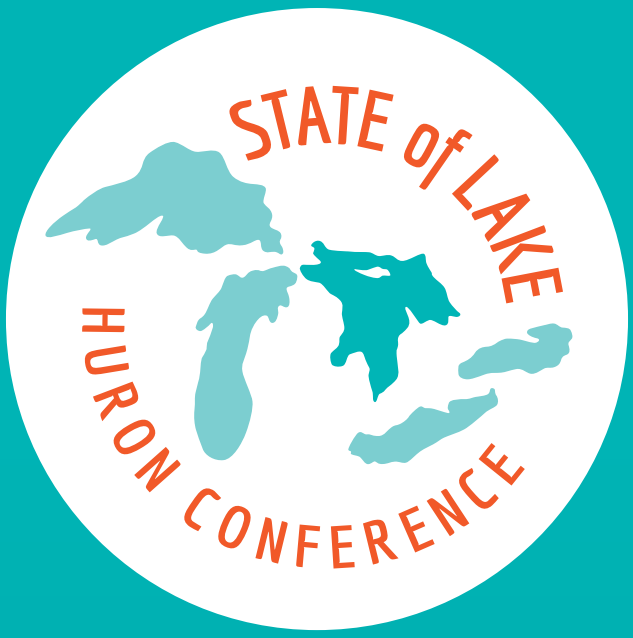

AN IAGLR CONFERENCE

October 9–11, 2019
at Saginaw Valley State University
Saginaw, Michigan

IAGLR

International Association for Great Lakes Research

We thank the sponsors of the 2019 State of Lake Huron conference

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SINKHOLES IN LAKE HURON. Not much is known about these crater-like ecosystems at the bottom of the lake, where ancient microbial colonies thrive in low oxygen, feeding off sulfur. Researchers use underwater robots called remote operated vehicles (ROVs) to get a better understanding of the workings of these unique lake-floor habitats. Photo by Great Lakes Outreach Media for NOAA Great Lakes Environmental Research Laboratory.

Contents

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See inside back cover for IAGLR's 2020 conferences including the 63rd Annual Conference on Great Lakes Research in Winnipeg and the State of Lake Ontario conference in Toronto

CO-HOSTS

International Association for Great Lakes Research
iaglr.org

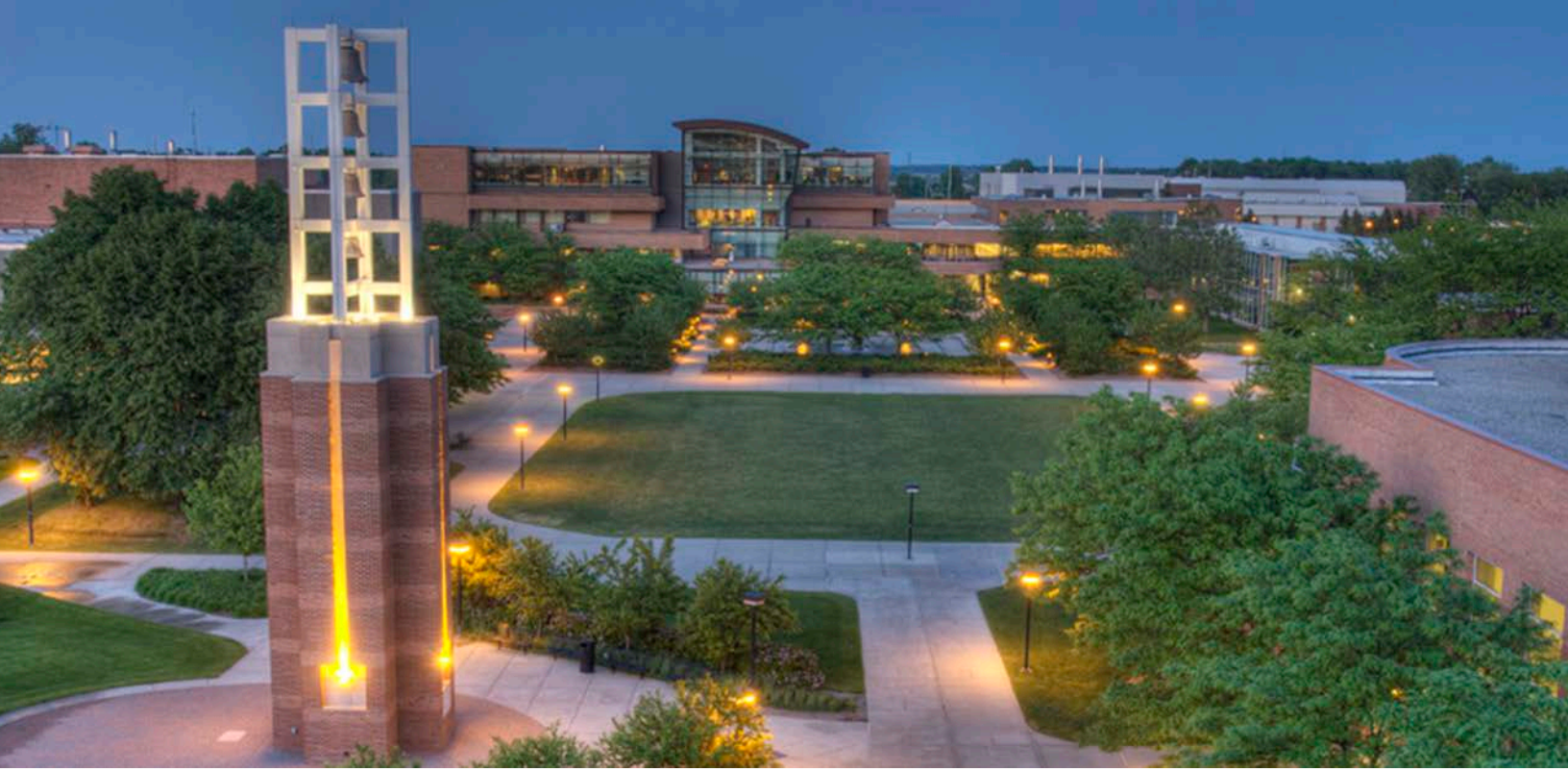
The International Association for Great Lakes Research is a scientific organization made up of researchers studying the Laurentian Great Lakes, other large lakes of the world, and their watersheds, as well as those with an interest in such research. With its mission to advance understanding of the world's great lake ecosystems, IAGLR is uniquely positioned to foster the connection between science and policy, a connection vital for effective management and protection of the world's large lakes. Visit the IAGLR website to learn more about current initiatives including Evaluating Great Lakes Area of Concern Restoration and the State of Lake conference series.

