

52nd Annual Conference on Great Lakes Research
International Association for Great Lakes Research

Program Book



BRIDGING

Ecosystems and
Environmental Health across
our **GREAT LAKES**

Monday May 18 - Friday May 22 2009
University of Toledo - Toledo OHIO



The Front Cover Logo

The front cover logo symbolizes our IAGLR09 conference theme, "Bridging Ecosystems and Environmental Health Across Our Great Lakes". Our conference focus is to bridge an understanding of the linkages among Great Lakes ecosystems, and environmental and human health. In summer 2006, the University of Toledo merged with the former Medical University of Ohio and our newly combined research and education collaborations helped to inspire the theme as we together laid the groundwork for the conference.



The conference is led by the University of Toledo's Lake Erie Center, an interdisciplinary research and education center dedicated to solving environmental problems at the land-water interface and bay-lake exchanges in the Great Lakes - the world's largest freshwater ecosystem. The Lake Erie Center is an integral environmental resource of the College of Arts and Sciences at

The University of Toledo and is located in the northwestern corner of Ohio's Maumee Bay State Park. Research at the Lake Erie Center explores the linkages among land use, aquatic resources, water quality, and human health - using the Maumee River and Bay and its key influence on the western Lake Erie Basin as a model. You are welcome to visit the LEC on the Friday afternoon field trip or drop by anytime!

The local conference committee is a collaboration of faculty, graduate students, and staff from the University of Toledo's Departments of Biochemistry and Cancer Biology, Civil Engineering, Economics, Environmental Sciences, Geography and Planning, Public Health and Homeland Security, the Law School, and the Lake Erie Center. Local committee members from other institutions include Bowling Green State University, NOAA's Great Lakes Environmental Research Laboratory, Heidelberg University, the Ohio Division of Wildlife, and the US Geological Survey.



www.lakeerie.utoledo.edu



The logo features a stylized version of the new Veteran's Glass City Skyway Bridge across the Maumee River in Toledo on I-280. The Veterans Glass City Skyway is the single largest project ever attempted by Ohio DOT, and was dedicated in June 2007. It is not only a critical Interstate highway route in Toledo, but it is also a signature landmark bridge. At 400 feet tall, it is the second tallest structure in Toledo.

The bridge design is a single pylon tower centered in the river, with two deck spans, one on each side of the tower. That results in two parallel bridge spans held up by a single set of cables, with each span the same length on each side of the tower. The cable arrangement is unique in that the cables do not attach to the main tower. Rather, the cables loop through the towers, and attach only at the bridge deck. Several smaller cable stayed bridges are now using this technique, but this is the pioneering structure to attempt such a design. To show off the bridge's signature status, it is constructed with glass panels that run the full height of the center tower. These panels contain thousands of LED lights. The light panels are used to give nighttime light shows.

The MODIS satellite images are courtesy of NOAA GLERL and are found at <http://coastwatch.glerl.noaa.gov/modis/>. This year's Great Lakes field efforts are centered on the International Field Year on Lake Erie (IFYLE).

The cover design was the joint effort of Rajorshi Ghosh of Studio Trigon and University of Toledo Lake Erie Center Ph.D. candidate Osvaldo J. Sepulveda-Villet (aka "Jhonatan").



PROGRAM

International Association for Great Lakes Research

52nd Annual Conference

***Bridging Ecosystems and Environmental Health
Across Our Great Lakes***

May 18-22, 2009

The University of Toledo
Toledo, Ohio



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Welcome Conference Exhibitors!

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Aqua Sentinel
PO Box 36167
Cincinnati, OH 45236-0167
www.bbe-moldaenke.com

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Great Lakes Fishery Commission*^**

2100 Commonwealth Blvd.,
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Ann Arbor, MI 48105
www.glfc.org

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hinklind@comcast.net

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International Joint Commission*^

Great Lakes Regional Office
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NOAA in the Great Lakes

4840 South State Road
Ann Arbor MI 48108
www.glerl.noaa.gov/res/centers/humanhealth

U.S. Dept. of Commerce, NOAA*^

Great Lakes Environmental
Research Lab.
4840 South State Road
Ann Arbor MI 48108
www.glerl.noaa.gov

Exhibits will be open daily.

Please make the exhibitors feel welcome by visiting their displays!

A special thank you is extended to the Exhibitors as indicated:

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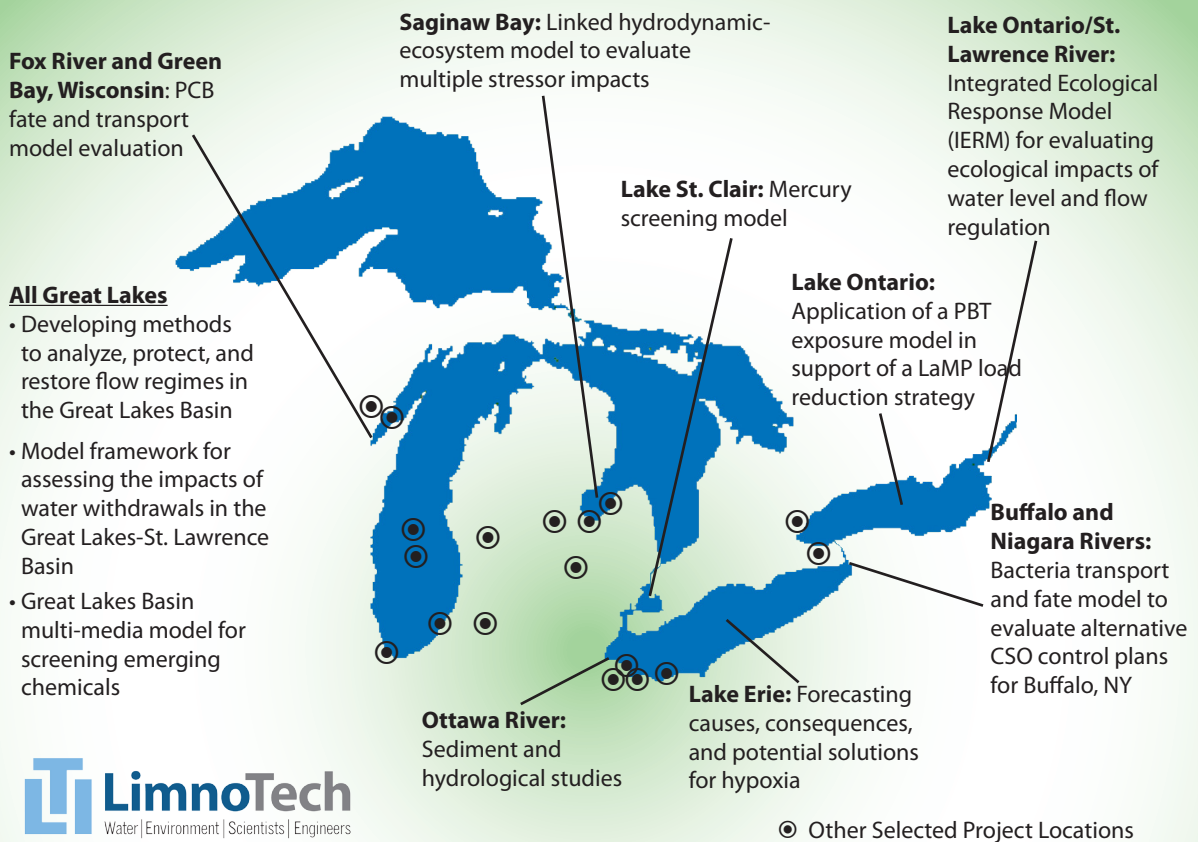
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¹ Norman S. Baldwin Fishery Science Scholarship

² IAGLR-Hydrolab Best Student Paper and Poster Presentation Award Co-Sponsor

LimnoTech congratulates IAGLR on its long history of protecting and sustaining the Great Lakes through the promotion and communication of large-lakes science and research. We proudly support efforts to understand stressors and solutions for better decision-making on Great Lakes issues. A few of our projects are illustrated below.



Look for *LimnoTech* at these IAGLR 2009 events:

Development and Application of a Multi-media Screening Model for Chemicals of Emerging Concern in the Great Lakes Basin (GLMOD)

Todd M. Redder, P.E., Presenter
Tuesday, May 19, 4:10 pm, Room 2591

Session 6: Nearshore and Offshore Changes in Great Lakes Food Webs: Mechanisms and Forecasting

Joseph V. DePinto, Ph.D., Co-Chair
Wednesday, May 20, 1:30-3:00 pm, Room 2591

Application and Comparison of 1D and 3D Lower Food Web Models for Lake Erie

Daniel K. Rucinski, Presenter
Wednesday, May 20, 1:50 pm, Room 2520

Coupling the Great Lakes Cladophora Model (GLCM) with a Whole Lake Advanced Eutrophication Model (AEM)

Joseph V. DePinto, Ph.D., Presenter
Wednesday, May 20, 3:50 pm, Room 2591

Session 8: Saginaw Bay: The Continuing Impact of Multiple Ecosystem Stressors

Joseph V. DePinto, Ph.D., Co-Chair
Thursday, May 21, 8:30-10:50 am, Room 2592

Development of a Linked Fine-Scale Hydrodynamic and Ecosystem Model for Assessing the Impact of Multiple Stressors in Saginaw Bay, Lake Huron

Edward M. Verhamme, Presenter
Thursday, May 21, 9:30 am, Room 2592

Visit us at: www.limno.com

Conference Overview & Special Events

Monday, May 18

- 9 a.m. - 4 p.m. IAGLR Board Meeting, Student Union, Room 3016 (St. Lawrence River), 3rd floor
- 10 a.m. - 9 p.m. **PowerPoint Presentation Drop-off**, Student Union, Room 2562 (A/V Prep), 2nd floor
- 3 - 5:30 p.m. **NOAA Great Lakes Public Forum: Setting the Course for the Next 25 Years**, Student Union 2520, Ingman Room (RSVP to Jennifer.Day@NOAA.gov or 734-741-2266)
- 6 - 9 p.m. **Conference Registration**, Student Union, outside Room 2561, 2nd floor
Welcome Reception, Student Union, 2582-4 Atrium Lounge Area, 2nd floor
- 9 p.m. **Planetarium Show**, "The Star Gazer", Ritter Planetarium, 3-min. walk from Student Union
- 9 - 11 p.m. **Graduate Student Only Reception**, Student Union Rocket Grille, 1st floor
- 10 - 11 p.m. **Observatory at Planetarium** open for stargazing (with astronomy staff, weather permitting)

Tuesday, May 19

- 7:30 a.m. - 9 a.m. **JGLR Editor Meeting** (invitation only), Student Union, Room 3016 (St. Lawrence River), 3rd floor
- 8 a.m. - 5 p.m. **Conference Registration**, Student Union, outside Room 2561, 2nd floor
Poster Setup & Exhibitors Setup, Student Union: Posters in 3rd floor ballroom; Exhibitors in 2nd floor lounge (Posters must be up by 2 p.m. Tuesday and are encouraged to stay up until 5 p.m. on Thursday)
- 8 a.m. - 6 p.m. **PowerPoint Presentation Drop-off**, Student Union, Room 2562 (A/V Prep), 2nd floor
- 8 - 9 a.m. Buses from Hotels and Dorms to Student Union (see page 19 for bus details)
Coffee and Continental Breakfast, Student Union South Lounge
- 9 - 10:30 a.m. **Welcome and Plenary**, Doermann Theatre, University Hall
Dr. Howard Frumkin, Director, National Center for Environmental Health, Agency for Toxic Substances and Disease Registry
- 10:30 - 10:50 a.m. Coffee Break, Student Union, three locations
- 10:50 a.m. - 12:10 p.m. **Scientific Sessions**, Student Union

