



Now Trending: Innovations in Lake Management

38th International Symposium of the North American Lake Management Society

October 30 - November 2, 2018

Duke Energy Convention Center • Cincinnati, Ohio



Hosted by the
Ohio Lake Management Society and the Indiana Lakes Management Society
Affiliates of NALMS

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Conference at a Glance



Tuesday, October 30

7:30 am – 8:00 am	Continental Breakfast – Workshop Participants Only (<i>Grand Ballroom A</i>)							
Workshops 8:00 am – 10:00 am	<i>South Meeting Room 234</i>	<i>South Meeting Room 235</i>	<i>South Meeting Room 236</i>	<i>South Meeting Room 233</i>	<i>West Meeting Room 250</i>	<i>South Meeting Room 230</i>	<i>South Meeting Room 232</i>	
	Advanced Phytoplankton Ecology	Alum for Phosphorus Control in Lakes and Ponds	Freshwater Algal Ecology, Methodology and Control – Lecture Only	Internal Phosphorus Loading	Introduction to R for Aquatic Research	Lanthanum Modified Bentonite – Dosing, Ecotoxicology and Modelling	The Role of Aeration/ Oxygenation in Lake Management	
8:30 am – 12:00 pm	Field Trips (<i>meet at the Duke Energy Convention Center Main Entrance</i>) Greater Cincinnati Water Works Richard Miller Treatment Plant Tour USEPA Office of Research and Development Aquatic Research Facility & USEPA Experimental Stream Facility Mesocosm/East Fork Watershed Cooperative Tour							
10:00 am – 10:30 am	Refreshment Break – Workshop Participants Only (<i>Grand Ballroom A</i>)							
Workshops 10:30 am – 12:00 pm	<i>South Meeting Room 234</i>	<i>South Meeting Room 235</i>	<i>South Meeting Room 236</i>	<i>South Meeting Room 233</i>	<i>West Meeting Room 250</i>	<i>South Meeting Room 230</i>	<i>South Meeting Room 232</i>	
	Advanced Phytoplankton Ecology	Alum for Phosphorus Control in Lakes and Ponds	Freshwater Algal Ecology, Methodology and Control – Lecture Only	Internal Phosphorus Loading	Introduction to R for Aquatic Research	Lanthanum Modified Bentonite – Dosing, Ecotoxicology and Modelling	The Role of Aeration/ Oxygenation in Lake Management	
12:00 pm – 1:00 pm	Lunch – Full-Day Workshop Participants Only (<i>Grand Ballroom A</i>)							
1:00 pm – 4:00 pm	Field Trip: Thomas More College Biology Field Station Tour with Boat Electrofishing Demonstration (<i>meet at the Duke Energy Convention Center Main Entrance</i>)							
Workshops 1:00 pm – 3:00 pm	<i>South Meeting Room 234</i>	<i>South Meeting Room 235</i>	<i>West Meeting Room 252</i>	<i>South Meeting Room 233</i>	<i>West Meeting Room 250</i>	<i>South Meeting Room 236</i>	<i>South Meeting Room 230</i>	<i>South Meeting Room 232</i>
	Advanced Phytoplankton Ecology	Alum for Phosphorus Control in Lakes and Ponds	Freshwater Algal Identification – Microscope Based	Internal Phosphorus Loading	Introduction to R for Aquatic Research	Lake Management Best Practices	Lanthanum Modified Bentonite – Dosing, Ecotoxicology and Modelling	The Role of Aeration/ Oxygenation in Lake Management
3:00 pm – 3:30 pm	Refreshment Break – Workshop Participants Only (<i>Grand Ballroom A</i>)							
Workshops 3:30 pm – 5:00 pm	<i>South Meeting Room 234</i>	<i>South Meeting Room 235</i>	<i>West Meeting Room 252</i>	<i>South Meeting Room 233</i>	<i>West Meeting Room 250</i>	<i>South Meeting Room 236</i>	<i>South Meeting Room 230</i>	<i>South Meeting Room 232</i>
	Advanced Phytoplankton Ecology	Alum for Phosphorus Control in Lakes and Ponds	Freshwater Algal Identification – Microscope Based	Internal Phosphorus Loading	Introduction to R for Aquatic Research	Lake Management Best Practices	Lanthanum Modified Bentonite – Dosing, Ecotoxicology and Modelling	The Role of Aeration/ Oxygenation in Lake Management
5:00 pm – 6:00 pm	NALMS New Member Reception (<i>Rue Reolon – Hilton Cincinnati Netherland Plaza</i>)							
6:00 pm – 10:00 pm	Welcome to Cincinnati @ Rhinegeist Brewery (<i>meet at Rue Reolon – Hilton Cincinnati Netherland Plaza</i>)							

Wednesday, October 31

7:00 am – 8:30 am	Continental Breakfast / Exhibits Open / Poster Viewing (<i>Grand Ballroom B</i>)						
8:30 am – 10:00 am	Opening Plenary Session (<i>Grand Ballroom A</i>)						
10:00 am – 10:30 am	Refreshment Break / Exhibits Open / Poster Viewing (<i>Grand Ballroom B</i>)						
Concurrent Session A 10:30 am – 12:00 pm	A1	A2	A3	A4	A5	A6	A7
	<i>West Meeting Rooms 260–261</i>	<i>West Meeting Room 262</i>	<i>West Meeting Room 263</i>	<i>West Meeting Room 264</i>	<i>South Meeting Rooms 237–238</i>	<i>South Meeting Room 233</i>	<i>South Meeting Room 236</i>
	Large Data Sets and Long-Term Monitoring	Combating Invasive Species	Alum Treatment	Algal Toxins	Army Corps Water Quality Activities	Data and Water Quality (WMAO)	Waterways and Infrastructure (WMAO)
12:00 pm – 1:30 pm	Lunch / Exhibits Open / Poster Viewing (<i>Grand Ballroom B</i>) NALMS Student Luncheon (<i>Grand Ballroom Foyer</i>) WMAO Awards Luncheon and Business Meeting (<i>Grand Ballroom A</i>)						
Concurrent Session B 1:30 pm – 3:00 pm	B1	B2	B3	B4	B5		
	<i>West Meeting Rooms 260–261</i>	<i>West Meeting Room 262</i>	<i>West Meeting Room 263</i>	<i>West Meeting Room 264</i>	<i>South Meeting Rooms 237–238</i>	<i>South Meeting Room 233</i>	<i>South Meeting Room 236</i>
	B1: Large Data Sets and Long-Term Monitoring	Macrophyte and Periphyton Monitoring and Management	Hydrology and Hydrodynamics	Algal Toxins	Shallow Lakes	Innovative Modeling (WMAO)	Contaminants (WMAO)
3:00 pm – 3:30 pm	Refreshment Break / Exhibits Open / Poster Viewing (<i>Grand Ballroom B</i>)						
Concurrent Session C 3:30 pm – 4:40 pm	C1	C2	C3	C4	C5	C6	C7
	<i>West Meeting Rooms 260–261</i>	<i>West Meeting Room 262</i>	<i>West Meeting Room 263</i>	<i>West Meeting Room 264</i>	<i>South Meeting Rooms 237–238</i>	<i>South Meeting Room 233</i>	<i>South Meeting Room 236</i>
	Large Data Sets and Long-Term Monitoring	Autonomous Sampling and Automated Techniques	Ohio Lakes	Algal Toxins	Hypolimnetic Withdrawal	Innovative Watershed Planning (WMAO)	Nutrient Loading (WMAO)
5:00 pm – 5:45 pm	NALMS' Annual Membership Meeting (<i>West Meeting Rooms 260–261</i>)						
5:45 pm – 7:00 pm	Exhibitors' Reception and Poster Session (<i>Grand Ballroom B</i>)						
8:00 pm – 11:00 pm	Hospitality (<i>Rue Reolon – Hilton Cincinnati Netherland Plaza</i>)						