Council of the Great Lakes Region
councilgreatlakesregion.org

The Council of the Great Lakes Region's vision is to create the most prosperous, innovative, sustainable, livable, and welcoming region in the world. Its mission is to lead a new era of economic growth, environmental protection, and individual well-being by connecting diverse interests and sectors across the Great Lakes region to one another, discovering solutions to complex policy problems, and influencing decisions that affect the region's long-term prosperity and sustainability.

Great Lakes Beach Association
greatlakesbeachassociation.org

The Great Lakes Beach Association is a diverse group of over 1,000 scientists, public health professionals, beach managers, and citizens that are interested in working together, building collaborations, and leveraging resources to improve beach water quality in the Great Lakes and beyond. Its mission is the pursuit of healthy beach water conditions based on four approaches: investigations, modeling, methods, and information systems. Training sessions and new information are presented at annual conferences open to everyone, and are distributed daily on the BEACHNET listserv. The Great Lakes Beach Association is led by elected board members from Canada and the United States.



Saginaw Valley State University. Photo courtesy University Communications.

Dear Attendees,

On behalf of the International Association for Great Lakes Research, it is my pleasure to welcome you to the 2019 State of Lake Huron Conference. A key goal in fulfilling IAGLR's mission to advance understanding of the world's great lake ecosystems is to engage researchers, policy makers, industry, and citizens by sponsoring conferences ranging from international to regional in scope. The State of Lake conferences are designed to focus on lake-specific research and policy development by bringing together researchers, managers, educators, and nonprofit organizations that will broaden the discussion and provide diverse interaction among stakeholders. The program includes a wide variety of presentations addressing these important areas. I look forward to hearing about the state of Lake Huron and hope that I will have a chance to meet many of you along the way.

Enjoy the conference!

Sincerely,

Paul Sibley
President, International Association for Great Lakes Research

Professor, School of Environmental Sciences, University of Guelph, Guelph, Ontario

CONFERENCE ORGANIZERS

IAGLR Executive Members

Paul Sibley PRESIDENT

Michael Twiss PAST PRESIDENT

Ed Verhamme VICE PRESIDENT

Scott McNaught TREASURER

Wendy Foster BUSINESS MANAGER

Paula McIntyre COMMUNICATIONS DIRECTOR

State of Lake Huron Committee

Ed Verhamme COMMITTEE CHAIR
International Association for Great Lakes Research
CO-HOST

Dave Karpovich
Saginaw Valley State University LOCAL HOST

Mark Fisher
Council of the Great Lakes Region CO-HOST

Shannon Briggs
Great Lakes Beach Association CO-HOST
and Michigan Department of Environment, Great Lakes, and Energy

Lake Huron LaMP Work Group Members Supporting State of Lake Huron Committee

Elizabeth LaPlante
U.S. Environmental Protection Agency

Steve Clement
Environment and Climate Change Canada

Paul Parete
Environment and Climate Change Canada

Bretton Joldersma
Michigan Department of Environment, Great Lakes, and Energy

David (Bo) Bunnell
U.S. Geological Survey

Aubrey E. Maccoux-LeDuc
Bay Mills Indian Community

Jim Luke
U.S. Army Corps of Engineers

Dan Flower
Environment and Climate Change Canada

SOLH Event Planners

Laura Olech
Steppe Solutions

Jean Steppe
Steppe Solutions

Welcome conference exhibitors!

Exhibits are open Wednesday, 10 a.m.–5:40 p.m. and Thursday, 7:30 a.m.–5:40 p.m. in the 2nd Floor Atrium of the Conference Center at SVSU.