Conference Overview & Special Events

Tuesday, May 19, continued

- 12:10 – 1:10 p.m. Lunch – on your own (Student Union vendors, Phoenicia, cafeteria, pre-paid at International House – see page 27 for suggestions)
Graduate Student box lunch, Ingman Room, SU 2520 (lunches limited to first 50 people)
JGLR Editor luncheon tribute to R. Stephen Schneider (invitation only), Student Union, Room 3016 (St. Lawrence River), 3rd floor
COSEE Teachers lunch (invitation only) Student Union, Room 2579
- 1:10 - 3:10 p.m. **Scientific Sessions**, Student Union
- 3:10 - 3:30 p.m. Coffee Break, Student Union, three locations
- 3:30 - 5:50 p.m. **Scientific Sessions**, Student Union
- 5 - 6:00 p.m. Buses to Hotels and Dorms
- 6 - 8 p.m. **Poster Session & Exhibitor's Reception** (Includes High School Student and Teacher Poster Session)
Student Union Auditorium/Ballroom, 3rd floor
- 8 p.m. Buses depart to IAGLR '09 Hockey Game
- 8:30 - 10 p.m. **IAGLR '09 Hockey Game**, Tam O'Shanter, Sylvania, Ohio
- 10:30 - 11 p.m. Buses depart from IAGLR '09 Hockey Game

Wednesday, May 20

- 7:45 a.m. **UT Ottawa River Rain Garden Tour**. Meet in front of International House main entrance.
- 8 a.m. – 5 p.m. **Conference Registration**, Student Union, outside Room 2561, 2nd floor
- 8 a.m. - 6 p.m. **PowerPoint Presentation Drop-off**, Student Union, Room 2562 (A/V Prep), 2nd floor
- 8 - 9 a.m. Buses from Hotels and Dorms to Student Union
- 8 - 8:30 a.m. Coffee and Continental Breakfast, Student Union, 2nd floor, South Lounge
- 8:30 a.m. - 10:10 a.m. **Scientific Sessions**, Student Union
- 10:10 - 10:30 a.m. Coffee Break, Student Union, three locations
- 10:30 a.m. - 12:10 p.m. **Scientific Sessions**, Student Union

Conference Overview & Special Events

Wednesday, May 20, continued

- 12:10 - 1:30 p.m. **IAGLR Business Lunch**, Student Union Auditorium/Ballroom, 3rd floor
- 1:30 - 3:30 p.m. **Scientific Sessions**, Student Union
- 3:30 - 3:50 p.m. Coffee Break, Student Union, three locations
- 3:50 - 5:30 p.m. **Scientific Sessions**, Student Union
- 5 - 6:00 p.m. Buses to Hotels and Dorms
- 6:30 p.m. Buses depart for Banquet from Meetings, Hotels and Dorms
- 7 - 9:30 p.m. **IAGLR Banquet**, Pinnacle in Maumee, Ohio, near the Maumee River
- 9:30 p.m. Buses depart to Dorms, Hotels, Campus Lots

Thursday, May 21

- 7 - 8:15 a.m. **Birdwatch/Nature Walk to Wildwood MetroPark**. Meet at Ottawa West Dorms.
- 8 a.m. – 5 p.m. **Conference Registration**, Student Union, outside Room 2561, 2nd floor
- 8 a.m. - 6 p.m. **PowerPoint Presentation Drop-off**, Student Union, Room 2562 (A/V Prep), 2nd floor
- 8 - 9 a.m. Buses from Hotels and Dorms to Student Union
- 8 - 8:30 a.m. Coffee and Continental Breakfast, Student Union, 2nd floor South Lounge
- 8:30 a.m. - 10:50 a.m. **Scientific Sessions**, Student Union
- 10:30 - 11 a.m. Coffee Break, Student Union, three locations
- 11 a.m. – Noon **Plenary**, Doermann Theatre, University Hall
“Climate, Oceans, Infectious Diseases, and Human Health: The Cholera Paradigm”
Dr. Rita Colwell, Chair of Canon US Life Sciences, Inc. and Distinguished University Professor,
University of Maryland at College Park and at Johns Hopkins University Bloomberg School of
Public Health

Conference Overview & Special Events

Thursday, May 21, continued

Noon – 1 p.m.	Lunch – on your own (Student Union vendors, Phoenicia, cafeteria, pre-paid at International House – see page 27 for suggestions) Graduate Student box lunch, Ingman Room, SU 2520 (lunches limited to first 50 people) Invitation-only lunch for Dr. Colwell, Libby Hall (hosted by UT Lake Erie Center & AWIS)
1 - 3 p.m.	Scientific Sessions , Student Union
3 - 3:20 p.m.	Coffee Break, Student Union, three locations
3:20 - 5:20 p.m.	Scientific Sessions , Student Union
5 - 6:00 p.m.	Buses to Hotels and Dorms
5:30 - 6:30 p.m.	Buses depart for Zoo barbeque picnic from Student Union, Hotels, and Dorms
6:30 - 10 p.m.	IAGLR BBQ , Nairobi Events Pavilion, Toledo Zoo (Park in Anthony Wayne Trail lot)
9:30 - 10:30 p.m.	Buses depart to Dorms, Hotels, Campus Lots

Friday, May 22

8 - 10 a.m.	Conference Registration, Student Union, outside Room 2561, 2nd floor PowerPoint Presentation Drop-off, Student Union, Room 2562 (A/V Prep), 2nd floor
8 - 9 a.m.	Buses from Hotels and Dorms to Student Union
8 - 8:30 a.m.	Coffee and Continental Breakfast, Student Union, 2nd floor South Lounge
8:30 a.m. - 10:30 a.m.	Scientific Sessions , Student Union
10:30 - 10:50 a.m.	Coffee Break, Student Union, three locations
10:50 a.m. – 2:30 p.m.	Scientific Sessions , Student Union
12 p.m. - 2:00 p.m.	Bus to Hotels and Dorms
1:30 - 4 p.m.	Field Trips (see page 28) 1. Oak Opening State Nature Preserve at Kitty Todd. Leader: Todd Crail 2. Lake Erie Center and Lake Guardian Tour or Maumee Bay State Park Nature Museum. Leader: Nathan Manning

Both field trips should meet at Ottawa West Dorm's front parking lot for rides via university vans or to car pool.

HOWARD FRUMKIN, M.D., Dr.P.H., Plenary Speaker

Tuesday, May 19th, 9:00-10:30 a.m., Doermann Theatre

“Health and Environment: The Great Lakes Region”

Howard Frumkin is the Director of the National Center for Environmental Health and Agency for Toxic Substances and Disease Registry (NCEH/ATSDR) at the U.S. Centers for Disease Control and Prevention. NCEH/ATSDR works to maintain and improve the health of the American people by promoting a healthy environment and by preventing premature death and avoidable illness and disability caused by toxic substances and other environmental hazards.



Dr. Frumkin is an internist, environmental and occupational medicine specialist, and epidemiologist. Before joining the CDC in September 2005, he was Professor and Chair of the Department of Environmental and Occupational Health at Emory University’s Rollins School of Public Health and Professor of Medicine at Emory Medical School. He founded and directed Emory’s Environmental and Occupational Medicine Consultation Clinic and the Southeast Pediatric Environmental Health Specialty Unit.

Dr. Frumkin previously served on the Board of Directors of Physicians for Social Responsibility (PSR), where he co-chaired the Environment Committee; as president of the Association of Occupational and Environmental Clinics (AOEC); as chair of the Science Board of the American Public Health Association (APHA), and on the National Toxicology Program Board of Scientific Counselors. As a member of EPA’s Children’s Health Protection Advisory Committee, he chaired the Smart Growth and Climate Change work groups. He currently serves on the Institute of Medicine Roundtable on Environmental Health Sciences, Research, and Medicine. In Georgia, he was a member of the state’s Hazardous Waste Management Authority, the Department of Agriculture Pesticide Advisory Committee, and the Pollution Prevention Assistance Division Partnership Program Advisory Committee, and is a graduate of the Institute for Georgia Environmental Leadership. In Georgia’s Clean Air Campaign, he served on the Board and chaired the Health/Technical Committee. He was named Environmental Professional of the Year by the Georgia Environmental Council in 2004. His research interests include public health aspects of urban sprawl and the built environment; air pollution; metal and PCB toxicity; climate change; health benefits of contact with nature; and environmental and occupational health policy, especially regarding minority communities and developing nations. He is the author or co-author of over 160 scientific journal articles and chapters, and his books include *Urban Sprawl and Public Health* (Island Press, 2004, co-authored with Larry Frank and Dick Jackson; named a Top Ten Book of 2005 by Planetizen, the Planning and Development Network), *Emerging Illness and Society* (Johns Hopkins Press, 2004, co-edited with Randall Packard, Peter Brown, and Ruth Berkelman), *Environmental Health: From Global to Local* (Jossey-Bass, 2005; winner of the Association of American Publishers 2005 Award for Excellence in Professional and Scholarly Publishing in Allied/Health Sciences), *Safe and Healthy School Environments* (Oxford University Press, 2006, co-edited with Leslie Rubin and Robert Geller), and *Green Healthcare Institutions: Health, Environment, Economics* (National Academies Press, 2007, co-edited with Christine Coussens).

Dr. Frumkin received his A.B. from Brown University, his M.D. from the University of Pennsylvania, his M.P.H. and Dr.P.H. from Harvard, his Internal Medicine training at the Hospital of the University of Pennsylvania and Cambridge Hospital, and his Occupational Medicine training at Harvard. He is Board-certified in both Internal Medicine and Occupational Medicine, and is a Fellow of the American College of Physicians, the American College of Occupational and Environmental Medicine, and Collegium Ramazzini.

RITA COLWELL, Ph.D., Plenary Speaker

Thursday, May 21st, 11:00 a.m. to Noon, Doermann Theatre

“Climate, Oceans, Infectious Diseases, and Human Health: The Cholera Paradigm”

Dr. Rita Colwell is a Distinguished University Professor both at the University of Maryland at College Park and at Johns Hopkins University Bloomberg School of Public Health; Senior Advisor and Chairman Emeritus, Canon US Life Sciences, Inc., and President and CEO of CosmosID, Inc. Her interests are focused on global infectious diseases, water, and health, and she is currently developing an international network to address emerging infectious diseases and water issues, including safe drinking water for both the developed and developing world.



Dr. Colwell served as the 11th Director of the National Science Foundation, 1998-2004. In her capacity as NSF Director, she served as Co-chair of the Committee on Science of the National Science and Technology Council. One of her major interests includes K-12 science and mathematics education, graduate science and engineering education and the increased participation of women and minorities in science and engineering.