Join Us Next Year!
November 11–15, 2019



Thursday, November 1

7:00 am – 8:30 am	Continental Breakfast / Exhibits Open / Poster Viewing (<i>Grand Ballroom B</i>)				
7:30 am – 8:30 am	NALMS Committee Meetings (<i>Grand Ballroom A and Pre-Function Lobby</i>)				
Concurrent Session D 8:30 am – 10:00 am	D1 <i>West Meeting Rooms 260–261</i>	D2 <i>West Meeting Room 262</i>	D3 <i>West Meeting Room 263</i>	D4 <i>West Meeting Room 264</i>	D5 <i>South Meeting Rooms 237–238</i>
	Paleolimnological Applications for Lake Management	Lake Management and Restoration	Remote Sensing	Ecological Engineering of Sustainable Landscapes to Protect Downstream Aquatic Ecosystems	Phoslock
10:00 am – 10:30 am	Refreshment Break / Exhibits Open / Poster Viewing (<i>Grand Ballroom</i>)				
Concurrent Session E 10:30 am – 12:00 pm	E1 <i>West Meeting Rooms 260–261</i>	E2 <i>West Meeting Room 262</i>	E3 <i>West Meeting Room 263</i>	E4 <i>West Meeting Room 264</i>	E5 <i>South Meeting Rooms 237–238</i>
	Paleolimnological Applications for Lake Management	Lake Management and Restoration	Innovations	Ecological Engineering of Sustainable Landscapes to Protect Downstream Aquatic Ecosystems	Phoslock
12:00 pm – 1:30 pm	Lunch / Exhibits Open / Poster Viewing (<i>Grand Ballroom B</i>) CLM / CLP Luncheon (<i>Grand Ballroom A</i>) Clean Lakes Classic (<i>Runners meet in the Duke Energy Convention Center Main Entrance at 11:45 am</i>)				
Concurrent Session F 1:30 pm – 3:00 pm	F1 <i>West Meeting Rooms 260–261</i>	F2 <i>West Meeting Room 262</i>	F3 <i>West Meeting Room 263</i>	F4 <i>West Meeting Room 264</i>	F5 <i>South Meeting Rooms 237–238</i>
	Fish Ecology and Fisheries Management	Lake Management and Restoration	HABs – Prediction and Monitoring	Invasive Species	Watershed and Water Management
3:00 pm – 3:30 pm	Refreshment Break / Exhibits Open / Poster Viewing (<i>Grand Ballroom B</i>)				
Concurrent Session G 3:30 pm – 5:00 pm	G1 <i>West Meeting Rooms 260–261</i>	G2 <i>West Meeting Room 262</i>	G3 <i>West Meeting Room 263</i>	G4 <i>West Meeting Room 264</i>	G5 <i>South Meeting Rooms 237–238</i>
	Fish Ecology and Fisheries Management	Lake Management Topics	HABs	Voice of Experience	Watershed and Water Management
5:00 pm – 9:00 pm	NALMS Awards Reception and Banquet (<i>Pavilion – Hilton Cincinnati Netherland Plaza</i>)				
9:00 pm – 12:00 am	Hospitality (<i>Rue Reolon – Hilton Cincinnati Netherland Plaza</i>)				

Friday, November 2

7:30 am – 8:30 am	Continental Breakfast / Exhibits Open (<i>Grand Ballroom B</i>)				
Concurrent Session H 8:30 am – 10:00 am	H1 <i>West Meeting Rooms 260–261</i>	H2 <i>West Meeting Room 262</i>	H3 <i>West Meeting Room 263</i>	H4 <i>West Meeting Room 264</i>	
	Molecular Techniques for HABs	Nutrient Modelling and Monitoring	Utilizing Citizen Science	Lake Management Topics	
10:00 am – 10:30 am	Refreshment Break / Exhibits Open (<i>Grand Ballroom B</i>)				
Concurrent Session I 10:30 am – 12:00 pm	I1 <i>West Meeting Room 262</i>	I2 <i>West Meeting Room 263</i>	I3 <i>West Meeting Room 264</i>		
	Molecular Techniques for HABs	Nutrient Modelling and Monitoring	Public Outreach		
12:00 pm – 1:30 pm	Lunch / Exhibits Open (<i>Grand Ballroom B</i>)				
Concurrent Session J 1:30 pm – 3:00 pm	J1 <i>West Meeting Room 262</i>	J2 <i>West Meeting Room 263</i>	J3 <i>West Meeting Room 264</i>		
	Phytoplankton Ecology	HAB Control	Aeration and Artificial Mixing		

Registration and Meal Functions



Registration

Located in the Grand Ballroom Foyer.

Hours:

Tuesday, October 30	7:00 am – 5:30 pm
Wednesday, October 31	7:00 am – 5:30 pm
Thursday, November 1	7:00 am – 3:30 pm
Friday, November 2	7:30 am – 1:30 pm

Meal Functions

Unless noted otherwise, all meals listed below are provided to all full conference registrants on Wednesday, Thursday, and Friday. Daily registrants receive all meals on the day that they are registered for the conference.

* Available to workshop participants only.

Continental Breakfast

*Tuesday, October 30	7:30 am – 8:00 am	Grand Ballroom A
Wednesday, October 31	7:00 am – 8:30 am	Grand Ballroom B
Thursday, November 1	7:00 am – 8:30 am	Grand Ballroom B
Friday, November 2	7:30 am – 8:30 am	Grand Ballroom B

Morning Break

*Tuesday, October 30	10:00 am – 10:30 am	Grand Ballroom A
Wednesday, October 31	10:00 am – 10:30 am	Grand Ballroom B
Thursday, November 1	10:00 am – 10:30 am	Grand Ballroom B
Friday, November 2	10:00 am – 10:30 am	Grand Ballroom B

Lunch

*Tuesday, October 30	12:00 pm – 1:00 pm	Grand Ballroom A
Wednesday, October 31	12:00 pm – 1:30 pm	Grand Ballroom B
Thursday, November 1	12:00 pm – 1:30 pm	Grand Ballroom B
Friday, November 2	12:00 pm – 1:30 pm	Grand Ballroom B

Afternoon Break

*Tuesday, October 30	3:00 pm – 3:30 pm	Grand Ballroom A
Wednesday, October 31	3:00 pm – 3:30 pm	Grand Ballroom B
Thursday, November 1	3:00 pm – 3:30 pm	Grand Ballroom B

Exhibitors' Reception and Poster Session

Wednesday, October 31	5:45 pm – 7:00 pm	Grand Ballroom B
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NALMS Awards Reception & Banquet

Tickets are required for this event. Tickets are free with a full conference registration or Thursday-only registration, however, there are a limited number available.