Bio-Rad Laboratories

Blue Accounting

International Joint Commission

LimnoTech

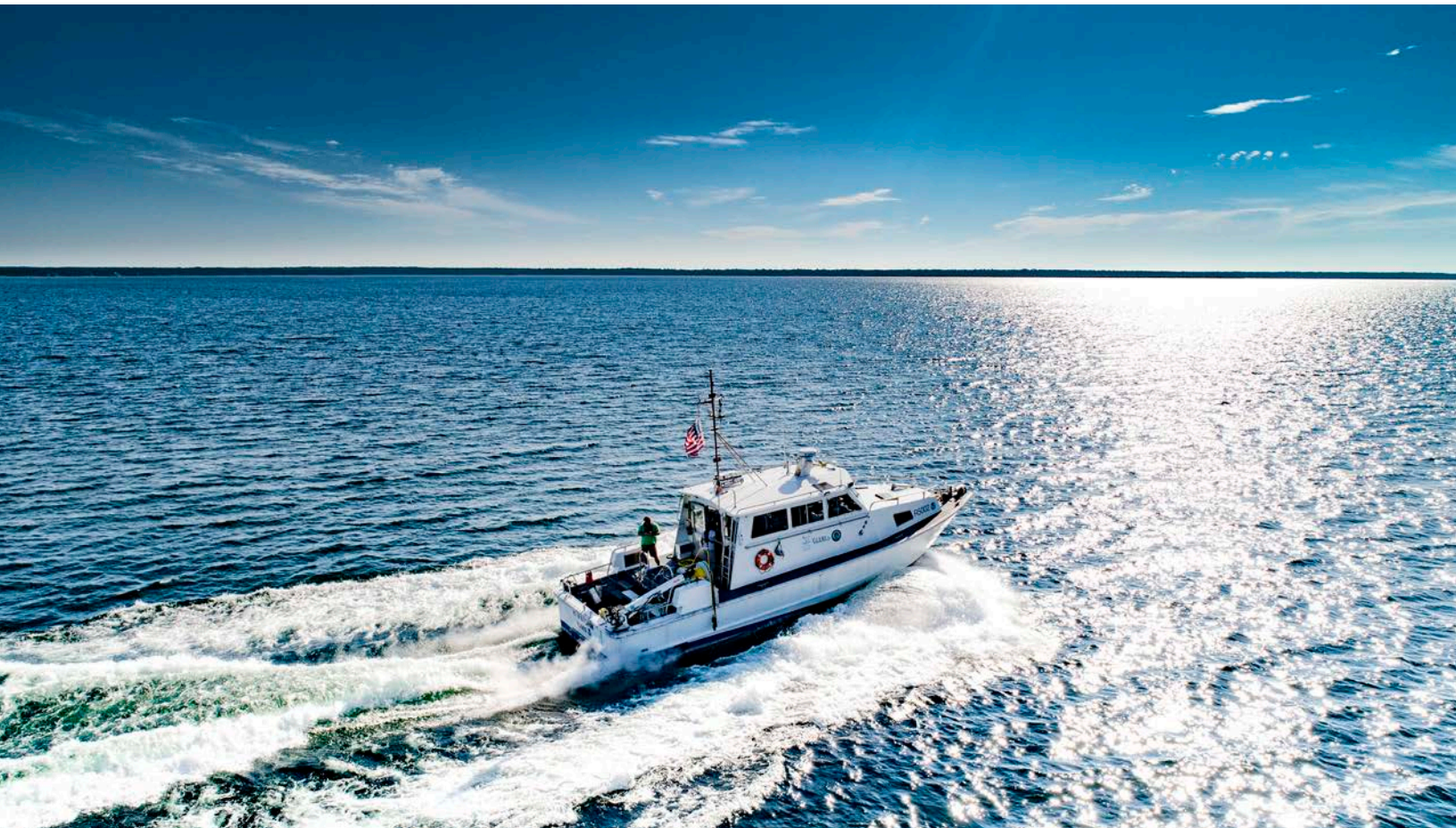
Michigan State University Press

Michigan Tech Research Institute

Superior Watershed Partnership and Land Trust

ThermoFisher Scientific

OFF TO THE RESEARCH SITE. Researchers heading out on Lake Huron to scope out some sinkholes. Photo by Great Lakes Outreach Media for NOAA Great Lakes Environmental Research Laboratory.



SPEAKERS

MARK FISHER was appointed chief executive officer of the Council of the Great Lakes Region in 2014. Mark is a seasoned professional with 13 years of experience in policy making, strategic business planning, corporate communications, stakeholder engagement, public advocacy, and issues management. He brings a wealth of experience in international affairs, with a focus on advancing the United States-Canada relationship in the areas of trade, security, natural resource development, and environmental protection. He also brings extensive experience providing advice to key decision makers and influencers, including the prime minister of Canada, provincial premiers and ministers, parliamentarians, and C-level executives from the private and nonprofit sectors.

MICHAEL KELLY is the director of the Conservation Fund's Great Lakes Office in Bay City, Michigan, and has served in that capacity since 2000. He is responsible for programs such as the Saginaw Bay Watershed Initiative Network as well as land acquisition and conservation financing around the Great Lakes region through the Conservation Fund's Great Lakes Revolving Loan Fund program. Prior to working for the Conservation Fund, Kelly served as city manager for the City of Auburn and executive director for the Saginaw Bay Watershed Council. He serves on a variety of boards, including the Environmental Protection Agency's Community Advisory Group for the Saginaw/Tittabawassee River Dioxin Contamination Remediation project, the Delta College Foundation (past-chair), and the Children's Zoo at Celebration Square (chair). Kelly is a former board member at the Bay Area Community Foundation. He has a master of business administration from Saginaw Valley State University and a bachelor of science in resource development from Michigan State University. Kelly grew up on the Kawkawlin River, a direct tributary of Saginaw Bay.

JANE KEON is secretary, founding member, and former chair of the Pine River Superfund Citizen Task Force, an EPA-sanctioned community advisory group monitoring the cleanup of three Superfund sites, a radioactive site, and other contaminated sites in St. Louis, Michigan. The Superfund sites were established in the 1980s following the departure of Velsicol Chemical Corp., which manufactured over 250 compounds, including DDT, the subject of Rachel Carson's book *Silent Spring*, and PBB, the cause of the 1970s PBB disaster, still the largest food-contamination event in U.S. history. In 2015 Keon published a book about the first 16 years of the task force. Its title, *Tombstone Town*, refers to a warning marker left at the former Velsicol Chemical site after the first cleanup in the 1980s. Instead of using an ordinary sign, government agencies erected a grave marker. Finally, in 2013, after working with the U.S. Department of Justice and a federal judge, the task force and city were allowed to move the tombstone to their historical museum. Keon also serves on the board of Healthy Pine River, a citizens group endeavoring to clean up a portion of the Pine River polluted with bacteria.

TUESDAY OCTOBER 8

6–8 p.m.
WELCOME GATHERING
Pierce Road Bar and Grill
2903 Pierce Rd, Saginaw

WEDNESDAY OCTOBER 9

7:30 a.m.–5 p.m.
Registration
2nd Floor Atrium

7:30–8:15 a.m.
Coffee and Networking
2nd Floor Atrium

8:15 a.m.
WELCOME REMARKS
Rhea Miller Recital Hall

David Karpovich, Saginaw Valley State University

Shannon Briggs, Great Lakes Beach Association

8:30–10:10 a.m.
CONCURRENT SESSIONS

Great Lakes Remote Sensing
Seminar Room E

Fish, Fisheries & Management (1)
Seminar Room F

Saginaw Bay
Seminar Room G

Contaminants
Seminar Room G

10 a.m.–5:40 p.m.
Exhibitors
2nd Floor Atrium

10:10–10:30 a.m.
Break

10:30–11:50 a.m.
CONCURRENT SESSIONS

Great Lakes Remote Sensing
Seminar Room E

Fish, Fisheries & Management (1)
Seminar Room F

Economics & Sustainability
Seminar Room G

Outreach & Communication
Seminar Room G

11:50 a.m.–12:50 p.m.
WELCOME & PLENARY
Rhea Miller Recital Hall

Native American Welcome

Welcome: Michael Twiss
IAGLR Past President, introduces the International Joint Commission

Plenary: Michael Kelly
Director, The Conservation Fund Great Lakes Office, *Saginaw Bay WIN - Building Support for Restoration in Michigan's Largest Watershed*

12:50–1:50 p.m.
Lunch
Marketplace at Doan

2–3:40 p.m.
Concurrent Sessions

Harmful Algal Blooms
Seminar Room E

Habitat & Species
Seminar Room E

Fish, Fisheries & Management (2)
Seminar Room F

Land To Lake Connections
Seminar Room G

3:40–4 p.m.
Break

4–5:40 p.m.
CONCURRENT SESSIONS

Habitat & Species
Seminar Room E

Coregonine Ecology & Management (1)
Seminar Room F

Great Lakes Beach Association (1)
Seminar Room G

5:45–6:45 p.m.
POSTER RECEPTION
Banquet Room

7–8:30 p.m.
PUBLIC GATHERING
Rhea Miller Recital Hall

Overview of state of Lake Huron, agency actions, and actions we all can take to protect the lake.