Dr. Colwell has held many advisory positions in the U.S. Government, nonprofit science policy organizations, and private foundations; as well as in the international scientific research community. She is a nationally-respected scientist and educator, and has authored or co-authored 17 books and more than 700 scientific publications. She produced the award-winning film, *Invisible Seas*, and has served on editorial boards of numerous scientific journals.

Before going to NSF, Dr. Colwell was the President of the University of Maryland Biotechnology Institute and Professor of Microbiology and Biotechnology at the University Maryland. She also was a member of the National Science Board from 1984 to 1990. Dr. Colwell has previously served as Chairman of the Board of Governors of the American Academy of Microbiology and also as President of the American Association for the Advancement of Science, the Washington Academy of Sciences, the American Society for Microbiology, the Sigma Xi National Science Honorary Society, and the International Union of Microbiological Societies. Dr. Colwell is a member of the National Academy of Sciences, the Royal Swedish Academy of Sciences, Stockholm, the Royal Society of Canada, the American Academy of Arts and Sciences, and the American Philosophical Society. She is President of the American Institute of Biological Sciences (AIBS).

Dr. Colwell also has been awarded 49 honorary degrees from institutions of higher education, including her Alma Mater, Purdue University and is the recipient of the Order of the Rising Sun, Gold and Silver Star, bestowed by the Emperor of Japan, and the 2006 National Medal of Science awarded by the President of the United States. Dr. Colwell is an honorary member of the microbiological societies of the UK, Australia, France, Israel, Bangladesh, and the U.S. and has held several honorary professorships, including the University of Queensland, Australia. A geological site in Antarctica, Colwell Massif, has been named in recognition of her work in the polar regions. Born in Beverly, Massachusetts, Dr. Colwell holds a B.S. in Bacteriology and an M.S. in Genetics, from Purdue University, and a Ph.D. in Oceanography from the University of Washington.

Graduate Student Luncheons

Luncheons will be held in the Ingman Room of the Student Union (SU 2520) from 12:10 to 1:10 on Tuesday and Thursday. **Box lunches will be provided free of charge for the first 50 graduate students who arrive.**

Tuesday May 19th – “How to Succeed and Network in Graduate School”

Dr. Patricia Komuniecki, Vice Provost for Graduate Affairs and Dean of the College of Graduate Studies, The University of Toledo

Thursday May 21st – “How to Write your CV and Get a Job or Postdoc”

Mary Jo Borden, Assistant Director of Career Services, The University of Toledo

The graduate students thank Dr. Patricia (“Patsy”) Komuniecki for her presentation at the graduate student luncheon on Tuesday May 19th. Dr. Komuniecki earned her B.A. in biology cum laude from Newton College (Boston College), an M.A. in biological sciences from Mount Holyoke College, and a Ph.D. degree in zoology from the University of Massachusetts. She conducted NIH- and WHO-funded postdoctoral research in parasite biochemistry at The University of Notre Dame and in pharmacology at the former Medical College of Ohio. She currently is a Professor of Biology at The University of Toledo and is part of an NIH-funded molecular parasitology research group with her husband, Dr. Richard Komuniecki. She has been an active mentor of M.S. and Ph.D. students over the years. She belongs to many professional parasitology organizations and academic honor societies, and is a longtime mentor for women in science. Dr. Komuniecki is the founding president of the northwest Ohio chapter of the Association for Women in Science (AWIS, 2005), and was elected as the first female Chapter President of Sigma Xi (1989-90) and the first female Chair of the Graduate Council (1998-99). She is the recipient of an Outstanding Faculty Woman Award (1990) and Outstanding Advisor Award (2006). She has held previous administrative appointments as the Chair of the Department of Biological Sciences (1998-2009) and as Associate Dean for the College of Arts and Sciences (1990-96). She was appointed as Vice Provost for Graduate Affairs and Dean of the College of Graduate Studies in January 2009.

We also thank Mary Jo Borden from Career Services, who is a graduate of The University of Toledo with a master’s degree in counseling and a bachelor’s degree in individualized programs. After working in international education, Ms. Borden began her focus on career services while employed at Pennsylvania State University as a Career Development and Placement Services counselor. She currently is an assistant director of Career Services and specializes in career counseling, federal employment, and advising graduate students on CV development and academic careers. She coordinates the annual job fair for students in the College of Pharmacy. She is the administrative and technical manager of the university’s job/resume service “Rocket Jobs”. Ms. Borden is a member of the National Association of Colleges and Employers and National Career Development Association. She is an active community volunteer and has served in a number of leadership roles with non-profit organizations.

Oral presentation guidelines

- Each speaker has 20 minutes (15 minutes for the presentation and 5 minutes for Q & A). Time limits will be enforced.
- A PC laptop, LCD projector and laser pointer will be provided in each room.
- Presentations not uploaded prior to the conference must be placed on a **USB flash drive or CD** and taken to the A/V prep room, Student Union Room 2562, for loading the day before the presentation (see guidelines for loading your presentation at the conference site, below). **All talks must be pre-loaded in the A/V prep room, SU 2562 – no talks will be loaded in session rooms and individual laptops will not be hooked up.**
- Computer-based presentations should use PowerPoint (PDF is also acceptable). We will be using PC laptops running **Microsoft Office 2003**. Mac users should take special care before the conference to ensure their presentation is compatible.
- Please do not use unusual fonts and limit use of animated images. Please do not use videos unless *absolutely necessary* for your presentation. Videos you must play in your PowerPoint presentation should be embedded and have separate back up copies (if you fail to embed the video, it will not play during your presentation; also note that embedding is not fail-safe and the video file should be stored on your presentation USB drive or CD).

Guidelines for loading your presentation at the conference site

- **Student Union Room 2562 is the A/V prep room.** It is located near the registration desk.
- **All presentations must be loaded onto the conference server in the A/V prep room, SU 2562. Talks will not be loaded in the presentation rooms.**

A/V personnel will be in the prep room to load presentations during the following hours:

- **Monday, May 18th: 10 a.m. – 9 p.m.**
 - **Tuesday, May 19th: 8 a.m. – 6 p.m.**
 - **Wednesday, May 20th: 8 a.m. – 6 p.m.**
 - **Thursday, May 21st: 8 a.m. – 6 p.m.**
 - **Friday, May 22nd: 8 a.m. – 12 p.m.**
- **Monday, May 18, is an ideal time to load your talk**, as there are no sessions that day. A/V personnel will be in the prep room from 10 a.m. – 9 p.m. to load your presentation.
 - Please make every effort to load your presentation **THE DAY BEFORE** your session or earlier. The program will not be delayed because a talk is loaded last-minute or does not display properly on the conference computers.
 - **Before arriving to the A/V prep room**, check the program for information about your session, including the date, time and room number. Name your presentation file using the following guidelines:
 - PresentationDayAndTime-RoomNumber-PrimaryAuthorLastName-FirstInitial.ppt
 - **EXAMPLE: T830-2582-Smith-J.ppt**
 - Use a single letter for the day with R for Thursday – T, W, R or F
 - Your talk must be placed on a USB drive or CD before arriving to the A/V prep room. No other storage devices will be supported and individual laptops will not be hooked up for loading.
 - You will be provided up to 3 minutes to view your presentation in the A/V prep room to ensure everything looks okay. This time is not for doing a practice talk.
 - A/V personnel will be on hand in each session room to pull up the appropriate presentations on networked computers before sessions begin.

Poster presentation guidelines

- The formal poster session will be Tuesday, May 19, from 6 p.m. – 8 p.m., in the Student Union Auditorium (3rd Floor). **All posters must be in place by 2 p.m. that afternoon.**
- Poster boards and pushpins will be available in the Student Union Auditorium (3rd Floor) beginning Tuesday morning.
- Though poster boards are 4 feet high by 8 feet wide (~1.2 meters high by ~2.4 meters wide), we recommend that posters be no higher than 3 feet and no wider than 4 feet (~1 meter high by ~1.2 meters wide).
- Additional advice on designing science posters can be found at: <http://www.conbio.org/studentaffairs/posters/>
- **All posters must be removed by 5 p.m. on Thursday, May 21.**

IAGLR Officers and Board Members

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Presentations and Posters are the property of the presenter. Audio recording, copying, videotaping or photographing of a presentation without the express permission of the presenter is prohibited.

Our deepest appreciation is extended to our annual

IAGLR Sustaining Members

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2100 Commonwealth Boulevard, Suite 100
Ann Arbor, Michigan 48105-1563

Great Lakes Protection Fund

1560 Sherman Avenue, Suite 880
Evanston, Illinois 60201-4808

International Joint Commission

Great Lakes Regional Office

100 Ouellette Avenue
Windsor, Ontario N9A 6T3

U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration

Great Lakes Environmental Research Laboratory

4840 South State Road
Ann Arbor, Michigan 48108

U.S. Environmental Protection Agency

Great Lakes National Program Office

77 West Jackson Street
Chicago, Illinois 60604

* proud sponsor of the Norman S. Baldwin Fishery Science Scholarship

The International Association for Great Lakes Research is a member run organization. If you are interested in supporting the scientific community in its work in the exploration, discussion and resolution of Great Lakes issues, please consider joining IAGLR! Individual or Sustaining memberships are available.

Further information may be found on our website www.iaglr.org or pick up our brochure in the registration area.

IAGLR member benefits include:

- Quarterly *Journal of Great Lakes Research* subscription
- *Journal of Great Lakes Research* Special Issues
- Access to *J. Great Lakes Research* archives from 1975-present
- Annual Conference on Great Lakes Research registration discount
- *IAGLR Notes*, a biweekly e-mail news service
- Access to our private *IAGLR Membership Directory*
- Access to and/or volunteer for *IAGLR's Expert Directory*
- Recognition through prestigious peer reviewed IAGLR Awards
- Free *Contents Direct* email alerting service
- Additional discounts available from Elsevier
- Eligible for election to serve on the IAGLR Board of Directors
- Opportunities to work on various committees
- Networking resources are available to all members
- Utilize the Job Board to advertise job openings or seek employment
- Stay abreast or post news of interest on our web site
- Students, Retirees, and Young Professionals enjoy reduced fees with full benefits!

