great Lakes Environmental Research Lab: Fifty Years of Science in Service to Society, I of II <i>Chairs: Mark Rowe, Gabrielle Farina, Craig Stow, Casey Godwin</i></p>	<p>Spatial and Temporal Dynamics of Lower Trophic Levels, II of II <i>Chairs: James Watkins, Lyubov Burlakova, Alexander Karatayev, Euan Reavie</i></p>	<p>Undergraduate Research Experiences in Lake Erie and Its Watersheds <i>Chairs: George Bullerjahn, Suzanne Gray, Thomas Bridgeman, Justin Chaffin</i></p>	<p>From Data to Best Management Practices: Toward Data-Driven Field and Controlled-Environment Agriculture <i>Chair: Cameron Proctor</i></p>
9:40	<p>S. Nolan Decolonizing river health and governance: Indigenous-led freshwater assessments using community input and science tools</p>	<p>J. Kessler 5 Decades of Great Lakes Ice Cover Data</p>	<p>S. Lawhun As Different as Night and Day: Using ponar counts to assess Mysis benthic habitat use</p>	<p>L. Busselle Effects of Some Flow-In/No-Flow-Out Wetland Pools on Phosphorous and Nitrogen Export</p>	<p>S. Zamaria Towards comprehensive calibration of a SWAT model for agricultural watershed management in the Lake Erie basin: Irrigation scheduling models</p>
10:00	<p>N. Urban Convergence Research and Lessons from Geese</p>	<p>J. Wang GLERL's 50 Years of Great Lakes Ice Modeling and Prediction</p>	<p>A. Scofield Long-Term Monitoring of Muddy Macrofauna - EPA GLNPO's Great Lakes Benthic Monitoring Program</p>	<p>M. Rettig Characterizing the taxonomic diversity and community composition of eukaryotic microbes in Sandusky Bay, Lake Erie</p>	<p>L. Ahmadi Understanding fertilizer choice using detailed land management surveys and multinomial logistic regression</p>
10:20	<p>A. Duncan Listening to rightsholders: Bimiiizii (sea lamprey) in the Great Lakes</p>	<p>M. Rowe Contributions of NOAA GLERL and Collaborators to Biophysical Modeling in the Great Lakes</p>	<p>A. Kryshak Depth gradients in nearshore benthic food web structure in Lake Michigan</p>	<p>E. Pierce Testing Round Goby (Neogobius melanostomus) boldness and foraging in multiple turbidity and predator conditions</p>	<p>D. Xiao Magnetic Resonance Imaging (MRI) for Agricultural Applications</p>
10:40	<p>R. Lauzon A two eyed seeing approach to understand rapidly evolving food web dynamics in Lake Huron.</p>	<p>E. Rutherford A Brief Fish-Eye View of GLERL's Physical Science Contributions to Great Lakes Ecological Models</p>	<p>L. Burlakova Decadal changes in Lake Superior benthic community</p>	<p>M. Penka Effects of Turbidity on Reaction Distance of Smallmouth Bass to Fishing Lures of Different Colors</p>	<p>C. Proctor The Advancement of Minirhizotrons for Precision Farming</p>
11:00	Openings & Presentation of Journal Awards				
11:30	Plenary by Dr. Tracie Baker Augustus Ballroom I & II				
12:30	Lunch (on your own) or Navigating the Diversity of Aquatic Science Careers Panel/Boxed Lunch (for students & early career research; pre-registration required) <i>Sponsored by WSP</i>				

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<p>Plastic Debris in the Great Lakes Basin: Sources, Impacts, and Best Actions Chairs: <i>Haley Dalian, Patricia Corcoran, Lisa Sealock, Julian Aherne</i></p>	<p>Adaptive Management and Transboundary Collaboration in the Great Lakes Chairs: <i>Marc Nelitz, John Bratton, Jimena Eyzaguirre</i></p>	<p>Nutrient Export from Urban and Rural Watersheds to Large Lakes...II of II Chairs: <i>Serghei Bocaniov, Zahra Akbarzadeh, Philippe Van Cappellen</i></p>	<p>Oil Spill Science in the Great Lakes: One Water, Many Perspectives Chairs: <i>Kelsey Prihoda, Mark Burrows, Ken Lee, Jérôme Marty</i></p>	
<p><u>P. Corcoran</u> An Update on the Factors Controlling Plastic Debris Deposition in Urban Stormwater Ponds of London, Ontario, Canada</p>	<p><u>C. Stow</u> Adaptive Management of Nutrient Loading to Lake Erie: Binational Evaluation for 2017 - 2021</p>	<p><u>E. Smith</u> Long-term nutrient trends in the Upper St. Lawrence River: Implications for the Great Lakes Basin</p>	<p><u>W. Tian</u> Advancing hyper-crosslinked materials with high efficiency and reusability for oil spill response</p>	9:40
<p><u>H. Nguyen</u> Controls on microplastics accumulation in stormwater pond sediments</p>	<p>Panel Discussion and Closing Remarks: Adaptive Management and Transboundary Collaboration in the Great Lakes</p>	<p><u>S. Bocaniov</u> Re-eutrophication of large lakes: intensification of shoreline erosion as a potentially important source of additional phosphorus loading (a case study of the central basin of Lake Erie).</p>	<p><u>E. Holst</u> Oil & Chemical Spill Detection and Response within the Lake Erie Basin</p>	10:00
<p><u>B. Monteiro</u> Abundance and Characteristics of Microplastics in Urban Stormwater Ponds</p>		<p><u>P. Van Cappellen</u> A revised phosphorus mass balance model for Lake Erie and applications to eutrophication management</p>	<p><u>C. Rieder</u> Pilot-scale Test of a Foam-Based Filtration System for Cleaning Decanted Water in Oil Spill Responses</p>	10:20
<p><u>J. Kucharek</u> Mass balance modeling of anthropogenic debris in the Lake Ontario Watershed of Rochester, NY</p>		<p><u>Z. Akbarzadeh</u> Phosphorus dynamics in Lake Erie's littoral zone: Insights from a regionalized mass balance model</p>	<p><u>H. Bi</u> Exploration of a bio-based coating strategy as an oil spill response countermeasure</p>	10:40
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1:40	<p>M. Buell Community-led contaminants surveillance: Michipicoten biomonitoring studies</p>	<p>D. Mason Two and a half decades of food web modeling at NOAA GLERL</p>	<p>A. Szczepanski Dreissena composition and distribution in Lake Superior</p>	<p>A. Porter MiNet: A Michigan collaboration of 25 labs/partners working together to assess recreational beaches and wastewater</p>	<p>L. Shah Representing common crops in southern Ontario using the ecosys model</p>
2:00	<p>C. Jacobs Youth leadership in the Lakes with Bkejwanong Eco-Keepers from Walpole Island First Nation</p>	<p>T. Hook Applied Research Informing Management and Recovery of the Saginaw Bay Fish Assemblage</p>	<p>A. Karatayev Dreissena in Great Lakes: Population dynamics and population assessment using conventional method and videography</p>	<p>K. Nelson Title: Maximizing the Value of Lake Erie Water Data Through Water Intelligence</p>	<p>R. Saha Landuse changes and agricultural impacts on GHG emissions in a changing climate in Ontario, Canada</p>
2:20	<p>N. Beauchesne Co-creation with the Indigenous Youth Circle and Windsor's National Urban Park</p>	<p>R. Errera Advancements in HAB research since the Toledo Water Crisis: a decade of GLERL science</p>	<p>O. Makhutova (Kormilets) Dreissena spp. coverage: a tool for rapid assessment of mussel distribution and condition in the Great Lakes</p>	<p>T. Evans Assessing fish avoidance to motorized acoustic survey vessels using quiet uncrewed surface vessels in Lake Erie</p>	<p>B. O'Leary Investigating Groundwater Contamination through Phytoscreening in Neighborhoods of the Great Lakes Region</p>
2:40	<p>L. Legzdins Listen(ing) to the Waters: Visions for Crop Restoration on the Winnipeg River</p>	<p>H. Vanderploeg Grazing and predator-prey experiments that have changed our understanding Great Lakes food webs</p>	<p>M. Dittrich Geochemical heterogeneity at the sediment-water interface is linked to a presence of freshwater mussels in Lake Ontario</p>	<p>D. Otieno Spatio-temporal patterns of mercury and stable isotope in the lower food web of Winam Gulf, Lake Victoria.</p>	<p>A. Schmidt Ecological and Geological Response to the Introduction of a Nearshore Reef in Southern Lake Michigan.</p>
3:00	<p>B. Wall Maawanji'idiwag: Reflections on the journey of building a multi-national network to support Indigenous-led Great Lakes Research</p>	<p>A. Elgin Catching history in a Ponar: Documenting decades of dreissenid mussel invasion in Lake Michigan</p>	<p>O. Omone Taxonomic and Trait-based Responses of Invertebrate Odonate to Fine Sediment Stress and Grain-sizes in Afrotropical Rivers: Insights from the Niger Delta Region, Nigeria</p>	<p>E. Verhamme Small Tech = Big Impact on Great Lakes Science</p>	<p>M. Piskur Great Lakes St. Lawrence Trees Initiative</p>
3:20	Break				