Guest Speaker: Jane Keon
Secretary and Founding Member, Pine River Superfund Citizen Task Force, *21 Years and Counting: A Toxic Town Fights Back*

SCHEDULE OVERVIEW

THURSDAY OCTOBER 10

7:30 a.m.–5 p.m.
Registration
2nd Floor Atrium

7:30–8:15 a.m.
Coffee and Networking
2nd Floor Atrium

7:30 a.m.–5:40 p.m.
Exhibitors
2nd Floor Atrium

8:15 a.m.
MORNING REMARKS
2nd Floor Atrium

Mark Fisher
CEO, Council of the Great Lakes Region

Ed Verhamme
Vice President, IAGLR

8:30–10:10 a.m.
CONCURRENT SESSIONS

General
Seminar Room E

Coregonine Ecology & Mgmnt (2)
Seminar Room F

Great Lakes Beach Association (2)
Seminar Room G

10:10–10:30 a.m.
Break

10:30–11:50 a.m.
CONCURRENT SESSIONS

Water Quality Monitoring Programs
Seminar Room E

2017 CSMI Reporting (1)
Seminar Room F

Great Lakes Beach Association (3)
Seminar Room G

11:50 a.m.–12:50 p.m.
PLENARY
Banquet Room

Discussion: A conversation on science policy with the Council of the Great Lakes Region and International Association for Great Lakes Research featuring Mark Fisher (pictured below), CEO, Council of the Great Lakes Region, with closing remarks by **U.S. Rep Dan Kildee** (D-Flint Township)

Update: Lake Huron Lakewide Management Plan, Elizabeth LaPlante, Regional Manager, Lake Superior, U.S. EPA (12:35-12:50)

12:50–1:50 p.m.
Lunch
Marketplace at Doan

2–4 p.m.
Concurrent Sessions

Nutrient & Lower Food Web
Seminar Room E

2017 CSMI Reporting (2)
Seminar Room F

Great Lakes Beach Association (4)
Seminar Room G

4–4:20 p.m.
Break

4:20–5:20 p.m.
CONCURRENT SESSIONS

Aquatic Invasive Species
Seminar Room E

2017 CSMI Reporting (3)
Seminar Room F

Great Lakes Beach Association (5)
Seminar Room G

Intellectual Property
Presentations and posters are the property of the presenter. We do not encourage any recording of oral or poster presentations, and we urge you to respect intellectual property by seeking permission of the presenter and by providing due credit if you wish to record images. We encourage the sharing of science on social media, and many attendees post items of interest during the conference. To share the excellent work of people who have opted in, use the hashtag #SOLH19.

If you do NOT want your presentation shared on social media, 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 handles to facilitate attributing your work.

5:40–6:40 p.m.
CSMI SUMMARY SESSION
Banquet Room
Pizza and cash bar

6:45–8:45 p.m.
MOVIE NIGHT
Banquet Room
Making Waves: Battle for the Great Lakes

Join us for a screening of this 2-hour documentary about the effects of aquatic invasive species in the Great Lakes and efforts to control and prevent them. (see more below)

FRIDAY OCTOBER 11

WORKSHOPS

9–10 a.m.
Beach Sanitary Surveys
Science East Building, Room 203
Julie Kinzelman, City of Racine, WI

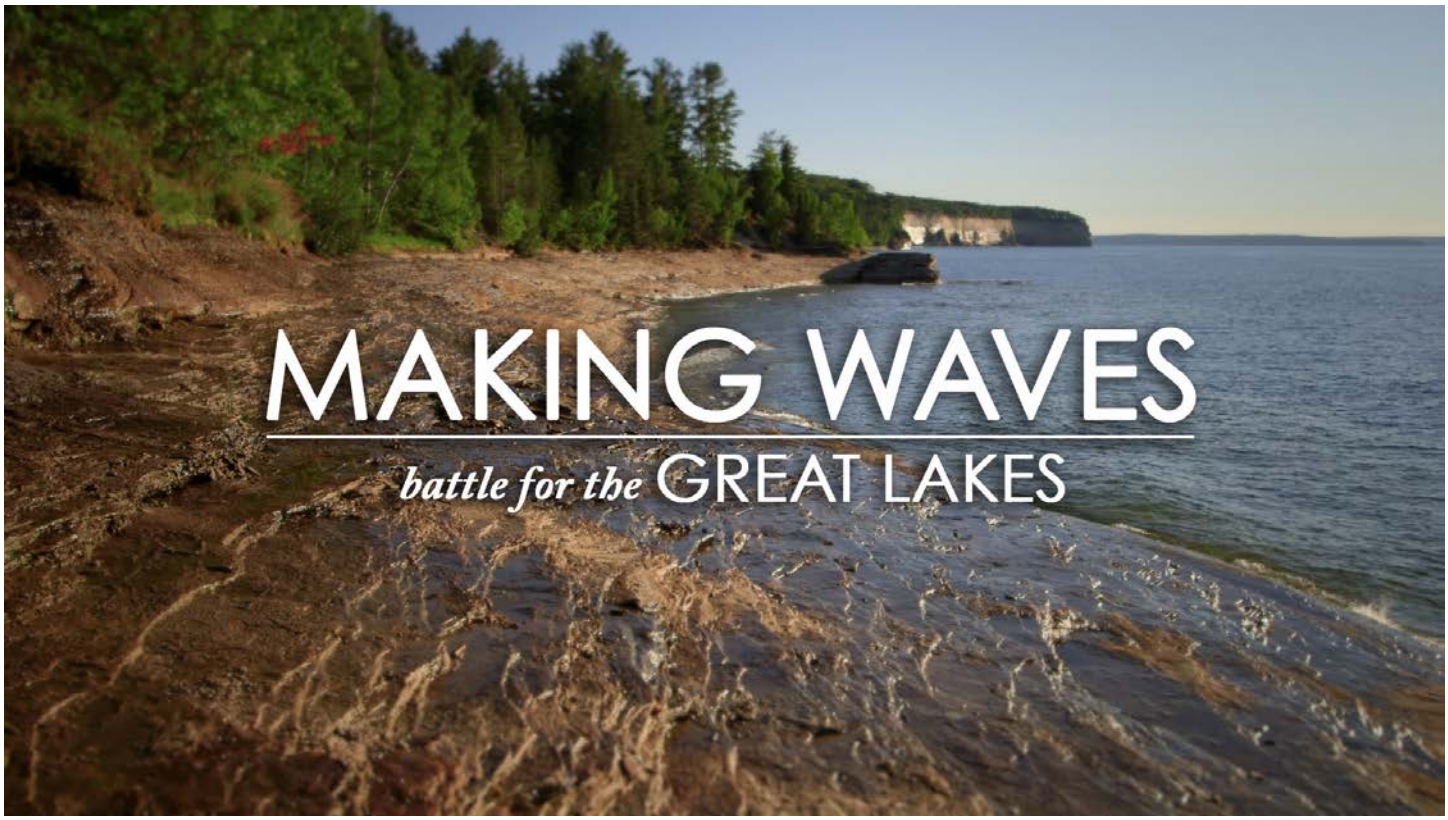
10–11 a.m.
qPCR Laboratory Tour and Great Lakes Source Tracking
Science East Building, Room 203
Tami Sivy, SVSU; Shannon Briggs, GLBA

FIELD TRIPS
All field trips leave from SVSU at 11 a.m.