Organizing Committee

52nd Annual Conference

Bridging Ecosystems and Environmental Health Across Our Great Lakes

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Lake Erie Center and Department of Environmental Sciences, University of Toledo

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Cyndee Gruden, Opening Reception, Planetarium

Jon Bossenbroek, Poster Show & Exhibitors Reception

Mike McKay and Kevin Czajkowski, Hockey Game

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The Organizing Committee extends its gratitude to the following individuals for their contributions to the 52nd Annual Conference:

Paula McIntyre (Loracs Design LLC); Robert Heath, IAGLR Conference Committee Chair;

Wendy Foster, IAGLR Business Manager

“Green” Initiatives at the 52nd Annual Conference at the University of Toledo

The University of Toledo and International Association for Great Lakes Research have “greened” our 2009 annual conference on Great Lakes Research by:

- Stainless steel travel mugs (\$10.00 preorder or \$13.00 at the registration desk) are available to reduce paper waste. Instead of using and throwing away cups, please purchase a travel mug and help decrease waste produced by our conference while contributing to support the IAGLR student scholarships.
- Online abstract book
- Recycle your IAGLR lanyards and name badge holders at the end of our conference to reduce waste and decrease costs for the 2010 conference in Toronto, ON. **Please remember to recycle your lanyard and name badge at the registration desk before you leave!**
- We eliminated most brochures and extra material in your tote bag. For extra information about the Toledo area, maps, or things to do please see the program book or stop by the registration desk to pick up maps and fliers.
- Our conference tri-fold brochure and program are printed on recycled paper.
- IAGLR pens have an 80% post-consumer recycled paper barrel and wooden clip.
- Tote bags, pens, and travel mugs were purchased from and screen-printed by a local Toledo company.
- The wine served at the IAGLR banquet is local Lake Erie wine, and the walleye is local, from Lake Erie.
- No need to drive at our campus. Please take the bus to all events! Save gas and reduce our carbon load! Stay at our new dorms and walk our beautiful campus! Or bring your bike (& lock) or roller blades and enjoy our University/Parks Trail bike path and the Wildwood MetroPark!

University of Toledo Rain Gardens

During the fall of 2008, the University of Toledo installed two rain gardens on the main campus. Both gardens were developed through efforts of the President’s Commission on the River in collaboration with UT’s Facilities and Construction team. They are designed to demonstrate a green alternative to treat stormwater runoff, help prevent storm sewers from being overwhelmed, provide habitat, serve as a natural laboratory for UT classes, and beautify campus. A third rain garden was developed at the UT Lake Erie Center in 2008 – 2009 with the help of the Ottawa Hills 7th grade Lego Robotics team.

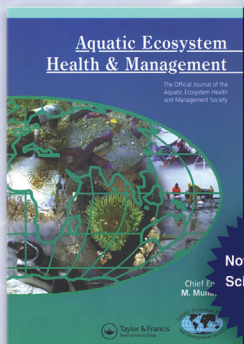
The garden adjacent to Lot 10 on the main campus, the Carolyn Edwards Memorial Garden, absorbs water that drains from nearly 3,000 m² of contributing area including tennis courts and concrete walkways. This rain garden was built in the shape of a kidney to symbolize its cleaning function in the landscape. The other rain garden, the May Sue Cave Honors Rain Garden, collects runoff from the roof of the adjacent International House residence halls. Both gardens have been planted with a mix of native hydrophytic vegetation and will be maintained with the help of student groups and volunteers.

The UT Lake Erie Center rain garden is planted with natives. It collects all water from the French drains (roof run-off) and front parking lots, before it flows into the LEC pond.



*University of Toledo rain garden next to Lot 10
(photo courtesy of the Toledo Alumni magazine)*

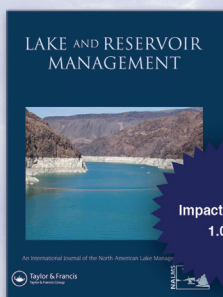
Key Journals for the Latest Research in Aquatic Science



Aquatic Ecosystem Health & Management

Editor-in-Chief: M. Munawar
Great Lakes Laboratory for Fisheries & Aquatic Sciences,
Fisheries & Oceans Canada
Volume 12, 2009 • 4 issues per year
www.tandf.co.uk/journals/UAEM

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Lake and Reservoir Management

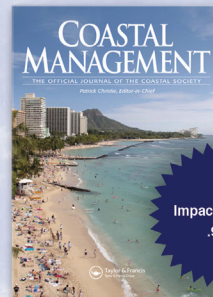
Editor-in-Chief: Ken Wagner, AECOM
Volume 25, 2009 • 4 issues per year
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Impact Factor:
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Reviews in Fisheries Science

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Texas A & M University
Volume 17, 2009 • 4 issues per year
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Volume 37, 2009 • 6 issues per year
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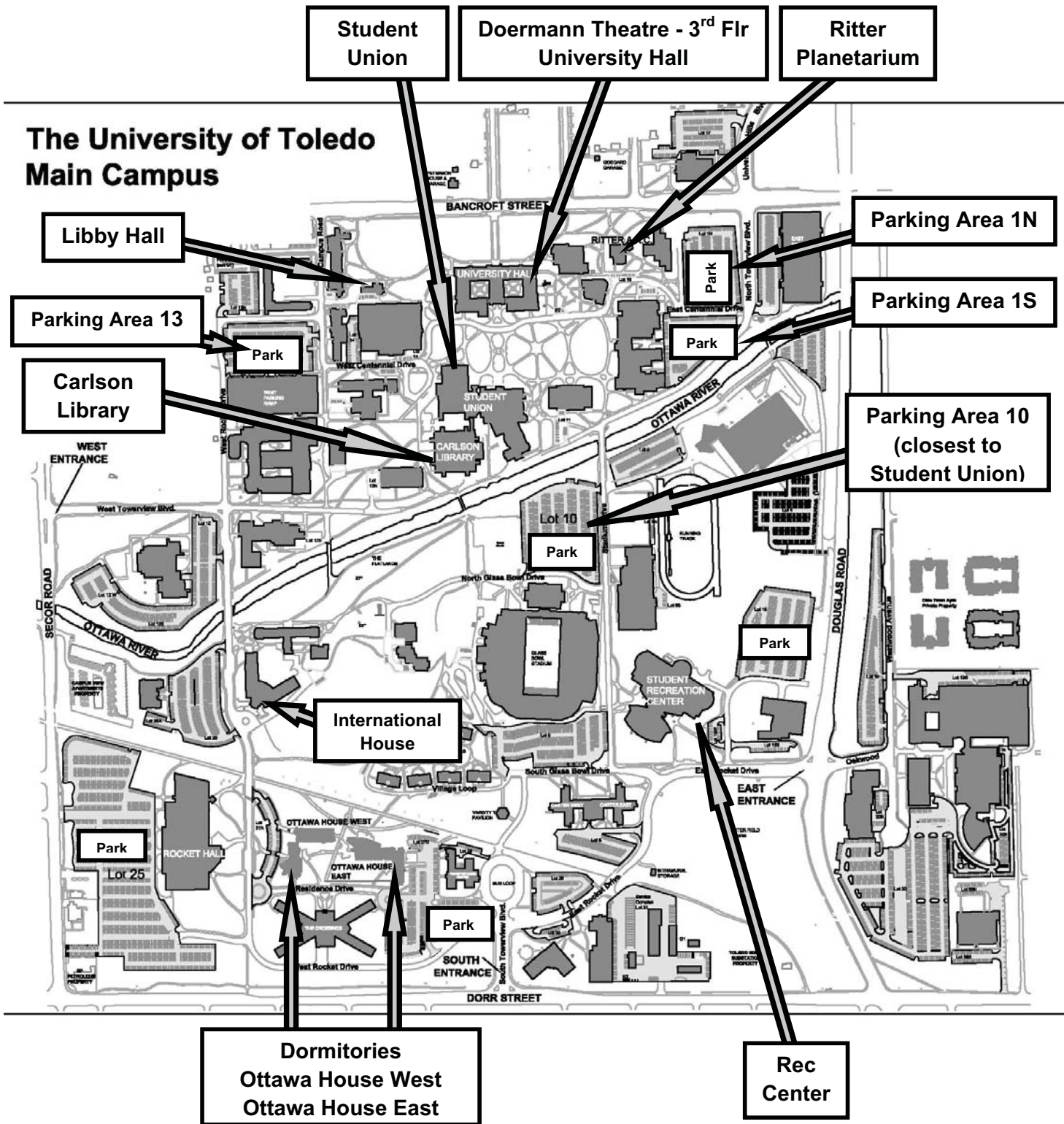
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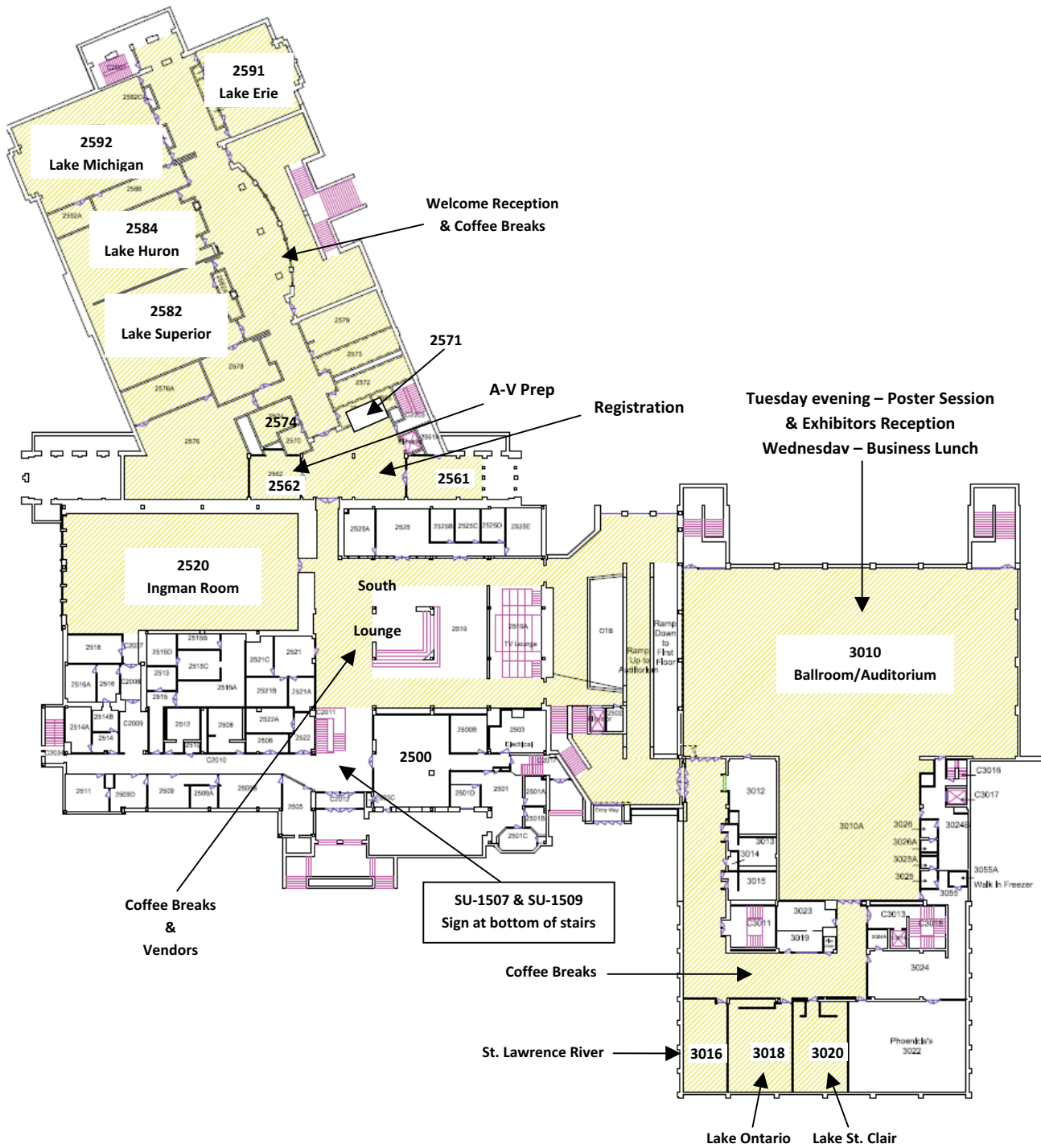
Main Campus – University of Toledo



Parking Lot Information:

- For Lot 10, use the North Entrance, off of Bancroft St. or the East Entrance off of Douglas Rd.
- For Lot 13, use the West Entrance, off of Secor Rd.
- For Lots 1N & 1S, use the North Entrance off of Bancroft St.
- For dorm room parking, use the South Entrance off of Dorr St.