Thursday, November 1	5:00 pm – 9:00 pm	Pavilion – Hilton Cincinnati Netherland Plaza
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Concurrent Session A 10:30 am – 12:00 pm, Wednesday, October 31						
A1: Large Data Sets and Long-Term Monitoring	A2: Combating Invasive Species	A3: Alum Treatment	A4: Algal Toxins	A5: Army Corps Water Quality Activities	A6: Data and Water Quality (WMAO)	A7: Waterways and Infrastructure (WMAO)
West Meeting Rooms 260–261 <i>Taxonomic Data Quality of Benthic Macroinvertebrate Samples Used for the 2017 National Lakes Assessment</i> James Stribling , Tetra Tech, Inc., Owings Mills, Maryland	West Meeting Room 262 <i>Quagga Mussels Eradicated from an Entire Pennsylvania Lake</i> Gavin Ferris , Solitude Lake Management, Inc., Virginia Beach, Virginia	West Meeting Room 263 <i>The Mystic(al) Lake Experience</i> Kenneth Wagner , Water Resource Services, Wilbraham, Massachusetts	West Meeting Room 264 <i>Vertical Distribution of Cyanobacteria Toxins in Willow Creek Reservoir, Oregon</i> ★ Sarah Burnett , University of Idaho, Moscow, Idaho	South Meeting Rooms 237–238 <i>Understanding HAB Impacts at USACE Managed Reservoirs</i> Gerard Clyde , US Army Corps of Engineers, Tulsa, Oklahoma	South Meeting Room 233 <i>Degradation and Recovery of the Scioto River (Ohio-USA) Related to Reduction in Sewage Pollution Via Improved Wastewater Treatment 1979-2015</i> Chris Yoder , Midwest Biodiversity Institute	South Meeting Room 236 <i>Two Birds with One Stone: Funding Flood Mitigation and Infrastructure Repair with FEMA HMGF</i> David Hayson , Stantec Consulting Services, Inc.
West Meeting Rooms 260–261 <i>Structural Changes to Lake Ecosystems Resulting from Long-Term Browning</i> ★ Rachel Pilla , Miami University, Oxford, Ohio	West Meeting Room 262 <i>Early Stages of Zebra Mussel (Dreissena polymorpha) Establishment in a Small, Temperate, Kettle Lake</i> ★ Stradder Caves , State University of New York College at Oneonta, Oneonta, New York	West Meeting Room 263 <i>An Automated Low Rate Alum Addition System to Enhance Effectiveness of Wet Detention Ponds and Improve Lake Water Quality</i> Harvey Harper , Environmental Research & Design, Belle Isle, Florida	West Meeting Room 264 <i>ELISA for Anabaenopeptins and Its Use for the Monitoring of Source Waters</i> Fernando Rubio , Abraxis Inc., Warminster, Pennsylvania	South Meeting Rooms 237–238 <i>Remote Sensing Research to Support HAB Monitoring for the USACE</i> Molly Reif , US Army Corps of Engineers, Kiln, Mississippi	South Meeting Room 233 <i>Leveraging DNA to Enhance Water Quality</i> Mauricio Larenas , Source Molecular Corporation	South Meeting Room 236 <i>Indian Lake Labyrinth Spillway – Improving the Efficiency of a Historic Spillway</i> Rob Kirkbride , Stanathec Consulting Services, Inc.
West Meeting Rooms 260–261 <i>Long-Term Trend Methodologies for Productivity Parameters Relating to Algal Blooms in Alberta Lakes</i> Bradley Peter , Alberta Lake Management Society, Edmonton, Alberta, Canada	West Meeting Room 262 <i>A Tale of Two Species: Aquatic Invasives in Butterfield Lake, New York</i> ★ David Andrews , State University of New York College at Oneonta, Oneonta, New York	West Meeting Room 263 <i>Planning, Implementing, and Monitoring the Response of Minnesota's Largest Alum Treatment</i> Matt Kocian , Rice Creek Watershed District, Blaine, Minnesota	West Meeting Room 264 <i>From Algal Toxins to Environmental DNA: Passive Samplers as a Tool to Help with Multiple Management Objectives</i> Ellen Preece , Robertson Bryan, Inc., Elk Grove, California	South Meeting Rooms 237–238 <i>Operating Flood Control Reservoirs to Maximize Recreation, Water Quality, and Fish and Wildlife Conservation</i> Andrew Johnson , US Army Corps of Engineers, Huntington, West Virginia	South Meeting Room 233 <i>Keeping an Eye on Water Quality in the Great Miami River Watershed</i> Sarah Hippensteel Hall and Scott Bell , Miami Conservancy District	South Meeting Room 236 <i>The Green Monster: A Case Study on Earth Dam Landslides, Hidden Valley Lake Dam, Dearborn County, Indiana</i> Peter Soltys , Fishbeck, Thompson, Carr, & Huber, Inc.
West Meeting Rooms 260–261 <i>Cyanobacterial Blooms Modify Food Web Structure and Interactions in Western Lake Erie</i> Ruth Briland , The Ohio State University, Columbus, Ohio	West Meeting Room 262 <i>Principles of Invasive Aquatic Plant Management</i> Leif N. Willey , Aquatic Control Inc., Seymour, Indiana	West Meeting Room 263 <i>Using an Adaptive Aluminum Sulfate (alum) Application Approach to Improve Water Quality in Bald Eagle Lake, Minnesota</i> Joseph Bischoff , Wenck Associates Inc., Golden Valley, Minnesota	West Meeting Room 264 <i>The Effect of Local Physical Lake Conditions on the Vertical Heterogeneity of Cyanobacteria and Microcystin in Stratified Eutrophic Lakes</i> Anne Wilkinson , University of Minnesota, Minneapolis, Minnesota and Wenck, Golden Valley, Minnesota	South Meeting Rooms 237–238 <i>Advanced Modeling of Nutrients with HEC-RAS</i> Billy Johnson , US Army Corps of Engineers, Davis, California	South Meeting Room 233 <i>Nutrient Mass Balance Study for Ohio's Major Rivers</i> Josh Griffin , Ohio EPA	South Meeting Room 236 <i>Ice Jam Awareness</i> Thomas Harris , USGS