WITHDRAWN

Martis	Mercuri	Saturni	Solis	
<p>Plastic Debris in the Great Lakes Basin: Sources, Impacts, and Best Actions Chairs: <i>Haley Dalian, Patricia Corcoran, Lisa Sealock, Jlegzdinsulian Aherne</i></p>	<p>Groundwater Influences on Surface Water Quantity, Quality, and Ecosystem Health Chairs: <i>Clare Robinson, Howard Reeves, Heather Brodie-Brown, David Rudolph</i></p>	<p>Nutrient Export from Urban and Rural Watersheds to Large Lakes...II of II Chairs: <i>Serghei Bocaniov, Zahra Akbarzadeh, Philippe Van Cappellen</i></p>	<p>Oil Spill Science in the Great Lakes: One Water, Many Perspectives Chairs: <i>Kelsey Pihoda, Mark Burrows, Ken Lee, Jérôme Marty</i></p>	
<p>S. Lavoie-Bernstein Comparing Sampling Methods for Measuring Atmospheric Microplastics in Rural and Urban Sites, using Laser Direct Infrared Spectroscopy (LDIR)</p>	<p>S. Holysh Groundwater insights within Lake Ontario’s north shore catchment</p>	<p>J. Garcia-Hernandez Optimization of Nutrient Reduction Measures Targeting Agricultural and Urban Sources around Lake Erie</p>	<p>F. Fitzpatrick New Tools for Planning and Tracking Oil Spills in Great Lakes Rivers</p>	1:40
<p>G. Kleinheinz Regional Approach to Marine Debris Interception and Removal in Northern Lake Michigan</p>	<p>Y. Gao Application of geospatial tool to estimate septic system wastewater effluent contributions to tributaries in the Canadian Lake Erie and Lake Simcoe Basin</p>	<p>P. Paul A Framework to Setup a Comprehensive Large-Scale Model for the Canadian Lake Erie Basin</p>	<p>B. Zhang Formation of the Next-Generation Dispersant by Using both Biosurfactants and Chemical Surfactants</p>	2:00
<p>A. Gillespie Microplastic characterization in municipal composts, biosolids, and amended agricultural soils.</p>	<p>C. Zanatta Using extended point temperature reconnaissance to understand groundwater discharge into Alder Creek, SW Ontario</p>	<p>J. Mai The Great Lakes Runoff Intercomparison Project (GRIP-GL)</p>	<p>Z. Wang Application of nanobubbles for the cleanup of sand polluted by oil spills</p>	2:20
<p>R. McNamee Microplastics accumulation in biofilm</p>	<p>V. Risch Evaluating Trends in Groundwater and Surface Water Chloride Concentrations within the Credit River Watershed</p>	<p>C. Wellen Integrated catchment science to assess nutrient loss pathways at headwater agricultural basins</p>	<p>M. Shriberg The Future of the Line 5 Oil Pipeline: Implications at the Climate/Water/Policy/Rights Nexus</p>	2:40
<p>A. Shakoor Impacts of Microcystis and Microplastics exposure on green frog tadpole length, weight, and body condition.</p>	<p>G. Hodgins Investigating the influence of groundwater discharge on the salinization of urban streams</p>	<p>D. Robertson Combining monitoring and modeling information to quantify watershed loading at various spatial and temporal scales</p>	<p>Q. Xin Bio-derived oils can have different behaviour and toxicity when spilled into waters</p>	3:00
Break				3:20

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3:40	<p>Panel: Shared Visions for Holistic and Indigenous-Led Stewardship in the Great Lakes</p>	<p>J. Krieger NOAA GLERL's Role in Supporting Initiatives to Manage Invasive Species in the Great Lakes and Beyond</p>	<p>L. Denecke Distribution of Round Goby across depth zones in The Laurentian Great Lakes</p>	<p>B. McNeill HGSRT: Connecting streams, lakes, and groundwater in real time and on the web</p>	<p>L. Kinsman-Costello Evaluating Nutrient Function Across Diverse Wetland Projects: The H2Ohio Wetland Monitoring Program, Ohio, USA</p>
4:00		<p>M. Ogdahl Investing in the Future of the Great Lakes: The Next Generation of Scientists</p>	<p>B. Hlina Temporal and spatial changes in isotopic trophic niches for multiple fish guilds in Lake Ontario</p>	<p>M. Chalira Assessing the effectiveness of a remotely operated underwater vehicle as a novel tool for monitoring freshwater fish biodiversity in lake malawi</p>	<p>K. Peterson What Mud Can Do For You: Soil Removal of Phosphorus from H2Ohio Wetlands</p>
4:20		<p>C. Stow Long-Term Temperature Monitoring in Lake Michigan</p>	<p>T. Algayer Tracking larval fish dispersal and relative abundance in Lake Michigan using environmental DNA</p>	<p>A. Said Cage Fish Farming and its Impact on the Livelihood of Fisher folk around Lake Victoria: A Case Study of Kamanga Village in Mwanza.</p>	<p>S. Newell Assessing Nutrient Load Reductions in H2Ohio Constructed Wetlands: Case Studies from Brooks Park and the Burntwood-Langenkamp Wetlands.</p>
4:40		<p>B. Biddanda Karstic Chronicles: Two Decades of Exploration of Submerged Sinkholes in the Great Lakes</p>		<p>J. Soter Closed Loop Forecasting within a Nearshore Safety Framework</p>	<p>M. Back Sediment-surface water nutrient exchange across vegetation patches in a diked Lake Erie wetland</p>

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<p>Plastic Debris in the Great Lakes Basin: Sources, Impacts, and Best Actions <i>Chairs: Haley Dalian, Patricia Corcoran, Lisa Sealock, Julian Aherne</i></p>	<p>Physical Processes in Lakes, I of II <i>Chairs: Jason Olsthoorn, Mathew Wells, David Cannon, Yi Hong</i></p>	<p>Sustainable Cage Aquaculture Practices in the Blue Economy <i>Chair: Mercy Chepkirui</i></p>	<p>Climate Impacts on Hydrodynamics, Ecosystems, Floods, Droughts and other Precipitation Extremes in the Great Lakes Basin <i>Chairs: David Cannon, Abby Hutson, Peter Johnson, Jia Wang</i></p>	
<p><u>N. Kokilathanan</u> Photosynthetic Activity of Freshwater and Marine Picocyanobacteria under Nanoplastic Exposure</p>	<p><u>J. Kooker</u> Restoring Littoral Drift Along a Jettied Shoreline</p> <p style="text-align: center; font-size: 2em; font-weight: bold; transform: rotate(-45deg);">WITHDRAWN</p>	<p><u>N. Ondieki</u> Impacts of cage farming on the ecology offshore of Lake Victoria</p>	<p><u>P. Johnson</u> Collaboration during times of uncertain water budgets</p>	3:40
<p><u>Q. Xiang</u> Metabolic profiling of Polystyrene nanoplastics toxicity in the gills of <i>Acrossocheilus yunnanensis</i></p>	<p><u>A. Kheiri Mazraeh</u> Wave effects on sediment transport along the Lake Ontario shoreline</p>	<p><u>S. Drosdowech</u> Replacing fishmeal with insect meal reduces waste phosphorus in farmed rainbow trout</p>	<p><u>J. Polidori</u> Understanding Great Lakes water use trends to support sustainable water resource management</p>	4:00
<p><u>J. Johnson</u> Macroplastics as artificial habitat for macroinvertebrates in river systems: A case study from selected minimal-impacted streams in the Niger Delta Region, Nigeria</p>	<p><u>J. Austin</u> Patterns of Lake Superior AIS dispersal illustrated by particle tracking</p>	<p><u>C. Ajambo</u> Women economic empowerment for bugiri district uganda through cage fish farming</p>	<p><u>K. Bailey</u> Spatial heterogeneity in water quality across the northern nearshore regions of the Great Lakes</p>	4:20
<p><u>H. Beda</u> A review on the status of plastic pollution in the african great lakes</p>	<p><u>A. Ghane</u> The Interaction Between Thermocline and Chemocline in a Pit Lake</p>	<p><u>J. Tuyisenge</u> Cage aquaculture in Lake Kivu-Rwanda: examining the implications for water quality and greenhouse gas emissions</p>	<p><u>M. Kayastha</u> How Could Lake-Effect Snow Storms Evolve in a Warming Future Climate?</p>	4:40