Student Union



Parking

Conference participants may park for free in any legal parking space on the main campus. Unauthorized parking in handicapped spots, parking in metered spaces with expired meters, and other illegal parking will result in a ticket. Several of the more convenient parking lots are labeled on the campus map (page 17).

Bus Schedules

Special IAGLR buses will transport conference participants as shown below. At the Ottawa Dorms, buses will stop at the marked bus stop in front of Ottawa West. Buses will stop at the marked stop located on the west end of the Student Union. Buses will make three circuits: (1) Hilton to Student Union, (2) Dorms to Student Union, and (3) Ramada/Comfort Inn to Student Union. The first buses should be waiting at the start of a time window and subsequent buses should arrive at approximately 20-minute intervals. If you have a transportation emergency involving the university bus system, you may contact the bus garage at 419-530-1026 between 8:00 a.m. and 5:00 p.m., and 419-277-2396 or 419-277-2385 after hours.

Date	Time	Pick-up/drop-off	Event
Monday, May 18	5:00 pm - 6:00 pm	Hotels and Ottawa Dorm to UT Student Union	Welcome Reception and Planetarium Show
	9:00 pm - 10:00 pm	UT Student Union to Hotels and Ottawa Dorm	
	11:00 pm - 12:00 am	UT Student Union to Hotels and Ottawa Dorm	
Tuesday, May 19	8:00 am - 9:00 am	Hotels and Ottawa Dorm to UT Student Union	IAGLR Conference
	5:00 pm - 6:00 pm	UT Student Union to Hotels and Ottawa Dorm	Hockey Game
	8:00 pm	UT Student Union, Hotels and Ottawa Dorm to Tam O'Shanter	
	10:30 pm - 11:00 pm	Tam O'Shanter to Hotels and Ottawa Dorm	
Wednesday, May 20	8:00 am - 9:00 am	Hotels and Ottawa Dorm to UT Student Union	IAGLR Conference
	5:00 pm - 6:00 pm	UT Student Union to Hotels and Ottawa Dorm	IAGLR Awards Banquet
	6:30 pm	UT Student Union, Hotels and Ottawa Dorm to Pinnacle Banquet Hall	
	9:30 pm - 10:30 pm	Pinnacle Banquet Hall to Hotels and Ottawa Dorm	
Thursday, May 21	8:00 am - 9:00 am	Hotels and Ottawa Dorm to UT Student Union	IAGLR Conference
	5:00 pm - 6:00 pm	UT Student Union to Hotels and Ottawa Dorm	IAGLR BBQ Dinner
	5:30 pm - 6:30 pm	UT Student Union, Hotels and Ottawa Dorm to Toledo Zoo	
	9:30 pm - 10:30 pm	Toledo Zoo to Hotels and Ottawa Dorm	
Friday, May 22	8:00 am - 9:00 am	Hotels and Ottawa Dorm to UT Student Union	IAGLR Conference
	12:00 pm - 2:00 pm	UT Student Union to Hotels and Ottawa Dorm	

Recreation Center

IAGLR conference participants may use the Recreation Center any time May 18-22 for \$8/visit for adults and \$5/visit for youth under age 18. All youth must be accompanied by a parent while at "The Rec". IAGLR participants must show their conference ID at the front desk each visit. The Rec's hours of operation during the conference are Monday-Thursday 9 am - 9 pm and Friday 9 am - 8 pm. Telephone: (419) 530-3705.

Internet Services

Wireless internet access will be available throughout the Student Union. Each suite in the residence halls has free internet access, but conference participants need to bring their own cable. Computer terminals are available in Carlson Library for e-mail and internet browsing. For library information, call (419) 530-2298.

Ritter Planetarium: Special showings for IAGLR09 of "The Star Gazer" 8:30 and 9:30 PM, Monday, May 18, 2009

Ritter Planetarium and Brooks Observatory at the University of Toledo provide educational and entertaining activities related to astronomy, the sky, and our place in the universe. The planetarium is a 40-foot domed auditorium seating 92, with a central projector capable of reproducing the sky as seen from anywhere on Earth at any time. Outside the planetarium is a lobby with displays, many of them interactive. Brooks Observatory, located in McMaster Hall, contains refracting and reflecting telescopes for viewing the heavens. "The Star Gazer" planetarium show will be offered to IAGLR participants on Monday, May 18th at 8:30 and 9:30 p.m. and the observatory will be open after the program, weather permitting. The planetarium and observatory are located on the northeast side of campus, a 3-minute walk from the Student Union, across Centennial Mall.

THE STAR GAZER

Special showing for IAGLR09

Ritter Planetarium

8:30 and 9:30 pm, Monday, May 18th

- Includes live, interactive planetarium sky talk
- Ritter Observatory open house 10:00 PM, with viewing if weather permits
- Admission free to IAGLR09 registrants

Come along on a journey to the stars with University of Illinois astronomer Jim Kaler and Nichelle Nichols (Chief Communications Officer Uhura from the original *Star Trek*) in a production by the Great Lakes Planetarium Association and the Minneapolis Planetarium.

Planetarium

IAGLR

Centennial Mall

The show begins with a child's curiosity, moves on to the science of gravity, light, and the spectrum, and how they help us decipher the lifestyles of the stars, then ends with reflections on the deeper meanings of astronomy in our own lives.

Image credits: Steve Howell (NOAO) and James Kaler

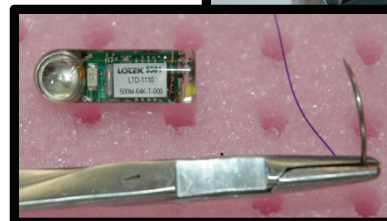


Do you need funding for your research?

The Great Lakes Fishery Commission needs more sea lamprey research proposals!

The GLFC is seeking high quality research focused on:

- Behavioral ecology
- Genetics
- Integrated pest management strategies for sea lamprey control
- Metamorphosis; Reproductive physiology
- Parasite-predator: host-prey relationships
- Lampricide toxicity
- Movement patterns in response to physical environment
- Sterility mechanisms
- Novel capture technology



Visit us online to find out more about the program.

www.glfc.org/research.php



Attractions

1)

Located at 6200 Bayshore Rd, Oregon OH 43618; (419) 530-8360
The University of Toledo's Lake Erie Center is an interdisciplinary research and education center dedicated to solving environmental problems at the land-water interface and bay-lake exchanges in the Great Lakes - the world's largest freshwater ecosystem. <http://www.lakeerie.utoledo.edu>



2)

Located at 406 Washington St. Toledo, OH 43604; (419) 725-HENS
Professional baseball has been played in Toledo since 1883. Come to the heart of Toledo and enjoy The Mudhens, Toledo's Triple A baseball team. <http://www.mudhens.com>

THE DOCKS



3)

"The Docks" is located east of downtown Toledo in International Park along the Maumee River. The Docks has been Toledo's place to dine since 1996, and offers an eclectic array of cuisine from 6 different restaurants.

****See map on the following page for attraction locations****

4)



TOLEDO MUSEUM OF ART

Located at 2445 Monroe Street at Scottwood Avenue, Toledo, Ohio 43697; (800) 644-6862. Since our founding in 1901, the Toledo Museum of Art has earned a global reputation for the quality of the collection, the innovative education programs, and the architecturally significant campus. Within this celebrated environment, we invite you to personally discover the power of art: to delight, to inspire, to engage, and even to transform viewers of all ages and backgrounds. Opened in 2006, the postmodern Glass Pavilion is the new home of the Toledo Museum of Art's world-renowned glass collection, featuring more than 5,000 works of art from ancient to contemporary times. Designed by Tokyo-based SANAA, Ltd., the Glass Pavilion received *Travel + Leisure's* 2007 Design Award for "Best Museum." <http://www.toledomuseum.org>



THE UNIVERSITY OF TOLEDO 1872

5)

The University of Toledo is one of 13 state universities in Ohio. We were established in 1872 and became a member of the state university system in 1967. The University of Toledo and the Medical University of Ohio merged July 2006 to form the third-largest public university operating budget in the state. Go Rockets! <http://www.utoledo.edu>



TOLEDO ZOO

6)

Located at 2700 Broadway St, Toledo, OH 43609; (419) 385-5721
With over 5,300 animals representing over 760 species, The Toledo Zoo is one of the world's most complete zoos—it's also the region's top family destination! Let The Toledo Zoo take you from the Arctic tundra to the wilds of Africa, from the tropical rainforest to the Sonoran Desert and all points between—all in one great day. <http://www.toledozoo.com>

"Around Town" Important Area Locations



University Parks Bike Trail and Local Map With Shopping and Restaurants

The six-mile trail stretches from the University of Toledo campus to Sylvania Township. It offers a lush greenway through woodland, passing meadows and wetlands. The level, paved path is suitable for joggers, cyclists and in-line skaters, and can easily accommodate wheelchairs. The trail has several neighborhood access points (including by Rocket Hall, near the railroad traks on the UT campus), a trail connecting to the Wildwood Preserve Metropark trail system, and designated roadway connections to Ottawa Park, Olander Park and Westfield Shoppingtown at Franklin Park. The University/Parks Trail is owned by Lucas County and maintained by Metroparks, the University of Toledo and the City of Toledo. Metroparks rangers and, in some sections, local jurisdictions patrol the trail. (Text and map courtesy of MetroParks Toledo, online at: <http://www.metroparkstoledo.com/>.)