Concurrent Session B 1:30 pm – 3:00 pm, Wednesday, October 31						
B1: Large Data Sets and Long-Term Monitoring	B2: Macrophyte and Periphyton Monitoring and Management	B3: Hydrology and Hydrodynamics	B4: Algal Toxins	B5: Shallow Lakes	B6: Innovative Modeling (WMAO)	B7: Contaminants (WMAO)
West Meeting Rooms 260–261 Changes in Water Quality Across a Longitudinal Gradient in Lake Lemon, Indiana: A 20-Year Perspective ★ Cory Sauve , Indiana University, Bloomington, Indiana	West Meeting Room 262 Wild Rice AWQMS Project Case Study Nancy Schuldt , Fond du Lac Environmental Program, Cloquet, Minnesota	West Meeting Room 263 The Role of Morphometry and Hydrology in Promoting Eutrophication and Harmful Algal Blooms in Reservoirs Reed Green , US Geological Survey, Little Rock, Arkansas	West Meeting Room 264 Toxic Toledo and Maumee Microcystis: Was the Unprecedented HAB in 2017 Lake or River Derived? Douglas Kane , Defiance College, Defiance, Ohio	South Meeting Rooms 237–238 Part I: Improving the Water Quality of an Urban Shallow Lake and then Navigating the Response William Bartodziej , Ramsey-Washington Metro Watershed District, Little Canada, Minnesota	South Meeting Room 233 The Role of Water Management and Climate Change Uncertainty: A Case Study in the Maumee River Watershed Haley Kujawa , The Ohio State University	South Meeting Room 236 Unregulated Contaminant Monitoring Rule (UCMR4) – A Utility Perspective Jeff Kauffman , Del-Co Water Company Inc.
Long-Term Limnological Response to Management of Internal Phosphorus Loading and Curly-Leaf Pondweed in Half Moon Lake, Wisconsin William James , University of Wisconsin–Stout, Menomonie, Wisconsin	Early Operational Use of ProcellaCOR for Selective Control of Invasive Aquatic Plants Mark Heilman , SePRO, Carmel, Indiana	Small Reservoir Water Level Management Greg Dutton , Canary Systems, Chattanooga, Tennessee	Maximum Microcystin Concentrations in Western Lake Erie Predicted by Early Season Nutrient Concentrations Darren Bade , Kent State University, Kent, Ohio	Part II: Evaluating the Effect and Potential Benefits of Mechanical Harvesting on Aquatic Plants and Phosphorus in an Urban Shallow Lake Keith Pilgrim , Barr Engineering, Edina, Minnesota	Assessing Uncertainty in Hydrological Models Within the Maumee River Watershed: The Role of Parameters and Farm Management Assumptions Anna Apostel , The Ohio State University	Toxicity Impact Assessment of PFOS and PFOA Joshua Glass , Air Force Institute of Technology
25 Years of Water Quality Change in Rhode Island Lakes and Ponds Betty Kreakie , US Environmental Protection Agency, Narragansett, Rhode Island	Bridging the Data Gap Between Spring Nutrient Input and Summer Periphyton Growth via Bay Sediment Delivery and Retention Analysis in Coeur d'Alene Lake, Idaho ★ Randi Notte , University of Idaho, Moscow, Idaho	Hydrodynamic Simulation of Lake Mead to Inform Future Drinking Water Treatment Needs Deena Giffen , Southern Nevada Water Authority, Las Vegas, Nevada	Cyanobacterial Blooms and Toxin Production in Lower Green Bay, Lake Michigan Gina LaLiberte , Wisconsin Department of Natural Resources, Madison, Wisconsin	Part III: Bridging the Gap between Public Expectations and Realistic Management Solutions of Shallow Minnesota Lakes Lyndsey Provos , Ramsey-Washington Metro Watershed District, Little Canada, Minnesota	Multiple Models Assess Options for Reaching Lake Erie's Phosphorus Reduction Targets Margaret Kalcic , The Ohio State University	PFOS Fate and Transport Modeling Using Numeric and Analytic Models Ramoane Jordan , Air Force Institute of Technology
The Importance of Nutrient Supply by Fish Excretion and Watershed Streams to a Eutrophic Lake Varies with Temporal Scale Over 19 Years ★ Tanner Williamson , Miami University, Oxford, Ohio	The Life History of <i>Nectopsyche albida</i> and Its Dietary Habits in Lake Coeur d'Alene, Idaho, with a Focus on Predation on the Invasive Eurasian Milfoil (<i>Myriophyllum spicatum</i>) ★ Stephanie Estell , University of Idaho, Moscow, Idaho	Watershed Management—Expanding the Nonpoint Source Horizon for Better Results Russ Gibson , Coldwater Consulting, LLC, Galena, Ohio	Safety and Decontamination Protocols When Sampling Blooms of Cyanobacteria: What's Being Done in the Real World, and What Some Institutions are Requesting to Approve Research Frank Wilhelm , University of Idaho, Moscow, Idaho	Floating Wetlands for Bulkhead Impact Mitigation in Urban Lakes Rob Zisette , Herrera Environmental Consultants, Seattle, Washington	Power of Volunteer Water Quality Data in Examining Regional Water Quality in SW Ohio, 2017 Michael Miller , Rivers Unlimited – Green Umbrella Watershed Group	The Impact, Fate, and Viability of Bacillus globigii Spores and MS2 Bacteriophage Injected into Activated Sludge Willie Harper , Air Force Institute of Technology

Concurrent Session C 3:30 pm – 4:40 pm, Wednesday, October 31						
C1: Large Data Sets and Long-Term Monitoring	C2: Autonomous Sampling and Automated Techniques	C3: Ohio Lakes	C4: Algal Toxins	C5: Hypolimnetic Withdrawal	C6: Innovative Watershed Planning (WMAO)	C7: Nutrient Loading (WMAO)
West Meeting Rooms 260–261 <i>The Use and Limitations of Large Data Sets in Evaluating the Health of Perid Stocks in Select New York Waters 1991–2016</i> ★ Justin Hulbert , State University of New York College at Oneonta, Oneonta, New York	West Meeting Room 262 <i>Semi-Automated Method for Detecting and Counting Cells of Cyanobacterial Colonies and Filaments</i> Frances Buerkens , Fluid Imaging Technologies, Scarborough, Maine	West Meeting Room 263 <i>Nutrient Issues Affecting Ohio's Inland Lakes: Evolution of Program and Lessons Learned</i> Shannon Brattebo , Tetra Tech, Inc., Spokane, Washington	West Meeting Room 264 <i>Ecological Role of Microcystin: Evidence from a Field Study</i> Aabir Banerji , US Environmental Protection Agency, Cincinnati, Ohio	South Meeting Rooms 237–238 <i>Revisit of the Lake Restoration Technique: Hypolimnetic Withdrawal</i> Gertrud Nürnberg , Freshwater Research, Baysville, Ontario, Canada	South Meeting Room 233 <i>The Art of Building Nonpoint Source Implementation-Strategic (NPS-IS) Plans for Successful Project Funding</i> Deanna Bobak , Civil & Environmental Consulting, Inc.	South Meeting Room 236 <i>Water Quality Impacts from Stacked Agricultural Conservation Practices</i> Elizabeth Callow , The Ohio State University
<i>Water Quality in Lake Mead During Extended Drought: Why Has There Been So Little Change?</i> Todd Tiefert , Southern Nevada Water Authority, Las Vegas, Nevada	<i>Innovations in Water Quality Sonde Integration and Cloud-Based Data Automation</i> Eric Robinson , In-Situ Inc., Fort Collins, Colorado	<i>Management of Cyanobacteria and their Associated Cyanotoxins and Taste and Odor Compounds</i> Fred Lubnow , Princeton Hydro, LLC, Exton, Pennsylvania	<i>Battling High Internal Phosphorus Loads with Hypolimnetic Withdrawal and a Unique Water Treatment Plant in Lake Borsjön, Sweden</i> Johanna Ansker , Stockholm Water and Waste, Stockholm, Sweden	<i>Big Data's Impact on Water Resources Management</i> John Menninger , Stantec Consulting Services, Inc.	<i>Agricultural Best Management Practices Impact Soil Health and Phosphorus Loadings in Lake Erie's Maumee River Watershed</i> Grey Evenson , The Ohio State University	<i>Within-River Phosphorus Retention in Western Lake Erie Tributaries: 1900 – 2018</i> Christopher Spiese , Ohio Northern University
<i>Kentucky Lake (USA) is Undergoing a "Change of State": Tipping Points' in Water Quality May Require New Approaches for Lake Management</i> Susan Hendricks , Murray State University, Murray, Kentucky	<i>Building a Lake-Scale Smart-Sensor Network for Intelligent Environmental Monitoring</i> Michael Kelly , IBM Research, Yorktown Heights, New York	<i>Tappan Lake Nutrient Reduction Initiative: An Interdisciplinary Water Research and Collaboration Initiative Among Various Organizations to Eliminate HABs from the Tappan Lake Water</i> Fernanda Craig , Muskingum Watershed Conservancy District, New Philadelphia, Ohio and Josh Britton , Harrison Soil & Water Conservation District, Cadiz, Ohio	<i>Assessing the Role of Vertical Mixing in Modulating Cyanobacteria Blooms in Shallow Reservoirs</i> Daniel Obenour , North Carolina State University, Raleigh, North Carolina	<i>Extended Discussion</i>	<i>Using Web Based Interactive Tools for Better Watershed Management and Resource Protection</i> David Rutter , Ohio Kentucky Indiana Regional Council of Governments	

Poster Presentations

2017–2018 Study of Phragmites Management Effects at the Esplanade

Bregieta Arvidson, *SOLitude Lake Management, Shrewsbury, Massachusetts*

Forecasting *Microcystis aeruginosa* Population Dynamics from Bacterioplankton DNA

Mark Bagley, *US Environmental Protection Agency, Cincinnati, Ohio*

The Cyanobacteria Monitoring Collaborative – An Evolving Approach to Cyanobacteria Monitoring