11 a.m.–1 p.m.
Upper Saginaw River tour on the Cardinal II boat
David Karpovich, SVSU

11 a.m.–1 p.m.
SVSU Mobile Research Lab and Bay City State Park beach tour
James McEvoy, SVSU

11 a.m.–1 p.m.
Bay County farm conservation tour
Martin Arford, SVSU



Making Waves: Battle for the Great Lakes takes viewers below the surface of the world's largest freshwater ecosystem and into the middle of a complex war for survival. Narrated by Bill Kurtis, *Making Waves* joins researchers on the front lines as they combat invasive species and work to restore native species in an effort to prevent a biological takeover of the Great Lakes. Join us Thursday, 6:45–8:45 p.m. for movie night in the Banquet Room.

WEDNESDAY, OCTOBER 9–MORNING SESSIONS

	Seminar Room E	Seminar Room F	Seminar Room G
	Great Lakes Remote Sensing	**Fish, Fisheries & Management (1)**	**Saginaw Bay**
8:30	J. Klassen Lake Huron basin remote sensing: A Great Lakes Restoration Initiative collaboration	S. C. Riley Status and trends of the Lake Huron offshore demersal fish community, 1976-2018	C. Stow Saginaw Bay nutrients: Not that much has changed recently
8:50	K. Bosse Seasonal patterns of Saginaw Bay inherent optical properties with implications for remote sensing	N. Godby Status of introduced salmonines in Lake Huron	A. Gatch Custodial maintenance of Lake Huron's natural spawning reefs
9:10	N. Luymes Object-based approaches to map vernal pools in eastern Georgian Bay, Ontario	T.A. Cwalinski Lake Huron Atlantic salmon management program update	**Contaminants** D. Ager Overview of USEPA Great Lakes National Program Office Contaminant monitoring programs–Lake Huron focus
9:30	M. Miller Mapping hydrological connections on Lake Huron to identify coastal wetlands	M. Zink Evaluating the success of Michigan DNR's Lake Huron Atlantic salmon stocking program	M. Ripley Fish contaminant advice for Great Lakes Native American communities using mobile technology
9:50	M. Battaglia Monitoring Lake Huron coastal wetlands using synthetic aperture radar	T.O. Brenden A combined lakes Michigan and Huron Statistical catch-at-age model for chinook salmon	
10:10	Break		
10:30	A.F. Poley Improving land cover change detection techniques using Google Earth Engine	S.M. Nowicki Sea Lamprey control in Lake Huron	**Economics & Sustainability** J. Empson Laporte Looking at environmental solutions using economic lenses: LEAN principles to implement change and manage risk
10:50	A. Grimm A multi-disciplinary approach to Phragmites monitoring and management in Saginaw Bay	E.S. Dunlop Metabolic and growth response of lake trout strains to warmer temperatures	S. Naylor Ecologically sustainable net pen rainbow trout aquaculture in Lake Huron
11:10	C.N. Brooks Quantifying effects of invasive Phragmites and Eurasian watermilfoil management with drones	S. Koproski Status of Lake Trout in Lake Huron 2018	**Outreach & Communication** L.M. Fry Lake Huron water levels: Historical context, current conditions, and related U.S. Army Corps of Engineers products
11:30	L. Spaete The use of remote sensing to manage Minnesota state lands	J.X. He Dynamics of lake trout production in the main basin of Lake Huron	K. Salazar Tipping Point Planner: Addressing Great Lakes nutrient and habitat issues through collaborative planning
11:50	Plenary featuring **Mike Kelly**, The Conservation Fund Great Lakes Office (Rhea Miller Recital Hall)		
12:50	Lunch (Marketplace at Doan)		

WEDNESDAY, OCTOBER 9–AFTERNOON SESSIONS

	Seminar Room E	Seminar Room F	Seminar Room G
	Harmful Algal Blooms	**Fish, Fisheries & Management (2)**	**Land To Lake Connections**
2:00	D. Gill Assessing community need for a Saginaw Bay harmful algal bloom forecast	E. Adams Fish eggs and larval drift near the St. Marys River Rapids, MI	R.A. Williams Mapping the historic coastlines of Lake Huron and the Great Lakes Region
2:20	M. Rowe Development of a harmful algal bloom transport forecast for Saginaw Bay, Lake Huron	J.X. He Stock assessment of lake whitefish in Michigan waters of southern Lake Huron	S. Johnson Forests for lakes: Science, restoration, and lessons learned
2:40	**Habitat & Species** S. Parker Lake Huron protected areas	D.J. Stanton DNA fingerprinting of walleye *(Sander vitreum)* from Saginaw Bay: Genetic effects of stocking	R. Shaffer Conservation practices (i.e., BMPs) to reduce nonpoint source pollution in the Lake Huron Basin
3:00	A. Ania Buhl Dam area restoration: A partnership success story	D.G. Fielder Dynamics of the recovered Saginaw Bay walleye population	B. Wickerham Comparison of conservation cost share approaches in Saginaw Bay watershed: Pay for practice vs. pay for performance
3:20	M.J. Gass Reef restoration in Saginaw Bay: Improving habitat through partnerships	J.R. Bence Commentary on fish community objectives for Lake Huron	C. Rachol Assessing agricultural best management practices at the edge-of-field scale in Saginaw River basin
3:40	Break		
4:00	A. Moerke Habitat and fish responses to restoration of flow in the Little Rapids, St. Marys River AOC	**Coregonine Ecology & Mgmnt (1)** E.S. Dunlop Dynamics and sustainability of lake whitefish in Lake Huron	**Great Lakes Beach Association (1)** C.M. Goodman Tribute to Partners in the Great Lakes Beach Association
4:20	P. Chow-Fraser Climate-associated changes in the structure and function of coastal habitats in Georgian Bay	C.L. Davis Overview of whitefish status and management in Ontario waters of Lake Huron	T. Rule Western Upper Peninsula flood emergency response
4:40	D.R. Pearsall Blue Accounting: Tracking investments and progress on key Great Lakes issues, with a focus on coastal wetlands	A.T. Duncan The ecological knowledge of the Saugeen Ojibway Nation regarding the status of ciscoes in Lake Huron	(continued)
5:00	J.P. Ludwig Stable isotopes confirm huge diet differences in cormorants across the Great Lakes.	D. Wells Spatial variation in lake whitefish larvae growth and density in Saginaw Bay and Thunder Bay, Lake Huron	(continued)
5:20	M. Gilbertson Colonial water bird numbers, clutch and egg size reflect ecological regime changes in L. Huron colonies	S. Pothoven Early life feeding ecology of lake whitefish in Lake Huron	(continued)
5:45	Poster reception (Banquet Room)		
7:00	Public meeting featuring **Jane Keon** (Rhea Miller Recital Hall)		