Also on this map:

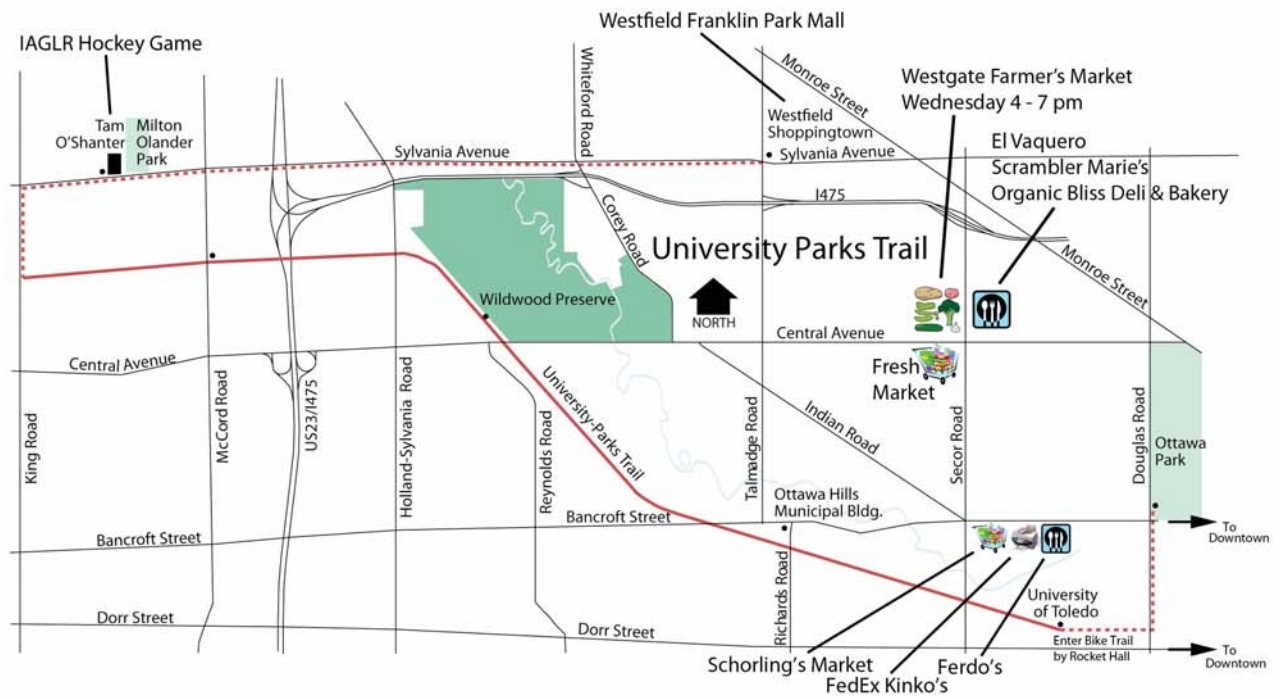
- **Westgate Farmer's Market**, Wednesday, 4 – 7 p.m.
- **Supermarkets:** Fresh Market and Schorling's
- **Eating Establishments:** Ferdo's, El Vaquero, Scrambler Marie's, Organic Bliss Deli & Bakery, Tam O'Shanter
- **Westfield Franklin Park Mall** (Sylvania, Talmadge and Monroe), stores include: Macy's Dillard's, JCPenney's, Ann Taylor, Gap, Old Navy, Hollister, Forever 21, H&W, Borders and many others. There are also movie theaters and several restaurants (see <http://westfield.com/franklinpark> for more information)
- **Copy/Print shop:** FedEx Kinko's

University/Parks Trail

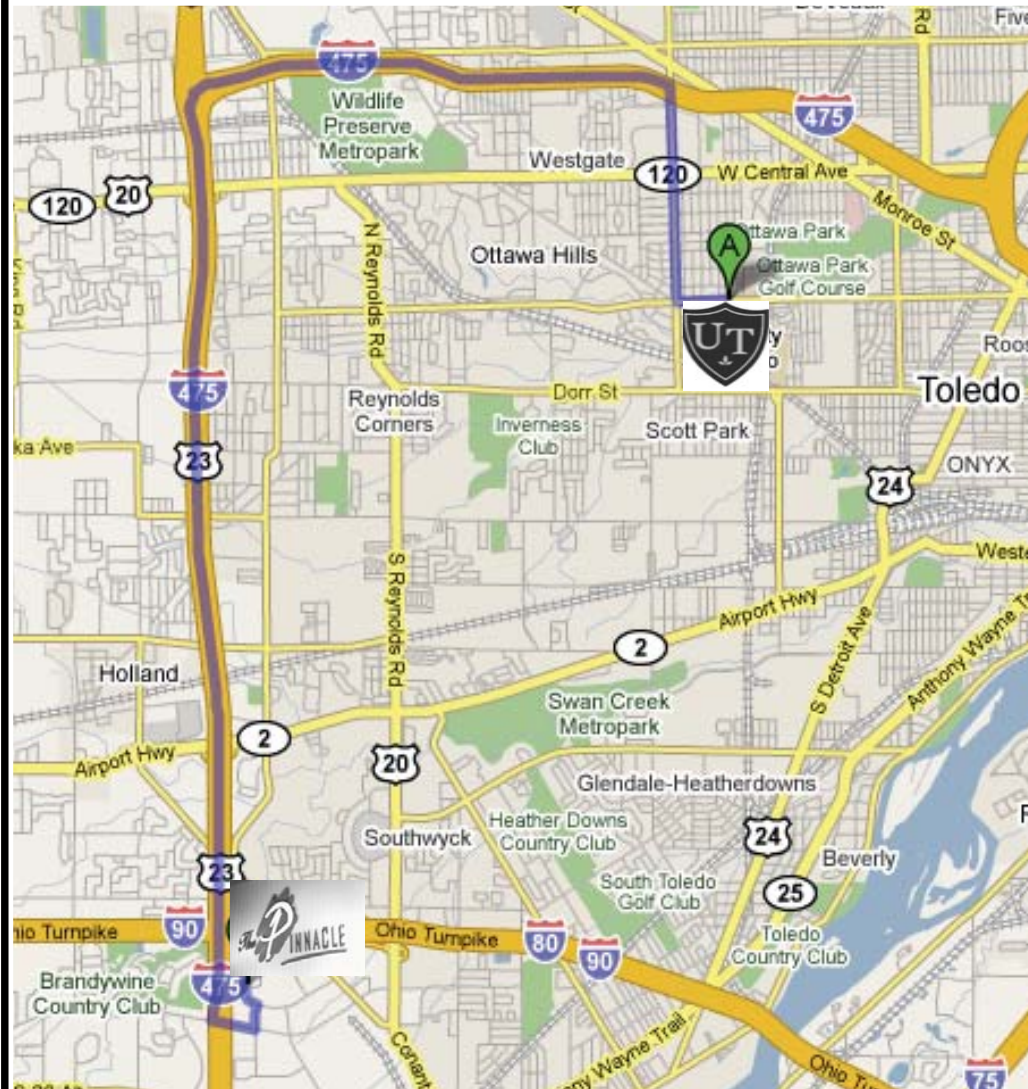
Trails	
Access Points with Parking University of Toledo to King Road • Westfield Shoppingtown (street connection) • Tam O'Shanter (street connection) • McCord Road • Wildwood Preserve Metropark • Ottawa Hills Municipal Building • University of Toledo • Ottawa Park (street connection)	One Way Miles 6.3

1 2 3
Scale in Miles

Note: Restaurant & shopping icons not to scale



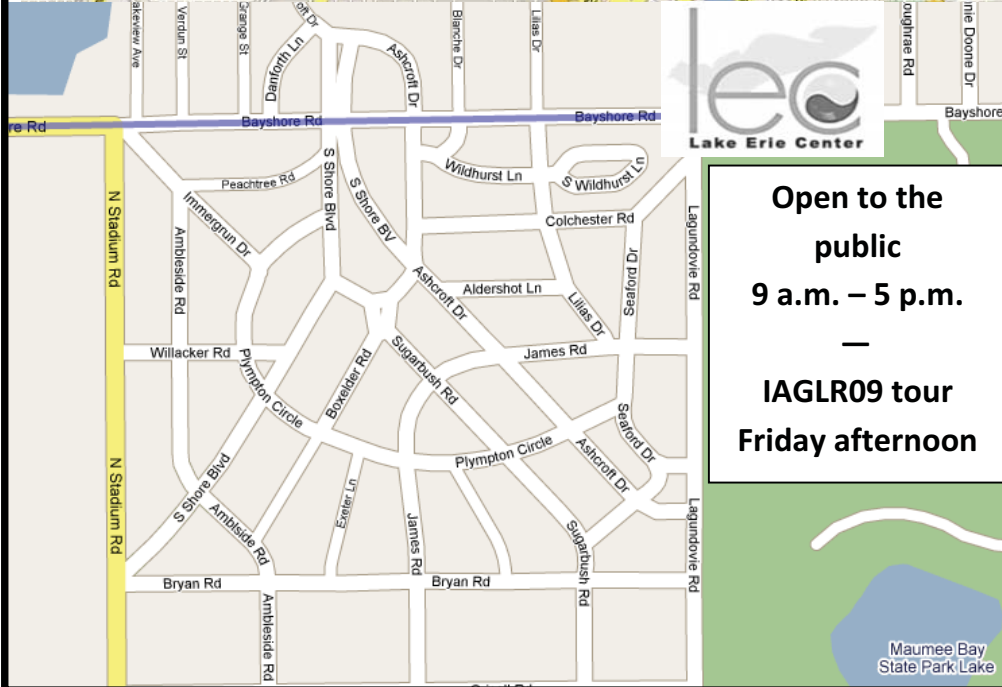
Directions From The University to The Pinnacle (Banquet Wednesday Evening)



- 1) Depart The University of Toledo, 2801 West Bancroft Street
 - 2) Head west on **W Bancroft St** toward Secor Road (.4 Miles)
 - 3) Turn right at **Secor Rd** (1.7 Miles)
 - 4) Turn left to merge onto **I-475 W** (11 Miles)
 - 5) Take **exit 6** for **Salisbury Rd** toward I-80/I-90/Turnpike (.3 Miles)
 - 6) Turn left at **W Dussel Dr/Salisbury Rd** (*signs for I-80/Ohio Turnpike/Dussel Dr/I-90/Maumee*)
 - 7) Continue to follow **W Dussel Dr** (.4 Miles)
 - 8) Turn left at **Arrowhead Dr** (.2 Miles)
 - 9) Turn left at **Indian Wood Circle** (.2 Miles)
- The Pinnacle will be on the left**

**1772 Indian Wood Circle
Maumee, OH 43537
(419) 891-7325**

Directions From The University to The Lake Erie Research Center (Friday Field Trip)