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5:00		<p><u>G. Leshkevich</u> Great Lakes CoastWatch Operations, Remote Sensing Research, and Product Development- 1990 - 2018</p>		<p><u>E. Hamilton</u> Building the World's Largest Smart Lake</p>	<p><u>S. Kaufman</u> Closer to the source: Improving Lake Erie water quality by restoring watershed wetlands</p>
5:20		<p><u>M. Sayers</u> Satellite Monitoring of Water Quality in the Great Lakes: The Past, Present, and Future</p>		<p><u>E. Kersh</u> Empowering stakeholders with scalable solutions</p>	<p><u>W. Midden</u> Evaluation of phosphorus and nitrogen export reduction by construction of geographically isolated</p>
5:40					

THURSDAY, MAY 23

Martis	Mercuri	Saturni	Solis	
<p>Plastic Debris in the Great Lakes Basin: Sources, Impacts, and Best Actions <i>Chairs: Haley Dalian, Patricia Corcoran, Lisa Sealock, Julian Aherne</i></p>	<p>Physical Processes in Lakes, I of II <i>Chairs: Jason Olsthoorn, Mathew Wells, David Cannon, Yi Hong</i></p>	<p>Sustainable Cage Aquaculture Practices in the Blue Economy <i>Chair: Mercy Chepkirui</i></p>	<p>Climate Impacts on Hydrodynamics, Ecosystems, Floods, Droughts and other Precipitation Extremes in the Great Lakes Basin <i>Chairs: David Cannon, Abby Hutson, Peter Johnson, Jia Wang</i></p>	
<p>Panel on the Minutiae of Microplastics Research: Challenges and Opportunities Across Mediums</p>	<p>S. Török Predicting stratification in a shallow lake in the light of changing climate and water levels</p>	<p>A. Hamisi A Review of Gender Perspective of Women and Youth Involvement in Aquaculture along Lake Victoria, Kenya.</p>	<p>D. Cannon Simulating Projected Climate Warming in the Laurentian Great Lakes Using FVCOM+CICE</p>	5:00
	<p>L. Shi Flow Patterns and Water Mixing in a Reservoir-Regulated Confluence</p>	<p>L. Mabo Growth performance of unimproved <i>Oreochromis tanganicae</i> (Gunther, 1894) under community-managed cages southern of Lake Tanganyika.</p>	<p>H. Zhang Climate Change Effects on the Lake Michigan Food Web: A Linked Earth System Model Approach</p>	5:20
	<p>C. Wu Temporal and Spatial Characteristics of Internal Seiches in Lake Champlain</p>			5:40

FRIDAY, MAY 24

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Community Science: Local Action for Resilience and Research <i>Chairs: Max Herzog, Gabrielle Parent-Doliner</i></p>		<p>The Role of Microbial Processes in the Assessment of the Great Lakes Ecosystem Health <i>Chairs: Sophie Crevecoeur, Thomas Reid</i></p>	<p>Water Quality, Ecosystem Services, and Beneficial Uses of Great Lakes Connecting Waters <i>Chairs: Edward Roseman, Robin DeBruyne, Katie Stammler, Michael Twiss</i></p>	<p>All Tributaries Great and Small: Connectors Across Ecosystems <i>Chairs: Laura Johnson, Nathan Manning, Colleen Cosgrove</i></p>
8:00	<p>S. Petrella Collaboration between Watershed Group and Regulatory Agency Key to Addressing Toxic Substances</p>		<p>M. Neudeck Comparison of HAB metatranscriptomes in Sandusky Bay, Lake Erie from 2018 and 2019</p>	<p>F. Breje Comparing the effects of different vegetation removal methods on macrophyte communities in the Kawartha Lakes</p>	
8:20	<p>J. Anderson Mitigation of Stormwater-Derived Debris: A Community-Based Approach</p>		<p>B. Larson Spatial and Temporal Variability of Sediment Microbial Communities Affect Biogeochemical Processes in Lake Superior</p>	<p>A. Tyner Using bioassessment as a tool to evaluate the effects of different aquatic vegetation control methods in the Kawartha Lakes</p>	<p>N. Singh Pervasive increases in soluble phosphorus concentrations in streams across the transboundary Great Lakes Drainage Basin</p>
8:40	<p>K. Kavanagh Water Rangers' community science evolution: From data to action</p>		<p>A. Suchy Patterns of greenhouse gas concentrations in coastal wetlands of the Laurentian Great Lakes</p>	<p>L. Derickx A journey towards restoration: past, present and future of the St. Marys River AOC</p>	<p>L. Malik Phosphorus Legacies: Impact of Past Land Use Practices on Today's Water Quality in the Lake Erie Basin</p>
9:00	<p>M. Duhamel A wetlands project designed for K-12 students to engage in citizen science</p>		<p>C. Crundwell Investigating Microbial Triggers of Greenhouse Gas Emissions in Agriculturally Influenced Aquatic Ecosystems</p>	<p>J. Serran Restoration of Beneficial Uses in the Detroit and St. Clair River Areas of Concern</p>	<p>K. Friesen-Hughes Phosphorus hotspots in the Lake Winnipeg watershed: finer resolution export data to inform targeted action</p>
9:20	Break				

Martis	Mercuri	Saturni	Solis	
<p>Domestic Action Plans for Lake Erie: Supporting Action, Progress, and Knowledge Sharing <i>Chairs: Sandra Kosek-Sills, Michelle Selzer, Kristen Arnold, Ngan Diep</i></p>	<p>Physical Processes in Lakes, II of II <i>Chairs: Jason Olsthoorn, Mathew Wells, David Cannon, Yi Hong</i></p>	<p>Advances in Hydroclimate Modeling and Data to Support Great Lakes Adaptive Management <i>Chairs: Lauren Fry, Frank Seglenieks, Deanna Fielder</i></p>	<p>Technological and Data Management Practices to Improve Collaboration <i>Chairs: Jess Bowser, Ryan Brown, Jacob Cochran</i></p>	
<p>S. Kosek-Sills Research Components of the Ohio DAP</p>	<p>A. Chow A dramatic delay in fall overturn dates in a 25-year stratification record from a dimictic lake.</p>			8:00
<p>C. Winslow Ohio's Harmful Algal Bloom Research Initiative: Lessons Learned and Gaps to Address</p>	<p>P. Torma Analyzing the turbulent air-water fluxes and the energy balance of a geothermal lake</p>	<p>F. Seglenieks Applications of Hydroclimate Data and Models in Adaptive Management of Great Lakes Outflows</p>	<p>R. Ruehmann USFWS Great Lakes Mass Marking Program Leverages Survey123 in the Transition to Digital Data Collection</p>	8:20
<p>K. Panozzo High-Resolution Mapping of Agricultural Practices in the Maumee Watershed</p>	<p>G. Lükő Surface heat fluxes during fractional ice cover over the Great Lakes</p>	<p>N. Shrestha Developing Climate and Stochastic Sequences for GLAM Phase 2 Expediated Review</p>	<p>M. McLean Implementing Survey123 and Field Maps for Partner Data Collection</p>	8:40
<p>G. LaBarge Agricultural P Nutrient Use Changes in the WLEB Watershed</p>	<p>J. Wang Modeling two-way ice-wave interactions using GL-FVCOM_ice+wave model</p>	<p>A. Temgoua Enhancing Hydroclimate Data Quality: BWIU Advances in Machine Learning</p>	<p>J. Cochran A Scalable Data Acquisition and Dissemination System for Environmental DNA Projects</p>	9:00
Break				9:20