THURSDAY, OCTOBER 10–MORNING SESSIONS

	Seminar Room E	Seminar Room F	Seminar Room G
	General	**Coregonine Ecology & Mgmnt (2)**	**Great Lakes Beach Association (2)**
8:30	S.C. Riley The state of Lake Huron in 2017	R.L. DeBruyne St. Marys River Rapids area provides valuable habitat for coregonine reproduction	S.L. Belontz The deposition and accumulation of microplastics in benthic sediments of Lake Huron
8:50	A. Ertel Lake Huron's binational partnership for community stormwater readiness	R.L. Eshenroder Status of cisco in Lake Huron	C. Hakala Talking poop with the public: Examples of healthy swimming outreach
9:10	L. Greer Lake Huron National Shoreline Management Study	T.P. O'Brien Spatial distribution and habitat use of Lake Huron ciscoes	T. Edge Sewage cross-connections to stormwater outfalls that impact recreational waters in Lake Ontario
9:30	(continued)	W. Stott Genetic Analysis of cisco *(Coregonus artedi)* population structure in Lake Huron	D. Beauchamp Implementing the new federal CSO public notification rule
9:50	H. Siersma Changes in sediment texture may inhibit the recovery of *Hexagenia* spp. in Saginaw Bay, Lake Huron	C. Olds Cisco re-introduction efforts in Lake Huron	Panel Discussion Q&A session will cover public communication strategies and health risks related to combined sewer overflow (CSO) discharges.
10:10	Break		
	Water Quality Monitoring Programs	**2017 CSMI Reporting (1)**	**Great Lakes Beach Association (3)**
10:30	K. Cissell Incorporating students and STEM teachers in a multi-year Saginaw Bay watershed monitoring program	S. Shivarudrappa Current state and long-term trends of Lake Huron benthos	C. Robinson The contribution of dirty sand to FIB water quality exceedances at two adjacent freshwater beaches
10:50	N. Manning The Heidelberg Tributary Loading Program: Lessons learned after 44 years	T. Angradi Towards improved benthic monitoring of the Great Lakes using underwater video	S. Rakhimbekova The role of groundwater-lake interactions on the delivery of pollutants to nearshore waters of the Great Lakes
11:10	D.R. Pearsall Pursuing a coordinated tributary and nearshore monitoring initiative for the Saginaw Bay watershed	S. Bayba Effects of *Dreissena* on benthos of Lake Huron	L.R. Fogarty Distinguishing onshore and offshore sources of *E. coli* to beaches
11:30		A. Elgin Regional, seasonal, and depth differences in quagga mussel growth	Overview of Student Poster Competition
11:50	A science policy conversation with the Council of the Great Lakes Region and International Association for Great Lakes Research featuring **Mark Fisher,** CEO of CGLR; closing remarks by **U.S. Rep. Dan Kildee** (Banquet Room)		
12:50	Lunch (Marketplace at Doan)		

THURSDAY, OCTOBER 10–AFTERNOON SESSIONS

	Seminar Room E	Seminar Room F	Seminar Room G
	Nutrient & Lower Food Web	**2017 CSMI Reporting (2)**	**Great Lakes Beach Association (4)**
2:00	J. Pauer Lake Huron nutrients: We collected the lake data, now we need loadings and model results	S.E. Daniel Great Lakes DNA Barcode Reference Library: Mollusca, Annelida, and minor phyla	Members of the GLBA Beach 101
2:20	K.A. Bockwoldt Long-term and spatial trends in nutrients and seston stoichiometry in Lake Huron	D. Wells Estimating *Mysis* density and catch avoidance using the MOCNESS in Thunder Bay, Lake Huron	J. Kinzelman Overview of beach sanitary surveys
2:40	J. Watkins Status of lower trophic levels in Lake Huron	P. Glyshaw Examining fine-scale zooplankton distribution in Lake Huron using a LOPC and traditional net tows	R. Haugland Development of a recreational beach notification value for an *E. coli* qPCR method for the State of Michigan
3:00	M.B. Nevers Great Lakes *Cladophora* assessment: Conditions in Lake Huron	D.B. Bunnell Spatial variation in zooplankton productivity and rainbow smelt energetic condition	N. Isaacs Using rapid molecular based assays to monitor water quality at select Berrien County beaches
3:20	F. McCarthy Anthropogenic impact over the last millennium: Evidence from algal and zooplankton microfossils	B. Crimmins Lake Huron CSMI contaminants and food web markers: Great Lakes fish monitoring and surveillance program	J. Rose The IJC Centennial Study: Microbial source tracking across the Great Lakes
3:40	(continued)	A. Oppliger Larval fish assemblages and species dispersal in Lake Huron during 2017	C. Hakala Announcing dates/location of the 2020 Great Lakes Beach Association
4:00	Break		
	Aquatic Invasive Species	**2017 CSMI Reporting (3)**	**Great Lakes Beach Association (5)**
4:20	G. Wright Update of an early detection and monitoring program for non-native fishes in Lake Huron	M. Cubbage Quantifying spatio-temporal variation in environmental conditions for larval fish in Lake Huron	Members of the GLBA Rapid Methods for Enterococci, *E. coli*, and others (swimmers itch)?
4:40	B.C. Cahill Towards an adaptive management framework for European frog-bit (*Hydrocharis morsus-ranae* L.) management	L. Eaton Larval fish dynamics from the 2017 Lake Huron CSMI	Human Markers: HF183, HumM2, b. theta
5:00	J.V. Marcaccio Assessing the impact of grass carp on the ecology of coastal wetlands of eastern and northern Georgian Bay	H.A. Vanderploeg Organization of the pelagic food web in Saginaw Bay, Thunder Bay, and offshore Lake Huron	Livestock-Mammal Markers: pig, cow, bovine, dog, horse, others?
5:20		K. Kierczynski Spatial patterns and seasonal trends of Lake Huron predator diets	Bird Markers: goose, gull, duck?
5:40	**CSMI Summary Session** with pizza and cash bar (Banquet Room)		
6:45	**Movie Night**: Documentary screening of *Making Waves: Battle for the Great Lakes* (Banquet Room)		

POSTERS

The poster reception takes place Wednesday, 5:45-6:45 p.m., in the Banquet Room.