Shane Bradt, *University of New Hampshire, Durham, New Hampshire*

Applying Paleolimnological Techniques to Reservoirs: Challenges and Possibilities

Victoria Chraibi, *Tarleton State University, Stephenville, Texas*

Nutrient Management Challenges in Coeur d'Alene Lake, Idaho

Craig Cooper, *Idaho Department of Environmental Quality, Coeur d'Alene, Idaho*

Effects of Flow Diversion on Water Quality in a Shallow Prairie Reservoir

John-Mark Davies, *Water Security Agency of Saskatchewan, Saskatoon, Saskatchewan, Canada*

The Role of Reservoir Geomorphology in Determining Coverage Densities for Bathymetric Surveys in Oklahoma Water Supply Reservoirs

James Decker, *Oklahoma Water Resources Board, Oklahoma City, Oklahoma*

Open-Source Spectrometry for Collective Monitoring of Nutrients

Jiansheng Feng, *University of Akron, Akron, Ohio*

The Use of Phoslock® as a Maintenance Measure to Control Cyanobacteria in a Large Brazilian Urban Lake Subjected to High Organic Load

Tiago Finkler Ferreira, *Hidroscience Consultoria e Restauração Ambiental, Porto Alegre, Brazil*

Wisconsin's Strategy for Prevention of Aquatic Hitchhikers

Susan Graham, *Wisconsin Department of Natural Resources, Madison, Wisconsin*

Relationships Between Macrophyte Communities and Salinity Among Northwest Florida Coastal Dune Lakes

★ **Richard Gray**, *Northwest Florida State College, Niceville, Florida*

An Immigrant Hypolimnion: The Role of Intrusion, Anoxia and Entrainment in Mediating Phosphorus and Trophic State Dynamics in Mona Lake, Michigan

★ **Hayden Henderson**, *Michigan Technological University, Houghton, Michigan*

Reverse Osmosis: An Alternative for Wastewater Nutrient Removal

Kelsey Henderson, *The Ohio State University, Columbus, Ohio*

Social Marketing Maneuvers, Magic, and Measurable Change!

Jill Hoffmann, *White River Alliance, Indianapolis, Indiana*

Age Comparisons of Walleye in Select New York Waters 1991–2010

★ **Justin Hulbert**, *State University of New York College at Oneonta, Oneonta, New York*

Shifts in Phytoplankton Genera with Salinity in Northwest Florida Coastal Dune Lakes

★ **Linda Ivey**, *Northwest Florida State College, Niceville, Florida*

Bioaccumulation of Selenium and Mercury in Fish Tissues of an Urban Watershed and Reservoir, Denver Colorado

Nathan Jahns, *GEI Consultants, Inc., Denver, Colorado*

Retention Time Analysis Through a Finite Element Model at Old Woman Creek Wetland

Yang Ju, *The Ohio State University, Columbus, Ohio*

Long-Term Impacts by Applications of Fluridone and Triclopyr to Target and Non-Target Aquatic Vegetation Over a Fourteen-Year Period

Amanda Mahaney, *Solitude Lake Management, Shrewsbury, Massachusetts*

Combining Citizen Science with Remote Sensing to Monitor Lake Storage

Grant Parkins, *University of North Carolina at Chapel Hill, Chapel Hill, North Carolina*

An Emerging Technology Using a Resilient Fabric Material for Living Shorelines

Bruce Richards, *Sox Erosion Solutions, Boca Raton, Florida*

ELISA for Anabaenopeptins and Its Use for the Monitoring of Source Waters

Fernando Rubio, *Abraxis Inc., Warminster, Pennsylvania*

Nutrient Loading from Stormwater Systems in Dayton, Ohio

★ **Zachary Schultz**, *Wright State University, Dayton, Ohio*

Nutrient and Trace Metal Co-limitation of Algal Blooms in the Great Lakes

★ **Jordyn Stoll**, *Kent State University, Kent, Ohio*

Some Stormwater Ponds Release Phosphorus

★ **Vinicius Taguchi**, *University of Minnesota, Minneapolis, Minnesota*

The Effects of Hydrogen Sulfide (H₂S) Within the Hypolimnion of a Dystrophic and Eutrophic Lake on Zooplankton Survival and Vertical Distribution

★ **Keiko Wilkins**, *Miami University, Oxford, Ohio*

Concurrent Session D 8:30 am – 10:00 am, Thursday, November 1				
D1: Paleolimnological Applications for Lake Management	D2: Lake Management and Restoration	D3: Remote Sensing	D4: Ecological Engineering of Sustainable Landscapes to Protect Downstream Aquatic Ecosystems	D5: Phoslock
West Meeting Rooms 260–261	West Meeting Room 262	West Meeting Room 263	West Meeting Room 264	South Meeting Rooms 237–238
<p>Regional Paleolimnology Reveals Widespread Anthropogenic Impacts</p> <p>Euan Reavie, University of Minnesota Duluth, Duluth, Minnesota</p>	<p>Nutrient Management Challenges in Coeur d'Alene Lake, Idaho</p> <p>Craig Cooper, Idaho Department of Environmental Quality, Coeur d'Alene, Idaho</p>	<p>Use of Remote Sensing Techniques to Monitor Harmful Algal Blooms</p> <p>Christian Corbell, Groupe Hémisphères, Québec, Québec, Canada</p>	<p>Sustainably Solving Legacy Phosphorus and Nitrogen in Landscapes with Wetlands and Wetland Culture</p> <p>William Mitsch, Florida Gulf Coast University, Naples, Florida</p>	<p>Whole Lake Combined PAC-Phoslock Treatment to Manage Eutrophication and Cyanobacteria</p> <p>★ Maira Mucci, Wageningen University, Wageningen, The Netherlands</p>
<p>Applying Paleolimnological Techniques to Reservoirs: Challenges and Possibilities</p> <p>Victoria Chraibi, Tarleton State University, Stephenville, Texas</p>	<p>Managing Large Inland Lakes: The Need for an Integrated Management Approach for Successful Lake Management</p> <p>Jennifer Jermolowicz-Jones, Restorative Lake Sciences, Spring Lake, Michigan</p>	<p>Cyanobacteria from Space: Satellite Imagery for Bloom Monitoring</p> <p>★ Igor Ogashawara, Indiana University-Purdue University at Indianapolis, Indianapolis, Indiana</p>	<p>Nutrient Retention by Wetland Mesocosms in the First Year of a Wetland Hydrologic Experiment at Buckeye Lake Ohio</p> <p>★ Bingbing Jiang, University of South Florida, Tampa, Florida</p>	<p>Evaluation of a Whole Lake Eutrophication Management Technique Using Combined Flocculation and In situ Phosphorus Immobilization</p> <p>★ Frank van Oosterhout, Wageningen University, Wageningen, The Netherlands</p>
<p>Paleolimnological Assessment of Lakes on the Kissimmee Chain, South Florida USA</p> <p>★ Francesca Lauterman, University of South Florida St. Petersburg, St. Petersburg, Florida</p>	<p>Results of Innovative Restoration Techniques at Lake Apopka, Florida</p> <p>Erich Marzolf, St. Johns River Water Management District, Palatka, Florida</p>	<p>Remote Sensing of Harmful Algal Blooms and Water Quality Characteristics in Kentucky Lakes</p> <p>Colin Arnold, Kentucky Division of Water, Frankfort, Kentucky</p>	<p>Constructed Wetlands and Nutrient Removal in Grand Lake St. Marys Watershed</p> <p>Stephen Jacquemin, Wright State University, Celina, Ohio</p>	<p>Control of Floating Algal Mats in a Highly Frequented Recreational Lake</p> <p>Karin Finsterle, Phoslock Europe GmbH, Zug, Switzerland</p>
<p>Innovative Approaches in Paleolimnology: How Recent Advances Can Inform Lake Management</p> <p>Melanie Riedinger-Whitmore, University of South Florida St. Petersburg, St. Petersburg, Florida</p>	<p>Pacification: The New Narrative on Lake Management</p> <p>Dick Osgood, Lake Advocates, Duluth, Minnesota</p>	<p>Extended Discussion</p>	<p>Understanding the Role of Wetland Ecosystems in Protecting Water Quality from Potential Zoonotic Pathogen Spread: Arcobacter Transmission Dynamics in Western Lake Erie Wetland and Adjacent Swimming Beach</p> <p>Jiyoung Lee, The Ohio State University, Columbus, Ohio</p>	<p>Phoslock® Research in the Netherlands</p> <p>Miquel Lüring, Wageningen University, Wageningen, The Netherlands</p>