FRIDAY, MAY 24

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Community Science: Local Action for Resilience and Research Chairs: Max Herzog, Gabrielle Parent-Doliner</p>	<p>NOAA Great Lakes Environmental Research Laboratory: Fifty Years of Science in Service to Society, II of II Chairs: Mark Rowe, Gabrielle Farina, Craig Stow, Casey Godwin</p>	<p>Recent Advances in Winter Limnology in a Changing Climate Chairs: Brittany Zepernick, Arthur Zastepa, Leon Boegman, Hunter Carrick</p>	<p>Water Quality, Ecosystem Services, and Beneficial Uses of Great Lakes Connecting Waters Chairs: Edward Roseman, Robin DeBruyne, Katie Stammmer, Michael Twiss</p>	<p>All Tributaries Great and Small: Connectors Across Ecosystems Chairs: Laura Johnson, Nathan Manning, Colleen Cosgrove</p>
9:40	<p>G. Parent-Doliner The Business Case for Investment in Community Based Water Monitoring Toolkit</p>	<p>D. Lee GLERL at 50 - Looking Ahead: The next 50 Years of Science in Service to Society</p>	<p>G. Pu The Great Lakes Winter Grab: Limnological Data From a Multi-Institutional Winter Sampling Campaign</p>	<p>A. Jubar Spatial distribution of invasive larval sea lamprey (<i>Petromyzon marinus</i>) in the St. Clair River</p>	<p>M. Diebel Factors driving changes in phosphorus flux since 2011 in 24 U.S. Great Lakes tributaries</p>
10:00	<p>C. Nenn Community Based Water Quality Monitoring in the Milwaukee River Basin</p>	<p>D. Stanwell-Smith Innovative research and monitoring through the collaboration between NOAA / GLERL and Viking Expeditions</p>	<p>A. Basu Changes in lake ice phenology in the Northern Hemisphere: Past, present, and future shifts.</p>	<p>M. Frahani Using deep learning Neural Network model to interpolate sediment PCBs in the Detroit River</p>	<p>D. Kincaid Nitrogen and phosphorus flux ratios in major U.S. tributaries to the Laurentian Great Lakes</p>
10:20	<p>T. Saleh Democratizing Science? Public Engagement in Ecological Research, Policy, and Practice</p>	<p>G. Dick The GLERL/CIGLR Omics Program: Insights and Opportunities</p>	<p>L. Barth High wintertime phosphorus export from Lake Ontario tributaries across a gradient of urbanization</p>	<p>A. Francis The River Strategy: Inclusive and Equitable Connection on the Kaniatarowanenneh (St. Lawrence River)</p>	<p>L. Johnson Drivers of annual suspended sediment and nutrient yields in tributaries to Lake Erie</p>
10:40	<p>M. Herzog Lake Erie Baseline Assessment Framework: Telling a Community-Driven Story about Lake Erie Watershed Health</p>	<p>V. Deneff Trait variation in nutrient requirements and predation resistance to understand <i>Microcystis</i> genotypic succession</p>	<p>L. Boegman Fate and transport of PO₄ during winter in a small temperate lake located in the Great Lakes watershed</p>	<p>M. Twiss Expanding the REASON project across the Great Lakes Connecting Waters: St. Lawrence & St Marys Rivers</p>	<p>N. Manning Long Term Hysteresis Patterns in Sediment and Nutrient Concentrations in the Maumee River</p>

FRIDAY, MAY 24

Martis	Mercuri	Saturni	Solis	
<p>Domestic Action Plans for Lake Erie: Supporting Action, Progress, and Knowledge Sharing Chairs: Sandra Kosek-Sills, Michelle Selzer, Kristen Arnold, Ngan Diep</p>	<p>Physical Processes in Lakes, II of II Chairs: Jason Olsthoorn, Mathew Wells, David Cannon, Yi Hong</p>	<p>Advances in Hydroclimate Modeling and Data to Support Great Lakes Adaptive Management Chairs: Lauren Fry, Frank Seglenieks, Deanna Fielder</p>	<p>Technological and Data Management Practices to Improve Collaboration Chairs: Jess Bowser, Ryan Brown, Jacob Cochran</p>	
<p>E. Saas The H2Ohio Wetland Restoration & Wetland Monitoring Programs: Managing Wetland Restoration for Water Quality</p>	<p>D. Arends Modelling the bathymetric influence on ice melt for an idealized ice-covered lake</p>	<p>J. Jury Coordinating Bi-National Hydroclimate Data and Metadata</p>	<p>J. Bowser Turning the page on data workflows: transitioning from paper to digital data collection</p>	9:40
<p>S. Francis The Right Practice to the Right Place: A Cost-Benefit Analysis of Targeting Agricultural Phosphorus</p>	<p>T. Pendergast Data-Driven Eddy Diffusivity Parameterization for Vertical Mixing</p>	<p>J. Lenters Advances in Year-Round Hydroclimatic Data: 16 Years and Counting for the Great Lakes Evaporation Network</p>	<p>R. Marques Mendonca Tools and workflows of a data management system for heterogeneous wetland monitoring data</p>	10:00
<p>A. Murumkar Assessment of conservation practices program using a high-resolution SWAT model in Western Lake Erie basin, USA</p>	<p>J. Riley Improving Flood Forecast Guidance for Lake Ontario Through Coupling of the National Water Model</p>	<p>P. Xue Enhancing Rural Resilience in the Great Lakes: The C-CHARM Initiative</p>	<p>J. Young The National Freshwater Data Strategy: Connecting water data across Canada</p>	10:20
<p>A. Neumann Development of SPARROW model in the Canadian side of Lake Erie basin</p>	<p>A. Yeo Assessing the Potential for Medium-Range Ice Forecasts in the Laurentian Great Lakes</p>	<p>K. Semmendinger-Raney Leveraging Subseasonal-to-Seasonal Forecast Information and Many-Objective Direct Policy Search to Support Regulation Decision-Making in the Lake Ontario - St. Lawrence River Water System</p>	<p>A. Arnt User-Informed Development of GLAMR: Collaborative Design of a Great Lakes 'omics Data Platform</p>	10:40

FRIDAY, MAY 24

	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Community Science: Local Action for Resilience and Research Chairs: Max Herzog, Gabrielle Parent-Doliner</p>	<p>NOAA Great Lakes Environmental Research Laboratory: Fifty Years of Science in Service to Society, II of II Chairs: Mark Rowe, Gabrielle Farina, Craig Stow, Casey Godwin</p>	<p>Recent Advances in Winter Limnology in a Changing Climate Chairs: Brittany Zepernick, Arthur Zastepa, Leon Boegman, Hunter Carrick</p>	<p>Water Quality, Ecosystem Services, and Beneficial Uses of Great Lakes Connecting Waters Chairs: Edward Roseman, Robin DeBruyne, Katie Stammer, Michael Twiss</p>	<p>All Tributaries Great and Small: Connectors Across Ecosystems Chairs: Laura Johnson, Nathan Manning, Colleen Cosgrove</p>
11:00	<p>K. Kieffer Community Water Action Toledo case study of the collaborative power of volunteer science</p>	<p>D. Scavia Water quality-fisheries tradeoffs in a changing climate</p>	<p>M. Munawar A maiden winter journey into the Great Lakes: Exploring unknown floristic communities</p>	<p>K. Stammer St. Clair-Detroit Rivers System Initiative: A Successful Great Lakes Collective Impact Collaboration</p>	<p>G. Kaltenecker A Comprehensive Assessment of Concentration-Discharge Relationships across spatial and temporal scales in Southern Ontario</p>
11:20	<p>S. Cherwaty-Pergentile Engaging Great Lakes residents through community-based Science: A Case Study of Recreational Water Quality Monitoring</p>	<p>H. Carrick Plankton C and P uptake in pre, during, and post cyanobacterial blooms in western Lake Erie</p>	<p>S. Wilhelm Declines in ice cover coincide with light limitation responses & community change in freshwater diatoms</p>	<p>R. DeBruyne Great Lakes Connecting Waters Collaborative: Introductory Summit to Frame Needs and Next Steps</p>	<p>C. Cosgrove Not all loads are estimated equal: Comparing load estimators across sampling frequencies and river size</p>
11:40	<p>N. Wilson Cyanobacteria Blooms in the District of Thunder Bay: A Growing Concern for Freshwater Ecosystems</p>	<p>A. Ng A checklist of aquatic vascular plants in the Laurentian Great Lakes</p>	<p>A. Bramburger Under the Ice: A Story of Extreme Citizen Science, Collaboration, Exploration, and Discovery</p>	<p>Panel: Why the Great Lakes region needs the grass-roots creation of a Connecting Waters Network</p>	<p>C. Weisener Exploring the Land to Lake connection linking nutrient dynamics, source identification and ecological function using advance genomics in the western Lake Ontario watershed</p>
12:00					
12:20	Lunch (on your own)				