1. An ongoing review of microbial source tracking (MST) markers for future use in Michigan recreational waters and the Great Lakes region
   Sharon Carpenter, Michigan State University

2. Monitoring technologies in the Great Lakes
   Greg Cutrell, LimnoTech

3. Use of EPA Method C for same-day quantification of *E. coli* in the Saginaw Bay Watershed
   Marc Dean, Saginaw Valley State University

4. Designing ecobuffers with agricultural producers in the Saginaw Bay
   Kristin Floress, U.S. Forest Service Northern Research Station

5. Developmental differences in larval coregonines
   Kaley Genther, U.S. Fish and Wildlife Service

6. Blue Accounting: A new way to visualize coastal wetlands investments in the Great Lakes basin
   Stephanie Hickel, The Nature Conservancy, Conservation Science

7. Using survival analysis methods to analyze censored *E. coli* concentrations in recreational water
   Molly Lane, Grand Valley State University - Annis Water Resources Institute

8. Emerging and legacy pesticide contamination in the Waishkey Bay
   Alyssa McGlinch, Bay Mills Community College

9. *Cladophora* in Lake Huron: Modeling growth and transport
   Saeed Memari, Michigan State University

10. A study on sediment core of Pulicat Lake, southeast coast of India: Implications for climate change
    Jayaraju Nadimikeri, Yogi Vemana University, Kadapa, India

11. Microplastics within the Waishkey Bay, Lake Huron watershed
    Daniel Napoletano, Bay Mills Community College

12. Relationship between *E. coli* concentrations and beach physical factors under elevated water conditions at Door County, WI
    Pooja Patel, University of Wisconsin Oshkosh

13. Investigation of gel-forming properties of carbohydrate derivatives for the removal of phosphates from water
    Kathryn Richmond, Saginaw Valley State University

14. Assessing the effect of tree species and fire-fighting strategy on burn severity at the Parry Sound 33 Fire, Canada
    Prabha Rupasinghe, McMaster University

15. Growth of native and invasive *Phragmites australi*s under contrasting nutrient regimes and a longer growing season
    McKenzie Scheffler, Saginaw Valley State University

POSTERS

16. Round goby distribution and abundance in Lake Huron: a comparison of eDNA technology and trawling
Ashley Spoljaric, Michigan State University

17. Tracers for identifying septic system inputs to surface waters
Archana Tamang, The University of Western Ontario, Civil and Environmental Engineering

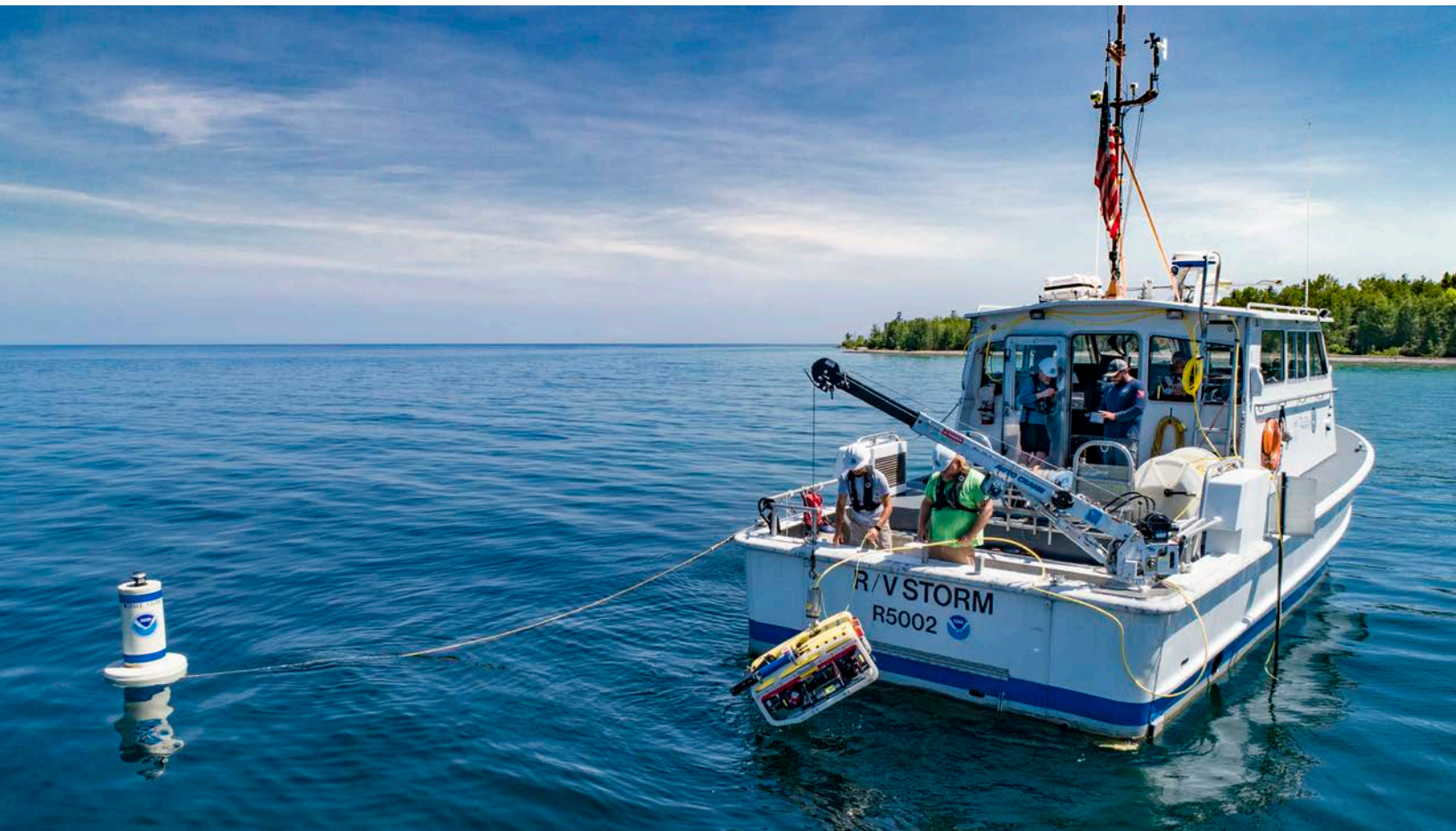
18. Quantification of *Escherichia coli* levels in Billings Lake, Wexford County, Michigan by qPCR
Stacy Thurber, Ferris State University

19. Use of ddPCR technology in microbial source tracking of fecal contamination of Saginaw Bay
Trenton Vogel, Saginaw Valley State University

20. Assessing the impact of microplastics on microzooplankton: A model study
Amanda Weiss, Saginaw Valley State University

21. Case studies that explore actions for communities to address beach contamination
Gloria Zurhorst, Michigan State University

EXPLORING SINKHOLES. Researchers from NOAA GLERL deploy instruments at Middle Island Sinkhole in Lake Huron in an effort to estimate groundwater flow rate. Photo by Great Lakes Outreach Media for NOAA Great Lakes Environmental Research Laboratory.