Concurrent Session E 10:30 am – 12:00 pm, Thursday, November 1				
E1: Paleolimnological Applications for Lake Management	E2: Lake Management and Restoration	E3: Innovations	E4: Ecological Engineering of Sustainable Landscapes to Protect Downstream Aquatic Ecosystems	E5: Phoslock
West Meeting Rooms 260–261	West Meeting Room 262	West Meeting Room 263	West Meeting Room 264	South Meeting Rooms 237–238
<p>Multi-Indicator, Ecologically Based Paleolimnological Studies Help Optimize Lake-Management and Restoration Strategies</p> <p>Thomas Whitmore, University of South Florida St. Petersburg, St. Petersburg, Florida</p>	<p>Development of the Mill Pond Remediation Plan</p> <p>Stephen Souza, Princeton Hydro, LLC, Ringoes, New Jersey</p>	<p>Building a Smart Lake Erie: Intelligent Water Management as a Regional Economic Driver</p> <p>Max Herzog, Cleveland Water Alliance, Cleveland, Ohio</p>	<p>The Business of Wetland Culture – Seeking Viable Business Models for Landscape-Scale Nutrient Capture</p> <p>Sam Miller, University of Notre Dame, Notre Dame, Indiana</p>	<p>Phoslock® as a Maintenance Measure to Control Cyanobacteria in a Large Brazilian Urban Lake Subjected to High Organic Load</p> <p>Tiago Finkler Ferreira, Hidroscienze Consultoria e Restauração Ambiental, Porto Alegre, Brazil</p>
<p>The Long-Term Effects of Multiple Environmental Stressors on Shifting Benthic Production in a Large Shallow Lake</p> <p>★ Michael Murphy, Carleton University, Ottawa, Ontario, Canada</p>	<p>A Model-Based Approach for Developing Lake Management Plans</p> <p>Seyoum Gebremariam, Metropolitan Water District of Southern California, La Verne, California</p>	<p>Web Interoperability Services with GIS for Global Environmental Monitoring Data Management and Sharing</p> <p>Jens Proche, KISTERS North America, Roseville, California</p>	<p>Feasibility of Bundling Conservation Credits for Water Quality Trading in the Blanchard Watershed of Lake Erie</p> <p>Yanting Guo, University of Findlay, Findlay, Ohio</p>	<p>Combining Lake Restoration Techniques: Overview of Different Treatment Methods Used in Combination with Lanthanum Modified Bentonite (LMB)</p> <p>Patrick Van Goethem, Phoslock Europe GmbH, Antwerp, Belgium</p>
<p>Extended Discussion</p>	<p>Implementation and Results of a Comprehensive Urban Shallow Lake Monitoring Plan to Understand Ecosystem Dynamics and Inform Holistic Lake Management</p> <p>Sarah Wein, Capitol Region Watershed District, Saint Paul, Minnesota</p>	<p>Open-Source Spectrometry for Collective Monitoring of Nutrients</p> <p>Jiansheng Feng, University of Akron, Akron, Ohio</p>	<p>Extended Discussion</p>	<p>Extended Discussion</p>
<p>Extended Discussion</p>	<p>Too Many Innovations? Recent History on a Multi-Dimensional Small Lake Restoration – Mountain Lake, San Francisco</p> <p>Alex Horne, University of California, Berkeley California</p>	<p>Telling the Story of Your Lake with Online Maps</p> <p>Shane Bradt, University of New Hampshire, Durham, New Hampshire</p>		

Concurrent Session F 1:30 pm – 3:00 pm, Thursday, November 1				
F1: Fish Ecology and Fisheries Management	F2: Lake Management and Restoration	F3: HABs – Prediction and Monitoring	F4: Invasive Species	F5: Watershed and Water Management
West Meeting Rooms 260–261 Developing a Conservation Strategy for Riverine Fish Habitat in Oxbow Lakes Along the Lower Wabash and White Rivers in Indiana Cassie Hauswald , The Nature Conservancy, Laconia, Indiana	West Meeting Room 262 Sediment Sampling to Assist in Evaluating Reservoir Management Methods Kelly DiNatale , DiNatale Water Consultants, Boulder, Colorado	West Meeting Room 263 Building a Financially Sustainable Early-Warning System for Harmful Algae Max Herzog , Cleveland Water Alliance, Cleveland, Ohio	West Meeting Room 264 The Effects of Invasive Species in Kentucky Lake (USA) as Documented by Long-Term Monitoring David White , Murray State University, Murray, Kentucky	South Meeting Rooms 237–238 Lake Mauvaise Terre Nutrient and Sediment Reduction Initiative Jeff Boeckler , Northwater Consulting, Springfield, Illinois
Reduced Oxythermal Habitat in a Two-Story Fishery: Implications for Phosphorus Management in a Northern Wisconsin Lake Dendy Lofton , LimnoTech, Oakdale, Minnesota	A Method of Reducing Septic System Impact to Lakes Paul Sutphen , Clear Lake Technology, Branchville, New Jersey	Monitoring Cyanobacteria in Mixed Algal Populations in an Effort to Predict the Onset of CyanohABs Lawrence Younan , Turner Designs, San Jose, California	Constraints on Curlyleaf: An Evaluation Curlyleaf Pondweed Biology and Management through Analysis of Monitoring Data from Across Organizations ★ Michael Verhoeven , University of Minnesota, St. Paul, Minnesota	Response of a Reservoir Ecosystem to Changes in Watershed Agriculture Over Two Decades Michael Vanni , Miami University, Oxford, Ohio
Influence of Fisheries Management on Limnological Characteristics of Three Missouri Reservoirs John Jones , University of Missouri, Columbia, Missouri	A Tale of Two Watersheds: Addressing Challenges for Funding Restoration Clell Ford , Beaver Watershed Alliance, Springdale, Arkansas	Working Towards a Forecast of Lake Erie Cyanobacterial Bloom Toxicity Justin Chaffin , Ohio State University, Put in Bay, Ohio	Wisconsin's Strategy for Prevention of Aquatic Hitchhikers Susan Graham , Wisconsin Department of Natural Resources, Madison, Wisconsin	Upstream Collaboration and Investment Achieves Downstream Protection Kate Dunlap , City of Boulder, Colorado
Using Baited Box Nets to Remove Common Carp to Improve Water Quality in Shallow Lakes Jordan Wein , Carp Solutions, Saint Paul, Minnesota	Reservoir Modeling to Enhance Temperature Compliance Near a Power Plant in the Tennessee River System Rich Wildman , Geosyntec Consultants, Portland, Oregon	Lake Champlain's Cost-Effective and Successful Cyanobacteria Monitoring Program Angela Shambaugh , Vermont Department of Environmental Conservation, Montpelier, Vermont	Deep in the Weeds of Aquatic Plant Management in New Jersey's Delaware and Raritan Canal Chris Doyle , SOLitude Lake Management, Washington, New Jersey	Changes in Grand Lake St. Marys Watershed: Moving Towards an Improved Understanding of Water Quality Over the Past Decade Stephen J. Jacquemin , Wright State University, Celina, Ohio