FRIDAY, MAY 24

Martis	Mercuri	Saturni	Solis	
<p>Domestic Action Plans for Lake Erie: Supporting Action, Progress, and Knowledge Sharing <i>Chairs: Sandra Kosek-Sills, Michelle Selzer, Kristen Arnold, Ngan Diep</i></p>	<p>Physical Processes in Lakes, II of II <i>Chairs: Jason Olsthoorn, Mathew Wells, David Cannon, Yi Hong</i></p>	<p>Advances in Hydroclimate Modeling and Data to Support Great Lakes Adaptive Management <i>Chairs: Lauren Fry, Frank Seglenieks, Deanna Fielder</i></p>	<p>Technological and Data Management Practices to Improve Collaboration <i>Chairs: Jess Bowser, Ryan Brown, Jacob Cochran</i></p>	
<p><u>O. Al Balasmeh</u> Analysis of geospatial data to support ensemble modeling in the Canadian side of Lake Erie drainage basin</p>	<p><u>H. Ebrahimi</u> Automated calibration of a three-dimensional hydrodynamic and surface water quality model using machine learning</p>	<p><u>A. Van Zanen</u> Drivers and barriers to using hydroclimate data and models in Great Lakes coastal risk management decisions</p>	<p><u>T. Havens</u> Surface Current Prediction in the Straits of Mackinac Using HF Radar</p>	11:00
<p><u>A. Okoli</u> Spatiotemporal Dynamics of Total Phosphorus Load in the Canadian Side of Lake Erie Basin</p>	<p><u>J. Wells</u> Application of Principal Component Analysis to evaluate skill of hydrodynamic simulations in stratified lakes</p>	<p><u>L. Fry</u> Subseasonal-to-Annual Net Basin Supply and Water Level Forecasting for Great Lakes Water Management</p>	<p><u>B. Gerald Amicet</u> Modeling and Spatiotemporal Monitoring of Marine and Coastal Ecosystems of the Moroccan Margin of the Gulf of Cadiz and the Gulf of Guinea: A Hybrid Approach For Spaceborn Oceanography and Artificial Intelligence</p>	11:20
<p><u>V. Shedekar</u> Future of water management strategies to reduce farm and watershed scale nutrient losses</p>		<p><u>Y. Hong</u> Trend and variability in hydro-meteorological extremes of water balance components for the Great Lakes</p>		11:40
				12:00
Lunch (on your own)				12:20

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	Augustus Ballroom	Augustus III	Augustus IV	Jovis	Luna
	<p>Community Science: Local Action for Resilience and Research <i>Chairs: Max Herzog, Gabrielle Parent-Doliner</i></p>	<p>NOAA Great Lakes Environmental Research Laboratory: Fifty Years of Science in Service to Society, II of II <i>Chairs: Mark Rowe, Gabrielle Farina, Craig Stow, Casey Godwin</i></p>	<p>Great Lakes HABs: One Water, One Health, Many Questions <i>Chairs: Mary Anne Evans, Chris Winslow, Nicole Zacharda</i></p>	<p>Socioeconomic Aspects of Contaminants of Emerging Concern in Great Lakes <i>Chairs: Amanpreet Kohli, Carolyn Foley, Sarah Zack, Gavin Dehnert</i></p>	<p>All Tributaries Great and Small: Connectors Across Ecosystems <i>Chairs: Laura Johnson, Nathan Manning, Colleen Cosgrove</i></p>
1:20	<p>J. Bader Expanding citizen science with university/school partnerships</p>	<p>H. Bootsma Deep Learning: How profundal quagga mussels affect Lake Michigan phosphorus and plankton dynamics</p>	<p>L. Hart Comparing Cyanobacterial Biosynthetic Potential Between Winam Gulf, Lake Victoria, Kenya and Western Lake Erie, USA</p>	<p>T. Hollinger Are The Fish Safe to Eat? An Examination of Lake Nipigon Fish Consumption Guidelines Through the Perspective of Biinjitiwaabik Zaaging Anishinaabek</p>	<p>R. Basooma Unveiling the Potential: Exploring Challenges and Opportunities in Molecular Methods for Monitoring Ecological Health of Wadable Streams in Uganda and East Africa with Macroinvertebrates</p>
1:40	<p>A. Rusak Building Coastal Resilience in Georgian Bay</p>	<p>A. Vander Woude New Developments on the National Oceanic and Atmospheric Administration Great Lakes CoastWatch Satellite Data Repository</p>	<p>J. Obuya Socioeconomic consequences of cyanobacteria harmful algal blooms in small-scale fishing communities of Winam Gulf, Lake Victoria</p>	<p>A. Chiandet Beyond delisting in Severn Sound - How do things look 20 years after the party is over?</p>	<p>S. Anwuzia The preliminary assessment of the deteriorating state of a dam in north-western Nigeria using Macroinvertebrates assemblage and environmental factors</p>
2:00	<p>J. Reynolds Data to action: How DataStream's open data platform is used to protect freshwater</p>	<p>S. Ruberg Observing the Great Lakes: The transition to advanced monitoring methods</p>	<p>K. Stammer A Comparison of Nutrient Load Estimates between the Leamington Tributaries, Thames River, and Sydenham River (2018-2022)</p>	<p>R. Zhang The Silent Threat: Assessing and Mapping PFAS Risks in Three Great Lake States</p>	<p>B. Curtis Quantifying the influence of riverine infrastructure on Unionid species-at-risk communities in the Grand River watershed</p>

WITHDRAWN

Martis	Mercuri	Saturni	Solis	
<p>Domestic Action Plans for Lake Erie: Supporting Action, Progress, and Knowledge Sharing <i>Chairs: Sandra Kosek-Sills, Michelle Selzer, Kristen Arnold, Ngan Diep</i></p>	<p>Coastal Erosion on the Great Lakes: Process Controls and Impacts <i>Chairs: Alex Smith, Ethan Theuerkauf, Cary Troy, Chin Wu</i></p>	<p>Advances in Hydroclimate Modeling and Data to Support Great Lakes Adaptive Management <i>Chairs: Lauren Fry, Frank Seglenieks, Deanna Fielder</i></p>	<p>Advanced Techniques for High-Resolution Benthic Mapping <i>Chairs: Phillippe Wernette, Brandon Krumwiede, Hans VanSumeren</i></p>	
<p>S. Gasteyer Local Social Systems and Phosphorous Reduction: Insights from the Western Lake Erie Basin</p>	<p>C. Roland Beach nourishment impacts on coastal resiliency at Minnesota Point, Lake Superior</p>	<p>C. Zhao Improved thermal structure and lake surface temperature simulation for Lake Superior using a data assimilative model</p>	<p>B. Krumwiede Looking Below the Surface: An Update on Benthic Habitat Mapping in the Great Lakes</p>	1:20
<p>A. Bressler Developing the Western Lake Erie Basin Advisory Group in Michigan</p>	<p>C. O'Rourke Quantifying the Rates of Historical Shoreline Change on the North Central Basin of Lake Erie</p>	<p>J. Ward Role of Extratropical Cyclones on Great Lakes Water Supply</p>	<p>A. Arnold Leveraging Multi-band Backscatter, AUV Imagery and AI to Detect and Enumerate Invasive Dreissenid Mussels</p>	1:40
	<p>E. Theuerkauf Timing and processes associated with beach recovery following recent high Lake Huron water level</p>	<p>N. Afnan Impacts of Projected Future Temperature Rise on the Hydrology of Neebing River, Ontario</p>	<p>R. Robinson 3D spatiotemporal response of fishes to benthic bathy-thermal gradients in Lake Ontario</p>	2:00