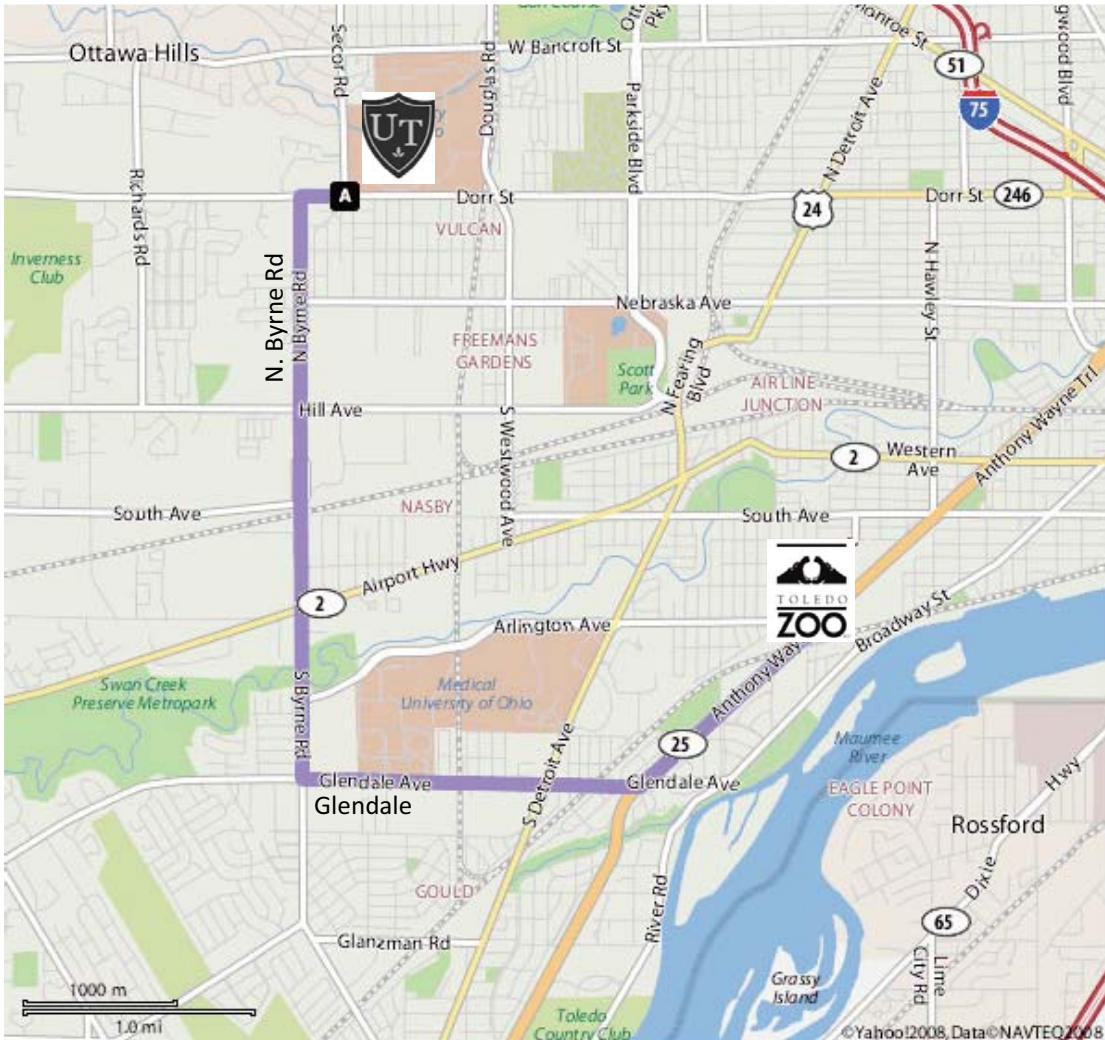


Open to the
public
9 a.m. – 5 p.m.
—
IAGLR09 tour
Friday afternoon

- 1) Depart The Unveristy of Toledo, 2801 West Bancroft Street
- 2) Head east on **W Bancroft St** (for 2.2 Miles)
- 3) Turn left at **N Detroit Ave/US-24** (.2 Miles)
- 4) Merge onto **I-75 North** via the ramp (4.2 Miles)
- 5) Take **exit 208** for **I-280 South**
- 6) Keep left at the fork to continue toward I-280 S and **merge onto I-280 South** (2.3 Miles)
- 7) Take **exit 9** for State Hwy 65/Front St (1 Mile)
- 8) Turn right onto Front St (signs for Front St)
- 9) Turn right at **Consaul St** (1.6 Miles)
- 10) Turn left at **Otter Creek Rd** (2.5 Miles)
- 11) Continue on **Bayshore Rd** (2.6 Miles)

-- The Lake Erie Center will be on the right
6200 Bayshore Rd
Oregon, OH 43618
(419) 530-8360
www.lakeerie.utoledo.edu

Directions from the University to The Toledo Zoo (BBQ Thursday Evening)



- 1) Depart University of Toledo, use **Dorr Street** exit, turn right onto Dorr Street.
- 2) Head west on **Dorr Street** towards N. Byrne Rd (for 0.5 Mile)
- 3) Turn left onto **N. Byrne Road** (for 2.8 Miles)
- 4) Turn left onto **Glendale Ave** (for 1.6 Miles)
- 5) Bear left onto **Anthony Wayne Trail** (for 1.1 miles)
- 6) Turn left onto **Hippo Way entrance** (500 feet)
- 7) at Toledo Zoo, go to Nairobi Pavillion for IAGLR BBQ

Local Dining Establishments

Name	Address	Phone Number	Breakfast/ Coffee	Lunch	Dinner	Bar	Distance from Campus* (miles)
Caffeinis Coffee	1471 Secor Rd.	(419) 536-9724	x	x			1.1
Barry Bagels	3301 W. Central Ave.	(419) 537-9377	x	x			1.5
Biggby Coffee	3301 W Central Ave.	(419) 537-9377	x				1.5
The Original Pancake House	3310 W. Central Ave.	(419) 578-0342	x	x	x		1.6
Starbucks Coffee	3305 W. Central Ave.	(419) 535-2943	x				1.5
Café Maries	3344 Secor Rd.	(419) 531-9678	x	x			1.8
Dorr Street Café	5243 Dorr St.	(419) 531-4446	x	x	x		3.5
Dunkin' Donuts	2709 W Central Ave.	(419) 480-0504	x				1.3
Schmuckers Restaurant	2103 N. Reynolds Rd.	(419) 535-9116	x	x	x		3.0
Student Union Food Court (not open for dinner) Subway, Pizza Hut, Starbucks	On campus, Student Union, 1 st fl.			x	x		0
Phoenicia (Mediterranean)	Student Union 3 rd fl.	(419) 530-2151		x	x		0
Jimmy Johns	3235 Dorr St.	(419) 720-6333		x	x		1.1
Papa John's Pizza	3329 Dorr St.	(419) 539-7777		x	x		1.1
Toledo Meat Market (Deli sandwiches, sides)	3410 Dorr St.	(419) 539-4262		x	x		1.2
Campus Oasis (Pizza, Sandwiches, Ice cream)	3303 Dorr Street	(419) 329-0000	x	x	x		1.1
El Vaquero	3302 Secor Road	(419) 536-0471		x	x	x	1.6
Organic Bliss (Deli)	3312 Secor Road	(419) 724-4888		x	x		1.6
Franklin Park Mall (Claddagh Irish Pub, Elephant Bar, Bravo! Italian, and more)	5001 Monroe Street			x	x	x	3.4
Sori Sushi	5236 Monroe St.	(419) 720-7674		x	x	x	4.0
Aladdin's (Lebanese/American)	4038 Talmadge Rd.	(419) 472-8004		x	x	x	4.4
Real Seafood	22 Main Street	(888) 456-DINE		x	x	x	5.1
Kotobuki Japanese	5577 Monroe St.	(419) 882-8711		x	x	x	1.8
Tony Packo's	1902 Front Street	(419) 691-6054		x	x	x	10.1
J. Alexander's	4315 Talmadge Rd.	(419) 473-8620		x	x	x	3.8
Georgio's Café Int'l	426 N. Superior St.	(419) 242-2424		x	x	x	4.8
Mancy's Italian Grill	5453 Monroe Street	(419) 882-9229		x	x	x	4.6
Shorty's American Roadhouse	5111 Monroe Street	(419) 841-9505		x	x	x	3.6
Ferdo's (Mediterranean)	3065 W. Bancroft St.	(419) 535-9494		x	x	x	0.2
Mulvaney's Bunker Irish Pub	4945 Dorr St.	(419) 534-9830			x	x	3.0
Nick & Jimmy's Bar & Grille	4956 Monroe St.	(419) 472-0756	x	x	x	x	3.3

There are many more options located along Monroe Street west of Secor Road including Applebee's, Red Robin, Bob Evans, Olive Garden, Red Lobster, and many fine restaurants located at The Docks, located off Main Street in downtown Toledo (see page 21).

* Driving distance from Main Campus address: 2801 W. Bancroft Street, Toledo, Ohio 43606

Friday Field Trip Information

Friday Field Trips will meet in front of the Ottawa West Dorms at 1:30 (see campus map, page 17) and will have snacks packed for you (granola bars, dried fruit, water). Your choices are as follows:

Field Trip 1: Oak Openings

Explore the **Oak Openings**, designated by the Nature Conservancy as "One of the 200 Last Great Places on Earth." This globally distinct ecosystem is as rare and significant as the rainforest. We will explore a heterogeneous patchwork of dunes and interdunal wetlands that host over 1,000 species of plants and 200 species of birds. We will also observe a host of reptiles, mammals, and insects, among which we will likely see the Federally Endangered karner blue butterfly, *Lycaeides melissa samuelis*, during the peak bloom of the wild lupine, *Lupinus perennis*.



We will walk approximately 1.5 miles (2.4 km) through various habitats at the Nature Conservancy's Kitty Todd Preserve showcasing barrens and oak savanna ecotones and a half mile (0.8 km) walk on a boardwalk through the wetlands of the Irwin Prairie Ohio State Nature Preserve showcasing Great Lakes twig-rush wet prairie.

Please bring shoes that can get slightly wet or comfortable wellington boots, binoculars, hand lenses, field guides, sunscreen & bug spray. We will try to stay out of water as much as we can, but there may be muddy areas.

Field Trip 2: University of Toledo Lake Erie Center and R/V Lake Guardian (weather permitting) and/or Maumee Bay State Park Trautman Nature Center



The **Research Vessel (R/V) Lake Guardian** is the EPA flag-ship research vessel on the Great Lakes and "is the only self-contained, non-polluting research ship on the Great Lakes" (www.epa.gov/glnpo/monitoring/guardian/ship.html).

The ship is 180 feet (55 m) in length, has a range of 6,000 nautical miles, and has three dedicated scientific laboratories as well as three containerized laboratories.

The **Lake Guardian** is an integral part of the EPA's long-term monitoring of the health of the Great Lakes, as well as being available as a vessel of opportunity to scientists conducting their own research.

The University of Toledo's Lake Erie Center is an interdisciplinary research and education center located on the shore of Maumee Bay in Oregon, Ohio. The Lake Erie Center assembles within a single facility programs and expertise in aquatic conservation, bioremediation and restoration, coastal zone processes, environmental chemistry and hydrology, ecology and ecosystem management, fishery genetics, geography and land use planning, limnology, remote sensing, and environmental and health monitoring (www.lakeerie.utoledo.edu).



The Trautman Nature Center, located on the grounds of **Maumee Bay State Park**, is a state-of-the-art education center staffed by a year-round naturalist. The center has interactive displays, a programming auditorium, research laboratories and viewing areas. It is also adjacent to the boardwalk trail, which winds through the woods and wetlands that border the bay.

Please be aware that there are time and weather constraints on the availability of the *R/V Lake Guardian* that may prevent her docking in Toledo. We will visit the LEC and *R/V Lake Guardian*, if it is available. If the *Lake Guardian* is not available, we will visit the LEC and Trautman Nature Center at Maumee Bay State Park.