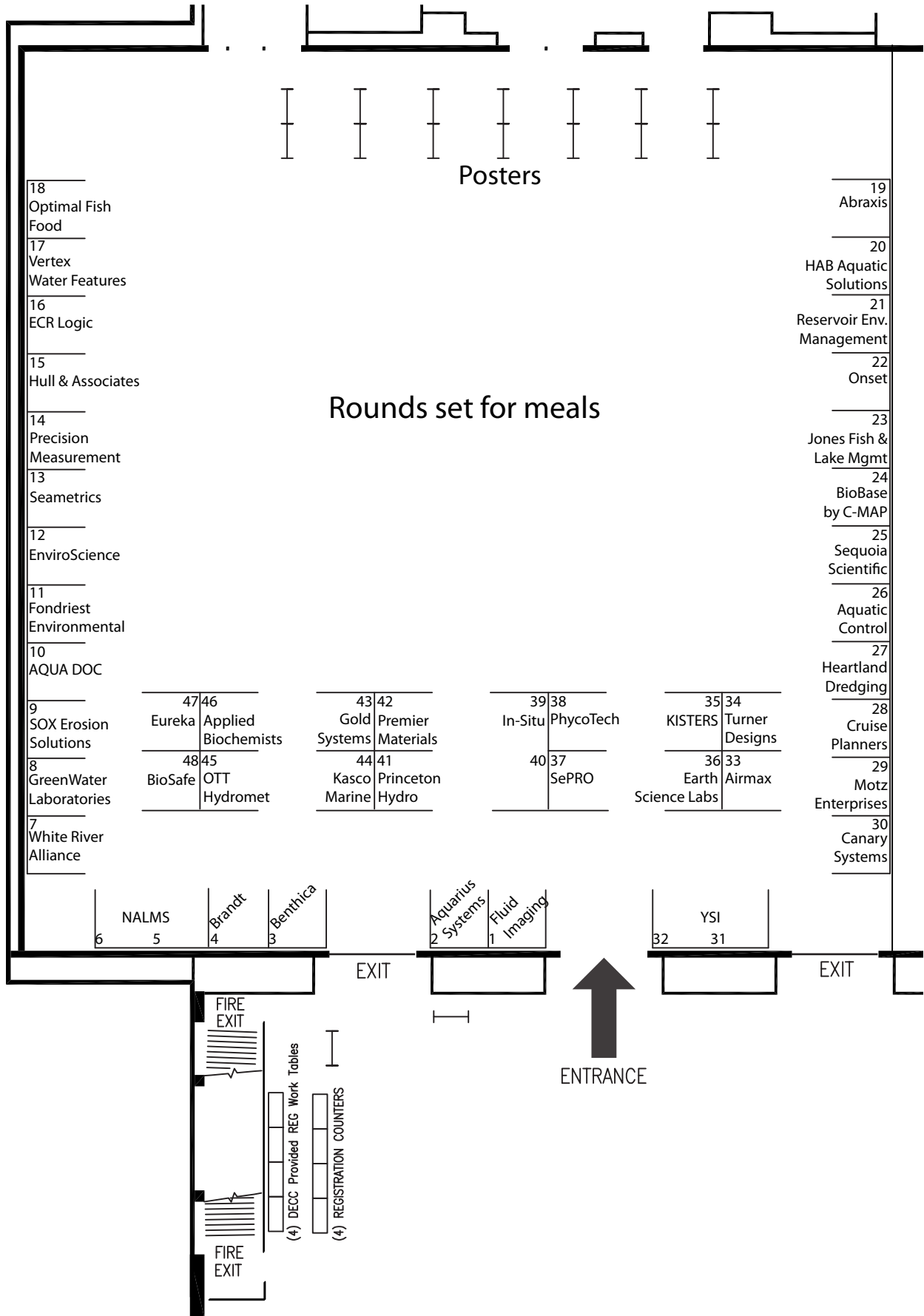
Concurrent Session G 3:30 pm – 5:00 pm, Thursday, November 1				
G1: Fish Ecology and Fisheries Management	G2: Lake Management Topics	G3: HABs	G4: Voice of Experience	G5: Watershed and Water Management
West Meeting Rooms 260-261	West Meeting Room 262	West Meeting Room 263	West Meeting Room 264	South Meeting Rooms 237-238
<p>Coolwater Fish Habitat in a Changing Climate</p> <p>Shahram Missaghi, University of Minnesota Extension, Farmington, Minnesota</p>	<p>Hydropower Retrofits at Non-Powered Dams: Trends in Environmental Mitigation</p> <p>Miles Mobley, Oak Ridge National Laboratory, Oak Ridge, Tennessee</p>	<p>Influence of Environmental Factors on Off-Flavor Metabolite Production by Bacteria in a Eutrophic Reservoir</p> <p>★ Nicolas Clercin, Indiana University – Purdue University, Indianapolis, Indiana</p>	<p>A Day in the Life</p> <p>Stephen Souza, Princeton Hydro, LLC, Ringoes, New Jersey</p>	<p>Some Stormwater Ponds Release Phosphorus</p> <p>★ Vinicius Taguchi, University of Minnesota, Minneapolis, Minnesota</p>
<p>The Feasibility of Restoring Lake Whitefish as an Integral Component of the Cold-Water Fish Community in Otsego Lake, New York</p> <p>★ Samantha Carey, State University of New York, Oneonta, New York</p>	<p>Kicking the Tires on the New 3D Water Quality Model AEM3D</p> <p>Keith Pilgrim, Barr Engineering Company, Minneapolis, Minnesota</p>	<p>Understanding the Effect of Salinity Tolerance on Cyanobacteria Associated with a Harmful Algal Bloom in Lake Okeechobee, Florida</p> <p>Barry Rosen, US Geological Survey, Orlando, Florida</p>	<p>40+ Years of Rowboat Limnology: What a Ride!</p> <p>Kenneth Wagner, Water Resource Services, Wilbraham, Massachusetts</p>	<p>Utilizing EPA Green Infrastructure Toolkit to Evaluate Potential Management Strategies for an Urban Watershed</p> <p>★ Monica Matt, State University of New York College at Oneonta, Cooperstown, New York</p>
<p>Extended Discussion</p>	<p>Continuous Lake Monitoring Buoy – Lessons Learned from the First Year</p> <p>Kiyoko Yokota, State University of New York College at Oneonta, New York</p>	<p>Potential Linkage Between Zebra Mussel Establishment, Cyanobacterial Community Composition and Microcystin Levels in the United States Lakes</p> <p>Jiyoung Lee, The Ohio State University, Columbus, Ohio</p>	<p>67 Years of Streams, Lakes, Reservoirs and Oceans: A Wet Life!</p> <p>Alex Horne, University of California, Berkeley, California</p>	<p>Ecosystem Service Assessment of Stormwater Management Features in Greater Cleveland</p> <p>Julie Wolin, Cleveland State University, Cleveland, Ohio</p>
	<p>Aquatic Effects Monitoring for the Meliadine Mine</p> <p>Colleen Prather, Golder Associates Ltd., Edmonton, Alberta, Canada</p>	<p>Cyanobacterial Combat: The Battle to Manage pH in a Naturally-Acidic Groundwater-Fed Lake</p> <p>Diane Lauritsen, Envirochem, Wilmington, North Carolina</p>	<p>Extended Discussion</p>	<p>The State of the Lake: Communicating Watershed Science and Engaging Stakeholders in the Lake Champlain Basin</p> <p>Ellen Kujawa, Lake Champlain Basin Program, Grand Isle, Vermont</p>