FRIDAY, MAY 24

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	<p>Community Science: Local Action for Resilience and Research <i>Chairs: Max Herzog, Gabrielle Parent-Doliner</i></p>	<p>NOAA Great Lakes Environmental Research Laboratory: Fifty Years of Science in Service to Society, II of II <i>Chairs: Mark Rowe, Gabrielle Farina, Craig Stow, Casey Godwin</i></p>	<p>Great Lakes HABs: One Water, One Health, Many Questions <i>Chairs: Mary Anne Evans, Chris Winslow, Nicole Zacharda</i></p>	<p>Socioeconomic Aspects of Contaminants of Emerging Concern in Great Lakes <i>Chairs: Amanpreet Kohli, Carolyn Foley, Sarah Zack, Gavin Dehnert</i></p>	<p>All Tributaries Great and Small: Connectors Across Ecosystems <i>Chairs: Laura Johnson, Nathan Manning, Colleen Cosgrove</i></p>
2:20	<p>H. Matschke Creating community partnerships to support the foundation of water quality monitoring and environmental advocacy.</p>	<p>E. Anderson Filling in the Gaps: The Underrated, Misunderstood, and Unfolding Story of Meteotsunamis</p>	<p>A. Baker Linking tributary nutrients, sediment, and cyanobacteria to Lake Superior nearshore algal blooms</p>	<p>C. McConaghy Great Lakes Research, Reporting & Partnerships: Evolving Themes within the St. Louis River Estuary</p>	<p>L. Dampousse Mitigation Translocations: Investigating freshwater mussel SAR recovery post-relocation</p>
2:40	<p>R. Pharr Youth Scientists Step-In for Government Failures</p>	<p>D. Wuebbles A High-Resolution Climate Impacts Analysis for the Great Lakes Region</p>	<p>B. Kramer The genome characteristics and distribution of <i>Dolichospermum circinale</i> in the Great Lakes</p>	<p>C. Foley “We Don’t Know What We Don’t Know”: Supporting Research on Social and Economic Impacts of PFAS</p>	<p>D. Fitzgerald Evaluation of Flood Plain Surveys to Inventory Freshwater Mussels in place of River Surveys</p>
3:00	<p>K. Czajkowski Water Quality in the Maumee Watershed Through Student Engagement: GLOBE at Earth Heart Farms</p>	<p>R. Rood Great Lakes Climate Futures: Storylines and Scenarios</p>	<p>C. Ward Genomic insights into bloom-forming <i>Nostocales</i> taxa in the Lake Erie watershed</p>	<p>N. Wood Science Communication vs Science Misinformation: A review and a call to action</p>	<p>S. Brown The Defiance Research Alliance: What is it and where are we going?</p>
3:20	Break				

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	<p>Coastal Erosion on the Great Lakes: Process Controls and Impacts <i>Chairs: Alex Smith, Ethan Theuerkauf, Cary Troy, Chin Wu</i></p>	<p>Advances in Hydroclimate Modeling and Data to Support Great Lakes Adaptive Management <i>Chairs: Lauren Fry, Frank Seglenieks, Deanna Fielder</i></p>	<p>Advanced Techniques for High-Resolution Benthic Mapping <i>Chairs: Phillipe Wernette, Brandon Krumwiede, Hans VanSumeren</i></p>	
	<p>C. Troy The Great Lakes Shoreline Model - Overview and Applications</p>	<p>B. Lofgren They Forgot About the Sun and No One Noticed</p>	<p>C. Roland Benthic habitat classification using side-scan sonar and open-source semantic segmentation models</p>	2:20
	<p>E. Spitzer Storm Impacts on Coastal Geomorphology & Stratigraphy: Topographic and GPR Assessment, Illinois Beach, Lake Michigan</p>	<p>M. RahimiMovaghar Characterizing Successive Dry-Wet and Wet-Dry Extremes in the Great Lakes Basin under Climate Change</p>	<p>R. Watkins Continuous Monitoring of Nearshore-Bathymetry in the Great Lakes Using Spaceborne LiDAR and High-Resolution Optical Imager</p>	2:40
	<p>S. Peterson Coastal geomorphological changes near groin structures under water level fluctuations in Lake Michigan</p>	<p>M. Owensby An Overview of Storm Surge and Wave Hazards Modeling and Statistics within the Framework for Resilient Great Lakes Restoration Initiative (GLRI) Investments Study</p>	<p>M. Barklage Sub-bottom Geophysical Imaging of Greater Chicago's Lake Michigan Coastal Zone</p>	3:00
Break				3:20

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3:40	<p><u>L. Manns</u> Integrating Project WET, Water Quality, Wetlands, GIS and H2Ohio into the 7th Grade Curriculum</p>		<p><u>B. Zepernick</u> The Other Algal Bloom Problem: Elucidating Effects of Cyanobacterial Induced "Lake Basification" on Microcystis spp.</p>	<p><u>C. Filstrup</u> Metals Distribution in Lake Superior and Huron sediment track changing watershed and airshed sources</p>	
4:00	<p><u>L. Kisaka</u> Community Science in Action: A Review of Practices in the Lake Victoria Basin</p>		<p><u>A. Eck</u> Distribution, Environmental Drivers and Risks of Microcystis aeruginosa</p>	<p><u>E. De Oliveira</u> Passive Sampling for the Identification of Persistent, Mobile, and Toxic (PMT) Substances in Lake Ontario</p>	
4:20			<p><u>K. Weitzel</u> Mitigating cyanobacterial harmful algal blooms: water soluble chitosan derivative and clay-based coagulation and flocculation treatment</p>	<p><u>K. Besa</u> Investigating Heavy Metal Pollution in Fish, Water, and Sediments in Lumwana East River, Northwestern Province, Zambia</p>	
4:40	Conference Ends				

FRIDAY, MAY 24

Martis	Mercuri	Saturni	Solis	
		<p>Advances in Hydroclimate Modeling and Data to Support Great Lakes Adaptive Management <i>Chairs: Lauren Fry, Frank Seglenieks, Deanna Fielder</i></p>	<p>Advanced Techniques for High-Resolution Benthic Mapping <i>Chairs: Phillipe Wernette, Brandon Krumwiede, Hans VanSumeren</i></p>	
		<p><u>D. Fielder</u> Long-Term Trends in Great Lakes Water Levels and Precipitation</p>	<p><u>P. Wernette</u> Improving Benthic Habitat Mapping with Photogrammetry and Machine Learning</p>	3:40
		<p><u>H. Abdelhady</u> A Deep Learning Framework for Hindcasting Lake Michigan Ice Cover and Wave Height</p>	<p><u>R. Mattheus</u> High-resolution mapping of lake-bottom geology from grab, core, reflection geophysical, and airborne LiDAR-derived datasets: Insights from the Chicago coast of Lake Michigan</p>	4:00
			<p><u>I. Smith</u> The Use of Low-Cost Aerial Drone Systems in Coastal/Fluvial Geomorphic Assessments and Habitat Design</p>	4:20
Conference Ends				4:40



Celebrating 50 years of science in service to society!

Join us for a special session!

To commemorate the 50th anniversary of the National Oceanic and Atmospheric Administration Great Lakes Environmental Research Laboratory (NOAA GLERL), this special session highlights significant papers, data products, models and forecasts, or other scientific achievements of our federal scientists, cooperative institutes, and partners. Since 1973, NOAA GLERL's scientific advancements have changed what we know about our world and the Great Lakes environment. Because of the people who shaped our beginnings, NOAA GLERL is a world-class laboratory that makes critical observations and conducts groundbreaking research to advance our knowledge not only of the Laurentian Great Lakes, but extending to the global ocean and its interactions with the earth, atmosphere, ecosystems, and climate. Speakers include past and present staff, affiliates, collaborators, and others with an interest in NOAA GLERL's science.

Session: NOAA GLERL: 50 years of science in service to society

Room: Augustus III

Day/Time: Thursday starting at 8:00am & Friday starting at 9:40am

Session Chairs: Brie Farina, Mark Rowe, Craig Stow, NOAA GLERL and Casey Godwin, Cooperative Institute for Great Lakes Research University of Michigan (CIGLR)

Topics include:

- GLERL science - 50 years & looking ahead
- The first 25 years: origin, growth, struggles, and scientific contributions
- Great Lakes coastal forecasting system
- Hydrology collaborations
- Ice cover data & modeling
- Biophysical modeling; ecological modeling, food web modeling
- Management and recovery of the Saginaw Bay fish assemblage
- Advancement in HAB research
- Grazing and predator-prey experiments
- Documenting the dreissenid mussel invasion
- Initiatives to manage invasive species
- Investing in the next generation of scientists
- Long-term temperature monitoring
- Exploring submerged sinkholes
- CoastWatch and remote sensing research
- Satellite monitoring of water quality
- Research collaborations between NOAA and Viking Expeditions
- The GLERL/CIGLR 'omics program
- Microcystis genotypic succession
- Water quality-fisheries tradeoffs in a changing climate
- Plankton C and P uptake in cyanobacterial blooms
- Aquatic vascular plants
- Quagga mussel affects
- Observing the Great Lakes
- Meteotsunamis
- Climate impacts analysis
- Great Lakes climate futures
- And more!