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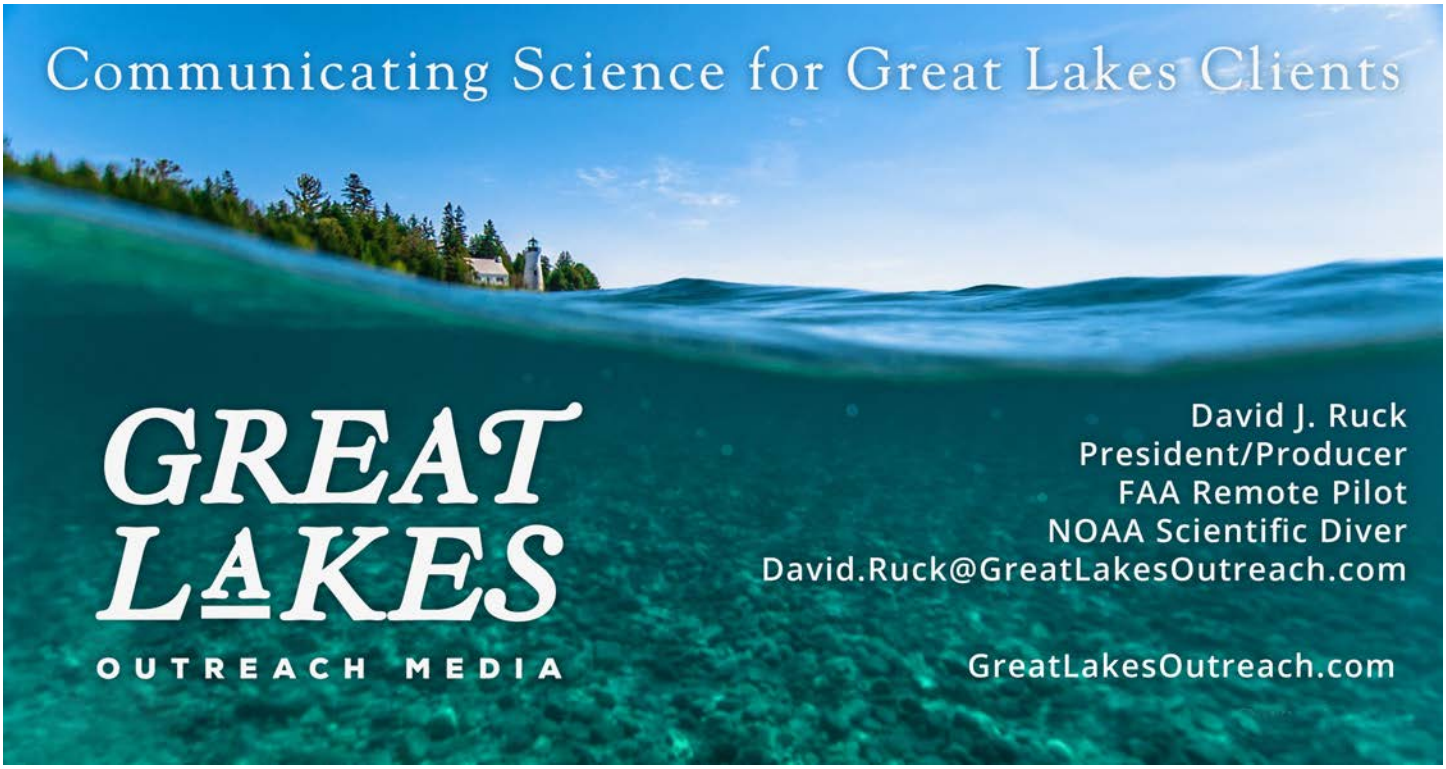
Communicating Science for Great Lakes Clients
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OUTREACH MEDIA
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SCHEDULE AT A GLANCE

	Event	Time	Location
TUE	Informal Welcome Gathering	6–8 p.m.	Pierce Road Bar and Grill
WED	Registration	7:30 a.m.–5 p.m.	2nd Floor Atrium
	Coffee and Networking	7:30–8:15 a.m.	2nd Floor Atrium
	Welcome Remarks	8:15 a.m.	Rhea Miller Recital Hall
	Concurrent Sessions	8:30–10:10 a.m.	Seminar Rooms E, F, G
	Exhibits	10 a.m.–5:40 p.m.	2nd Floor Atrium
	Concurrent Sessions	10:30–11:50 a.m.	Seminar Rooms E, F, G
	Welcome & Plenary	11:50 a.m.–12:50 p.m	Rhea Miller Recital Hall
	Lunch	12:50–1:50 p.m.	Marketplace at Doan
	Concurrent Sessions	2–3:40 p.m. & 4–5:40 p.m.	Seminar Rooms E, F, G
	Poster Reception	5:45–6:45 p.m.	Banquet Room
	Public Gathering	7–8:30 p.m.	Rhea Miller Recital Hall
THU	Registration	7:30 a.m.–5:40 p.m.	2nd Floor Atrium
	Coffee and Networking	7:30–8:15 a.m.	2nd Floor Atrium
	Exhibits	7:30 a.m.–5:40 p.m.	2nd Floor Atrium
	Morning Remarks	8:15 a.m.	2nd Floor Atrium
	Concurrent Sessions	8:30–10:10 a.m. & 10:30–11:50 a.m.	Seminar Rooms E, F, G Seminar Rooms E, F, G
	Plenary	11:50 a.m.–12:50 p.m	Banquet Room
	Lunch	12:50–1:50 p.m.	Marketplace at Doan
	Concurrent Sessions	2–4 p.m. & 4:20–5:40 p.m.	Seminar Rooms E, F, G
	CSMI Summary Session	5:40–6:40 p.m.	Banquet Room
	Movie Night	6:45–8:45 p.m.	Banquet Room
FRI	Workshop: Beach Sanitary Surveys	9–10 a.m.	Science East Building, Room 203
	Workshop: qPCR Laboratory Tour and Great Lakes Source Tracking	10–11 a.m.	Science East Building, Room 203
	Field Trips • Upper Saginaw River tour on the Cardinal II boat • SVSU Mobile Research Lab and Bay City State Park beach tour • Bay County farm conservation tour	11 a.m.–1 p.m.	All leave from SVSU at 11 a.m.