Concurrent Session H 8:30 am – 10:00 am, Friday, November 2			
H1: Molecular Techniques for HABs West Meeting Rooms 260–261	H2: Nutrient Modelling and Monitoring West Meeting Room 262	H3: Utilizing Citizen Science West Meeting Room 263	H4: Lake Management Topics West Meeting Rooms 264
<p>Evaluation of CyanoDTeC Multi-Plex qPCR Assay as a Cyanotoxin Screening Tool for Ohio Public Water Systems and Inland Lakes Heather Raymond, Ohio Environmental Protection Agency, Columbus, Ohio</p>	<p>A Water and Mass Balance Model for Evaluating Phosphorus Pathways and Lake Improvement Strategies in Three Shallow, Eutrophic Lakes in the Upper Midwest Charles Ikenberry, FYRA Engineering, Des Moines, Iowa</p>	<p>LakeKeepers: Expanding Citizen Based Monitoring in Alberta, Canada Bradley Peter, The Alberta Lake Management Society, Edmonton, Alberta, Canada</p>	<p>Damaging Solar UV Radiation as an Environmental Regulator of the In situ Abundance of Mosquito Larvae: A Test of the Relative Importance of Shading from Damaging Solar UV Radiation by DOM and Organismal Capabilities for DNA Repair ★ Nicole Berry, Miami University, Oxford, Ohio</p>
<p>Using Molecular Analyses to Help Understand and Manage Waters Affected by Cyanobacterial Harmful Algal Blooms Erin Stelzer, USGS Ohio-Kentucky-Indiana Water Science Center, Columbus, Ohio</p>	<p>Modeling Phosphorus and Nitrogen Loading Throughout the Entire Great Lakes Basin using SPARROW Glenn Benoy, International Joint Commission, Ottawa, Ontario, Canada</p>	<p>Combining Citizen Science with Remote Sensing to Monitor Lake Storage Grant Parkins, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina</p>	<p>An Emerging Technology Using a Resilient Fabric Material for Living Shorelines Bruce Richards, Sox Erosion Solutions, Boca Raton, Florida</p>
<p>Structure and Physiological Activity of Cyanobacterial Communities in a Freshwater Lake: A Three-Year Study Using 16S rRNA Gene Sequencing Analysis Jorge Santo Domingo, US Environmental Protection Agency, Cincinnati, Ohio</p>	<p>Long-Term Shallow Lake Nutrient and Water Quality Management in an Agricultural Watershed Using Conservation Management Practices Richard Lizotte, USDA-ARS National Sedimentation Laboratory, Oxford, Mississippi</p>	<p>In Search of the Complete Picture: Indiana Lakes Trophic Classification Comparison Across Citizen Science, State, and National Monitoring Programs ★ Heather Bearnnes-Loza, Indiana Clean Lakes Volunteer Lake Monitoring Program, Bloomington, Indiana</p>	<p>Are Carbon Emissions from Lakes on the Rise? Investigating Organic Carbon Degradation by Microbes and Sunlight in Inland Waters Sarah Nalven, Wenck Associates, Golden Valley, Minnesota</p>
<p>Nitrogen-Phosphorus-Associated Metabolic Activities and Community Structures During the Development of a Cyanobacterial Bloom Revealed by Metatranscriptomics Jingrang Lu, US Environmental Protection Agency, Cincinnati, Ohio</p>	<p>Extended Discussion</p>	<p>Lake Observer: A Mobile App for Recording Lake and Water Quality Observations Across the Globe Lisa Borre, Cary Institute of Ecosystem Studies, Millbrook, New York</p>	<p>Winter Road Maintenance: Identifying and Lowering Private Companies' Barriers to Adopting Best Management Practices ★ Holden Sparacino, University of Vermont, Burlington, Vermont</p>

Concurrent Session I 10:30 am – 12:00 pm, Friday, November 2		
I1: Molecular Techniques for HABs <i>West Meeting Room 262</i>	I2: Nutrient Modelling and Monitoring <i>West Meeting Room 263</i>	I3: Public Outreach <i>West Meeting Room 264</i>
Evidence-Based Guidelines for Microbial Source Tracking Projects Mauricio Larenas , Source Molecular Corporation, Miami, Florida	The Heidelberg Tributary Loading Program: Perspectives from Between the Land and Lake Laura Johnson , Heidelberg University, Tiffin, Ohio	Citizen Science from the Ground Up: UpStream – Building a Public-Private Partnership Between Industry and Public Schools Ann St. Amand , PhycoTech, Inc, St. Joseph, Michigan
Adaptation of Lake Erie Planktothrix Blooms to Shifts in N Availability ★ Michelle Neudeck , Bowling Green State University, Bowling Green, Ohio	Assessment of Lake of the Woods' Internal Phosphorus Loading Julie Blackburn , RESPEC, Roseville, Minnesota	Social Marketing Maneuvers, Magic, and Measurable Change! Jill Hoffmann , White River Alliance, Indianapolis, Indiana
Extended Discussion	Spatiotemporal Assessment of Water Chemistry Dynamics in the Coastal Dune Lakes Alexander Hymann , Northwest Florida State College, Niceville, Florida	Extended Discussion
	Extended Discussion	

Concurrent Session J 1:30 pm – 3:00 pm, Friday, November 2		
J1: Phytoplankton Ecology West Meeting Room 262	J2: HAB Control West Meeting Room 263	J3: Aeration and Artificial Mixing West Meeting Room 264
<p>Annual Patterns of Phytoplankton in Subtropical, Florida Lakes</p> <p>Dana Stephens, Northwest Florida State College, Niceville, Florida</p>	<p>Reducing Harmful Algal Blooms on a 150-Acre, Hyper-Eutrophic Lake Using a New Biological Treatment Method</p> <p>John Tucci, Lake Savers LLC, Richland, Michigan</p>	<p>The Future of Bubbles: Novel Applications to Linear Oxygen Diffusing Systems</p> <p>Shayne Levoy, Canadianpond.ca, Knowlton, Quebec, Canada</p>
<p>Internal Loading of Nitrogen and Phosphorus Supports Non-N-Fixing Cyanobacteria in Honeoye Lake</p> <p>★ Justin Myers, Wright State University, Dayton, Ohio</p>	<p>Strategic Management of Cyanobacteria in Drinking Water Reservoirs Using an Action Threshold Based Approach</p> <p>West Bishop, SePRO Corporation, Whitakers, North Carolina</p>	<p>Oxygenation System for Alabama Power's Logan Martin Hydroelectric Plant</p> <p>Mark Mobley, Mobley Engineering, Inc., Norris, Tennessee</p>
<p>Extended Discussion</p>	<p>From Bench Scale Trials to Effective Full Scale Cyanobacterial Management with Liquid Activated Peroxygen Algacide/Cyanobactericide</p> <p>Tom Warmuth, BioSafe Systems, East Hartford, Connecticut</p>	<p>Not So Fast: Reassessing a Common Rule of Thumb for Destratification System Design</p> <p>Kevin Bierlein, Hydros Consulting Inc., Boulder, Colorado</p>
	<p>Patterns in Surface Water Phosphorus Concentrations and Biosolids Utilization in the Upper St. Johns River</p> <p>Erich Marzolf, St. Johns River Water Management District, Palatka, Florida</p>	<p>Quantifying Mixing Effectiveness for Water Quality Improvements in Lakes</p> <p>Paul Wolff, Wolfware Ltd, Norris, Tennessee</p>

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- atmospheric deposition
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- nutrient pollution
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- aquatic invasive species