POSTER SESSION & SOCIAL

Augustus III
Tuesday, 6–8 p.m.

Posters are grouped in the following themes:

- ADV Advances in Large Lakes Science, Technologies & Innovations
- HUD Human Dimensions
- INS Indigenous Knowledge Systems & Collaborations
- LSR Land Stewardship & Restoration
- MCH Microbial Communities and cHABs
- PAB Physical & Biogeochemistry
- POL Pollutants
- SAM Science & Management
- GEN General

They will remain on display through 1 p.m. on Friday, May 24.

Visit virtual posters online at



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POSTERS

ADV: Advances in Large Lakes Science, Technologies & Innovations

- ADV-1 Baker, V.
Impacts of Dreissena polymorpha on the fate of plastic debris
- ADV-2 Bumps, A.
Round goby male reproductive tactics: connections to environmental factors and impacts on behavior
- ADV-3 Byrnes, D.
Nitrogen memoryscapes: Patterns in nitrogen inputs and riverine export across the continental United States
- ADV-4 Gomezdelcampo, E.
Wet Prairie Restoration in a Great Lakes Watershed: A Comparison of Modeling Methods

- ADV-5 Gurneau, J.
Sovereign-Nation-Driven-Research of Annual Remote Wild Rice Habitats through Edge enabled AI/ML
- ADV-6 Hampton, T.
Using Remote Sensing to Quantify Wetland Restoration Potential in the Lake Erie Basin and Prairie Pothole Region
- ADV-7 Hoehn, H.
Quantifying Primary Algal Groups in H2Ohio Wetlands
- ADV-8 Kehne, M.
Assessing The Nutritional Quality and Fate Of Saginaw Bay Dreissenid Mussel Veligers
- ADV-9 Klump, V.
A GLOS LoRaWAN Sensor Network for tracking hypoxia and HABs in Green Bay, Lake Michigan



William Taylor Early Career Researcher Fellowship Great Lakes Fishery Commission

The William Taylor Early Career Researcher Fellowship seeks to enhance the expertise and increase diversity of perspectives represented in the proposal review process on the Great Lakes Fishery Commission's research advisory boards.

- **Two fellowships: one for the Fishery Research Program and one for the Sea Lamprey Research Program.**
- Conduct annual reviews of proposals submitted to the GLFC's competitive research programs.
- Participate in two research board meetings as voting members.
- Additional opportunities for networking with partners.
- Applicants must be PhD candidates or post-doctoral fellows whose research is relevant and potentially impactful to Great Lakes fisheries or sea lamprey control or both.

More information:

<https://www.glfrc.org/temp/WilliamTaylorEarlyCareerFellowship.pdf>

Apply today!

Application deadline:
July 15, 2024

US \$2,000 award,
plus travel expenses
for attendance at
research board
meetings



- ADV-10 Li, E.
Carbon characterization as a tool for detecting human impacts on wetlands and streams across the land-water interface
- ADV-11 Monhollon, D.
Minimizing double counting of round goby in continuous image sequences gathered by underwater robots
- ADV-12 Robson, J.
Submerged aquatic vegetation macroinvertebrate diversity of Detroit River and tributaries
- ADV-13 Saggese, L.
Effects of Soil Amendments on Community Structure and Function in Created Wetlands
- ADV-14 Tremblay, M.
Stormwater Management Ponds Under Ice: Impacts of Winter Dynamics on Urban Ponds

HUD: Human Dimensions

- HUD-1 Anderson, M.
Communicating the complex scientific workings of environmental DNA (eDNA) to different audiences
- HUD-2 Brunner, S.
Where are observations most valuable? A conversation starter.
- HUD-3 Sorrell, M.
Establishing An Undergraduate Research Program Focused On Long-Term Water Quality Assessment In Defiance, OH USA
- HUD-4 Truitt, K.
Web GIS frameworks for data collaboration in the Great Lakes Region

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SCHOOL OF FRESHWATER SCIENCES

POSTERS

INS: Indigenous Knowledge Systems & Collaborations

- INS-1 Devan, M.
Importance of Zooplankton Abundance to Diet, Growth, and Survival of Larval Coregonines in Laurentian Great Lakes and Lake Champlain.
- INS-2 Ludwig, J.
A potential threat to lake whitefish recovery: evaluation of thiamine deficiency

LSR: Land Stewardship & Restoration

- LSR-1 Weerakoon, T.
Evaluating impacts of stewardship on freshwater mussel Species at Risk in the Sydenham River Watershed

MCH: Microbial Communities and cHABs

- MCH-1 Bekius, H.
Beaches and Feces: the Journey to Solve the #2 Mystery
- MCH-2 Bullerjahn, G.
The recent disappearance of a Planktothrix bloom: characterization of a regime shift in Sandusky Bay
- MCH-3 Evans, M.
Cladophora community assessments: Shared Lakes, Shared Data
- MCH-4 Herne, T.
Shrimp on Film - Utilization of Benthic Habitat by *Mysis diluviana* in Lake Michigan
- MCH-5 Huisman, N.
Long-term monitoring of Bacterial Communities and Water Quality of the Eutrophic Macatawa Watershed
- MCH-6 Ralph, R.
Effects of nutrient manipulations on Lake Erie microbial community composition and toxigenic *Microcystis* abundance

- MCH-7 Stalaloni, A.
Determining the Role of Maumee River Sediments in Microbial Nitrogen Transformations and Net Fluxes
- MCH-8 Stanislawczyk, K.
Cyanobacterial growth and microcystin toxin production in Lake Erie's western basin
- MCH-9 Waldmann Rosenbaum, C.
Temperature traits in cyanobacterial populations from the Laurentian Great Lakes

PAB: Physical & Biogeochemistry

- PAB-1 Benoit, N.
A multi-faceted spatial and temporal approach to Assessing Lake Ontario's Western Basin Nearshore Water Quality
- PAB-2 Cimat, R.
Closing the Gap: Nitrogen Dynamics in the Maumee River
- PAB-3 Ferrato, F.
The influence of warmer fall air temperatures and delayed ice cover on under-ice water temperatures
- PAB-4 Harrow-Lyle, T.
Comparing interpolation techniques for Driessenid distributions across Lake Erie.
- PAB-5 Lis, S.
Exploring the impacts of watershed land cover on spatial heterogeneity in lake ice phenology patterns
- PAB-6 Orendorf, S.
Analysis of ice-wave-current interactions for Lake Erie 2021-2022 field season.
- PAB-7 Pearce, K.
Topobathymetric monitoring to study breakwater impacts at Illinois Beach State Park, SW Lake Michigan
- PAB-8 Sandrock, P.
Declining ice duration alters key ecosystem parameters in lakes worldwide

PAB-9 Verkuil, E.
Is there an alternative? Ice-Melting Capacity and Environmental Impact of De-icers.

POL: Pollutants

POL-1 Arieno, P.
Input of Anthropogenic Debris Across a Rural to Urban Gradient in the Watershed of the Rochester Embayment

POL-2 Batte, E.
Degradation of Anthropogenic Debris in the Watershed of Lake Ontario.

POL-3 Edge, D.
New perspectives on spatial and temporal distributions of legacy and emerging contaminants in Lake Superior

POL-4 Fuller, N.
The impact of environmental filters on debris transport across a rural to urban gradient in the Lake Ontario watershed.

POL-5 Gottfried, M.
Intercepting the Plastic Tide: Green infrastructure prevents downstream debris transport

POL-6 Helm, P.
Perfluoroalkyl substances in urban-impacted watersheds and nearshore waters of Western Lake Ontario

POL-7 Shablin, J.
Effects of vegetation on microplastic concentrations in Great Lakes coastal wetlands

POL-8 Xu, Y.
Microplastic Extraction Methods in Complex Water Samples- Effects on Aged and Pristine Microplastics

SAM: Science & Management

SAM-1 Adhikari, A.
Integrating Drying Effects with Mass-Spectrometry Analysis: Microcystin Levels in Fish from Lake Victoria

SAM-2 Drouillard, K.
Assessment of fish consumption restrictions in Canadian portions of the Detroit River Area of Concern

SAM-3 Egedy, L.
Post-larval juvenile lake whitefish spatial distribution in Lake Huron, 2022

SAM-4 Gauthier, N.
Caring for Sea Lamprey: Risk Management, Biotechnology, and Eradication in the Great Lakes

SAM-5 Hastings, K.
Oligochaete community of Lake Huron

SAM-6 Huang, C.
Using Deep Learning to Reconstruct 42 Years of Great Lakes Surface Temperature

SAM-7 Lawrence, T.
African Great Lakes Status and Research Needs: A Special Section of the JGLR

SAM-8 Leung, R.
Integrating Ecotoxicological and eDNA approaches to Assess Net-Pen Aquaculture Waste Impact on Benthic Invertebrate Communities

SAM-9 Makasa, L.
Fluctuation of Water Levels in the Southern Part of Lake Tanganyika, Mpulungu, Zambia, From 1960 to 2021 and its Impact on Lake Tanganyika Fishery and its Catchment

SAM-10 Mangat, G.
Lakewide Management: Navigating the Great Lakes Ecosystem, One Lake at a Time

SAM-11 Wojciechowski, A.
Ecological Challenges and Potential Mitigations for a Great Lakes Ultra-large Pumped Storage System

GEN: General

GEN-1 Bowen, R.
Saginaw Bay Monitoring Consortium update: Tributary monitoring by SVSU's undergraduate student team

POSTERS

- GEN-2 Chemoiwa, E.
Assessing Diversity of *Labeobarbus altianalis* (Boulenger 1900) Populations in Lake Victoria Watershed Using MtDNA for Fisheries Management and Conservation
- GEN-4 Chigamba, G.
Linthipe River Ecosystem: Unveiling Economic Dimensions for Sustainable Conservation and Livelihoods in Malawi
- GEN-5 Ji, S.
Trait-based functional ecology of successful fish invasions in 15 lakes in SW China
- GEN-6 Lewandowski Jr, M.
Temporal trophic dynamics in a stream fish assemblage using stable isotope analysis
- GEN-7 Mills, Z.
Understanding variables affecting dwarf red mangroves in a karstic freshwater environment - Bacalar, Mexico
- GEN-8 Mongane, B.
The exploitation of methane gas in Lake Kivu and its potential impact on the socio-economic development of The Democratic Republic of Congo and the African Great Lakes region.
- GEN-9 Onwuka, O.
Investigating the nutrient status of overlying water and sediment of Jabi Lake, Abuja, Nigeria
- GEN-10 Rinchard, J.
The Great Lakes Lake Trout Thiamine Monitoring Program: Trends and Ecological Connections
- GEN-11 Roose, H.
Dietary niche variation of native brook trout in sympatry with non-native rainbow trout
- GEN-12 Saqib, M.
Effects of structural enrichment on juvenile hatchery-reared Atlantic salmon (*Salmo salar*)
- GEN-13 Tellier, G.
Determining the effect of senescence on sperm quality and reproductive success in Chinook salmon
- GEN-14 Warren, L.
Genetic evidence of panmixia amongst Lake Michigan alewife, *Alosa pseudoharengus*
- GEN-15 White, A.
Benefits, Limitations, and the Future of Manual Image Labeling for Great Lakes Research

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Virtual Posters

The following posters will be available online for viewing throughout the week. Visit and leave comments or questions for the authors.

ADESANYA, J.

Exploring mutualistic interactions between aquatic bacteria and Scenedesmus

EGBEMHENGHE, A.

Chemical Analysis of Essential Trace Elements in Wastewater Samples Collected from Four Different Mines

KLIMCZAK, E.

Intensive trapping as a management action against red swamp crayfish

ODHIAMBO, B.

Nitrogen and Phosphorus Co-Limitation in Eutrophic Lakes: A Case Study of Lake Victoria

OKEYO, H.

Conversion of fish waste to resources

SINGH, S.

University/Utility Collaboration for Advances in Great Lakes Drinking Water Research

ZHANG, S.

Identification of antibacterial compounds from *Microcystis aeruginosa* metabolites using machine learning and molecular docking

Visit virtual posters online at



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Join the International Joint Commission's session

Great Lakes Science Plan: Preparing for What the Future Will Bring

Tuesday, May 21 from 1:40 pm to 5:40 pm
Mercuri Room

This session explore the recent progress toward developing a Great Lakes Science Plan and how other International Joint Commission Great Lakes Science Advisory Board initiatives can inform the Great Lakes Science Plan, including:

- Winter science
- Microplastics monitoring and risk assessment
- Community science
- Valuation of ecosystem services
- Bridging Traditional Ecological Knowledge
- Development of a Great Lakes Early Warning System
- Science Plan management, governance and program delivery

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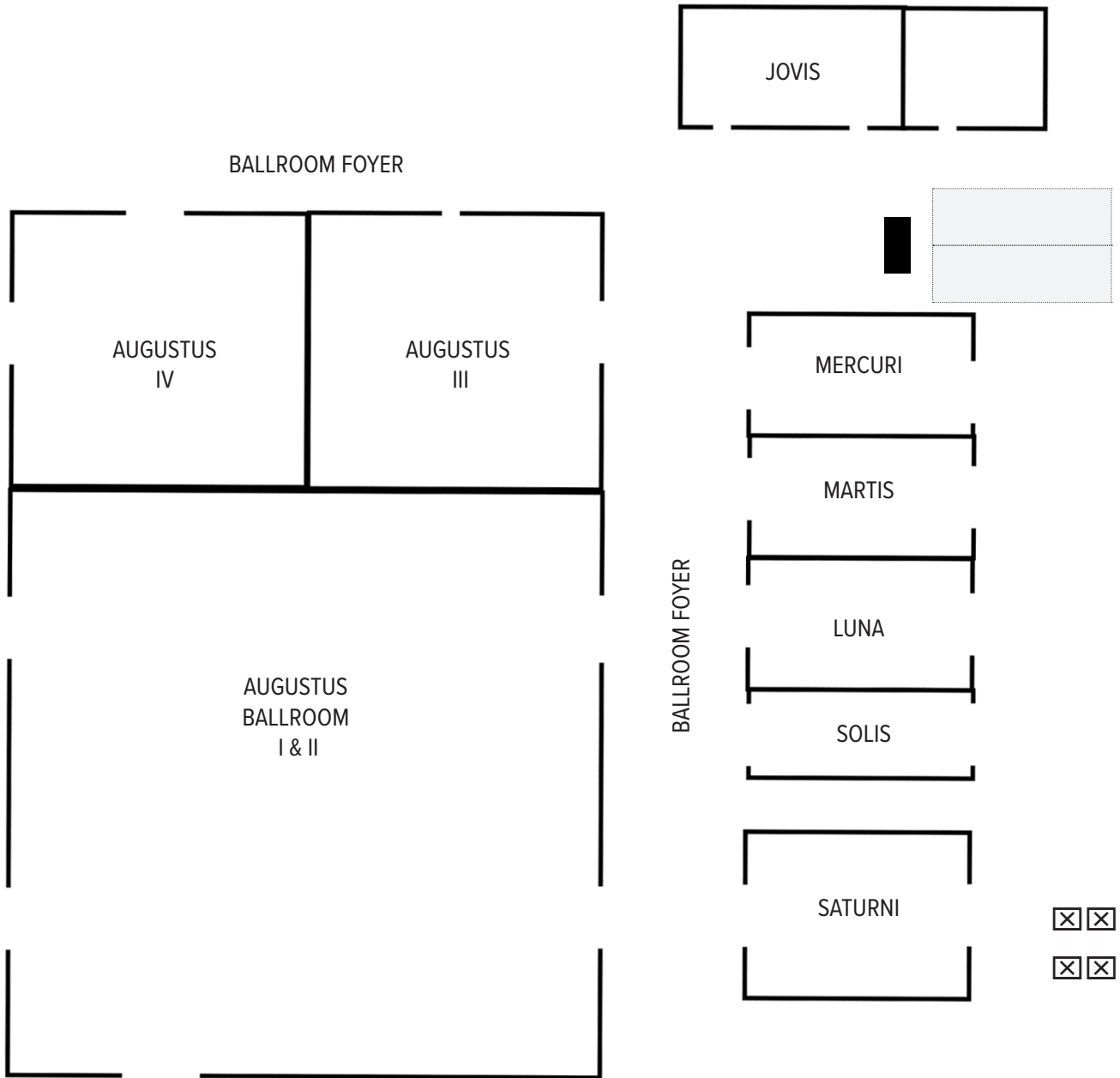
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NOTES



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