Undergraduate and Graduate Programs at the University of Toledo Lake Erie Center

The Lake Erie Center is dedicated to environmental research and education, centering on the Lake Erie Watershed. The LEC integrates research and education programs in:

- Aquatic and Terrestrial Ecology
- Aquatic Resources and Fisheries
- Environmental Restoration Ecology
- Geography and Land Use Planning
- Hydrologic and Landscape Modeling
- Plant Science and Bio-remediation
- Public Policy and Risk Management
- Remote Sensing and Monitoring
- Soil and Water Chemistry
- Water Pollution, Air Pollution, and Human Health



The LEC houses the Benthic Ecology Lab, the Environmental Remediation and Restoration Laboratory, the GIS & Remote Sensing Lab, the Great Lakes Genetics Laboratory, the Invasive Species Modeling Lab, and the Water Quality Laboratory. The LEC hosts an NSF GK-12 Program, which partners advanced graduate students in STEM disciplines at the University of Toledo with high school teachers and their students to build an Environmental Science Learning Community at the land-lake ecosystem interface; and an NSF URM program, which supports minority undergraduate scientists. Faculty and students come to work and learn at the Lake Erie Center from a variety of UT departments, including the Departments of Environmental Science, Civil Engineering, Geography & Planning, Economics, and Education. UT Undergraduate and Graduate applicants interested in the Great Lakes, please consider the Lake Erie Center for your research and education pursuits! Visit www.lakeerie.utoledo.edu for information about the LEC and www.utoledo.edu to learn about University of Toledo departments and the admission process.

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Overview of Sessions

Tuesday, May 19

- 10:50 a.m. - 12:10 p.m. **Aquatic Invasive Species in the Great Lakes Region**
Room 2582, Lake Superior
- 10:50 a.m. - 12:10 p.m. **Upper Great Lakes Food Webs, Conditions, and Assessments.**
Room 2584, Lake Huron
- 10:50 a.m. - 12:10 p.m. **Carbon Cycling in the Laurentian Great Lakes**
Room 2592, Lake Michigan
- 10:50 a.m. - 12:10 p.m. **Sources, Exposures, Remediation and Toxicity of PCB Congeners and their Breakdown Products**
Room 2591, Lake Erie
- 10:50 a.m. - 12:10 p.m. **Physical Limnology and Physical-Chemical-Biological Coupling in Lakes**
Room 2520, Ingman Room
- 10:50 a.m. - 12:10 p.m. **Local and Regional Collaborative Environmental Policy, Planning and Management Initiatives to Protect The Great Lakes**
Room 3018, Lake Ontario
- 10:50 a.m. - 12:10 p.m. **Ecological Trends in Great Lakes Wetlands**
Room 3020, Lake St. Clair
- 1:10 p.m. - 5:50 p.m. **Aquatic Invasive Species in the Great Lakes Region**
Room 2582, Lake Superior
- 1:10 p.m. - 5:50 p.m. **Upper Great Lakes Food Webs, Conditions, and Assessments.**
Room 2584, Lake Huron
- 1:10 p.m. - 4:50 p.m. **Carbon Cycling in the Laurentian Great Lakes**
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- 1:10 p.m. - 3:10 p.m. **Sources, Exposures, Remediation and Toxicity of PCB Congeners and their Breakdown Products**
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Room 3018, Lake Ontario
- 1:10 p.m. - 3:10 p.m. **Ecological Trends in Great Lakes Wetlands**
Room 3020, Lake St. Clair
- 3:30 p.m. - 5:50 p.m. **Toxic Chemicals in Great Lakes Air**
Room 2591, Lake Erie
- 3:30 p.m. - 5:30 p.m. **Great Lakes Science for Everyone**
Room 3020, Lake St. Clair
- 6:00p.m. – 8:00 p.m. **Poster Show: Student Union Auditorium/Ballroom 3rd floor**

Wednesday, May 20

- 8:30 a.m. - 12:10 p.m. **Aquatic Invasive Species in the Great Lakes Region**
Room 2582, Lake Superior
- 8:30 a.m. - 10:10 a.m. **Upper Great Lakes Food Webs, Conditions, and Assessments.**
Room 2584, Lake Huron
- 8:30 a.m. - 12:10 p.m. **Physical and Chemical Drivers of Great Lakes Fish Ecology**
Room 2592, Lake Michigan
- 8:30 a.m. - 12:10 p.m. **Toxic Chemicals in Great Lakes Air**
Room 2591, Lake Erie
- 8:30 a.m. - 12:10 p.m. **Physical Limnology and Physical-Chemical-Biological Coupling in Lakes**
Room 2520, Ingman Room
- 8:30 a.m. - 10:10 a.m. **Satellite Monitoring of Great Lakes for Cyanobacteria Blooms**
Room 3018, Lake Ontario
- 8:30 a.m. - 12:10 p.m. **Watershed Restoration in the Maumee Basin**
Room 3020, Lake St. Clair
- 8:30 a.m. - 12:10 p.m. **Quaternary Geology and Sand Dune History of the Great Lakes**
Room 3016, St. Lawrence River
- 10:30 a.m.-12:10 p.m. **Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes**
Room 2584, Lake Huron
- 10:30 a.m.-12:10 p.m. **The Muskegon River Mega Model: Integrating Changes in Land Use, Climate, Hydrology and Fish Populations**
Room 3018, Lake Ontario
- 1:30 p.m. - 5:50 p.m. **Challenges to the Ecological Integrity of the Lake Ontario Ecosystem: Shoreline, Nearshore, and Offshore Dynamics**
Room 2582, Lake Superior
- 1:30 p.m. - 5:10 p.m. **Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes**
Room 2584, Lake Huron
- 1:30 p.m. - 3:30 p.m. **Physical and Chemical Drivers of Great Lakes Fish Ecology**
Room 2592, Lake Michigan
- 1:30 p.m. - 5:30 p.m. **Nearshore and Offshore Changes in Great Lakes Food Webs: Mechanisms and forecasting**
Room 2591, Lake Erie
- 1:30 p.m. - 5:10 p.m. **Physical Limnology and Physical-Chemical-Biological Coupling in Lakes**
Room 2520, Ingman Room
- 1:30 p.m. - 4:30 p.m. **The Muskegon River Mega Model: Integrating Changes in Land Use, Climate, Hydrology and Fish Populations**
Room 3018, Lake Ontario
- 1:30 p.m. - 5:30 p.m. **Environmental Education, Training, and Certification in the Great Lakes Region**
Room 3020, Lake St. Clair
- 1:30 p.m. - 5:10 p.m. **VHS in the Great Lakes: Impacts and Outlooks**
Room 3016, St. Lawrence River

Thursday, May 21

- 8:30 a.m. - 10:50 a.m. **Challenges to the Ecological Integrity of the Lake Ontario Ecosystem: Shoreline, Nearshore, and Offshore Dynamics**
Room 2582, Lake Superior
- 8:30 a.m. - 10:50 a.m. **Building Toward a Science Strategy for the Great Lakes Basin under the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement**
Room 2584, Lake Huron
- 8:30 a.m. - 10:50 a.m. **Saginaw Bay: The Continuing Impact of Multiple Ecosystem Stressors**
Room 2592, Lake Michigan
- 8:30 a.m. - 10:50 a.m. **Healthy Large Lakes: Fisheries Management, Policies, and Perceptions**
Room 2591, Lake Erie
- 8:30 a.m. - 10:50 a.m. **Climate Variability and Its Impacts on Environment and Ecosystems in the Great Lakes Region**
Room 2520, Ingman Room
- 8:30 a.m. - 10:50 a.m. **Benthic populations in the Great Lakes: Temporal Trends and Ecology**
Room 3018, Lake Ontario
- 8:30 a.m. - 10:50 a.m. **COSEE School for Scientists**
Room 3020, Lake St. Clair
- 8:30 a.m. - 10:50 a.m. **History, Ecology, and Management of Fisheries in Great Lakes Connecting Channels**
Room 3016, St. Lawrence River
- 1:00 p.m. - 2:20 p.m. **Challenges to the Ecological Integrity of the Lake Ontario Ecosystem: Shoreline, Nearshore, and Offshore Dynamics**
Room 2582, Lake Superior
- 1:00 p.m. - 3:00 p.m. **Building Toward a Science Strategy for the Great Lakes Basin under the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement**
Room 2584, Lake Huron
- 1:00 p.m. - 5:40 p.m. **Nuisance Algae in the Great Lakes**
Room 2592, Lake Michigan
- 1:00 p.m. - 2:40 p.m. **Healthy Large Lakes: Fisheries Management, Policies, and Perceptions**
Room 2591, Lake Erie
- 1:00 p.m. - 4:20 p.m. **Climate Variability and Its Impacts on Environment and Ecosystems in the Great Lakes Region**
Room 2520, Ingman Room
- 1:00 p.m. - 3:00 p.m. **Benthic populations in the Great Lakes: Temporal Trends and Ecology**
Room 3018, Lake Ontario
- 1:00 p.m. - 3:00 p.m. **History, Ecology, and Management of Fisheries in Great Lakes Connecting Channels**
Room 3016, St. Lawrence River

Thursday, May 21, Continued

- 1:20 p.m. - 5:00 p.m. **Field Stations and Institutes in the Laurentian Great Lakes and the St. Lawrence River**
Room 3020, Lake St. Clair
- 3:20 p.m. - 4:40 p.m. **General Topics**
Room 2582, Lake Superior
- 3:20 p.m. - 5:20 p.m. **Examining the Benefits and Risks of Consuming Great Lakes Fish.**
Room 2584, Lake Huron
- 3:20 p.m. - 5:00 p.m. **Great Lakes - St. Lawrence River Basin Water Resources Compact**
Room 2591, Lake Erie
- 3:20 p.m. - 5:20 p.m. **COSEE School for Scientists**
Room 3018, Lake Ontario

Friday, May 22

- 8:30 a.m. - 11:50 a.m. **Emerging Contaminants in the Environment**
Room 2582, Lake Superior
- 8:30 a.m. - 11:50 a.m. **Bioeconomics of Invasive Species in the Great Lakes Region**
Room 2584, Lake Huron
- 8:30 a.m. - 11:10 a.m. **Nuisance Algae in the Great Lakes**
Room 2592, Lake Michigan
- 8:30 a.m. - 11:30 a.m. **Fish Consumption Advisories in the Great Lakes: Bridging Contaminants and Human Health**
Room 2591, Lake Erie
- 8:30 a.m. - 12:50 p.m. **Fisheries and Fish Ecology**
Room 2520, Ingman Room
- 8:30 a.m. - 2:30 p.m. **Education and Outreach**
Room 3018, Lake Ontario
- 8:30 a.m. - 12:10 p.m. **Causes of Injury to Ecosystems and Environmental Health Across the Great Lakes**
Room 3020, Lake St. Clair

Sessions by Day

Tuesday, May 19

9:00-10:30 a.m.	Welcome and Plenary , Doermann Theatre, University Hall Dr. Howard Frumkin , Director, National Center for Environmental Health, Agency for Toxic Substances and Disease Registry
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	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Physical Limnology and Physical-Chemical-Biological Coupling in Lakes <i>Co-Chairs: Dmitry Beletsky, Chin Wu, and George Arhonditsis</i>	Aquatic Invasive Species in the Great Lakes Region <i>Co-Chairs: Alexander Karatayev, Lyubov Burlakova, and Christopher Pennuto</i>	Upper Great Lakes Food Webs, Conditions, and Assessments. <i>Co-Chairs: Peder Yurista, Jeff Schaeffer, and Jim Johnson</i>	Sources, Exposures, Remediation and Toxicity of PCB Congeners and their Breakdown Products <i>Co-Chairs: Keri Hornbuckle and Jerry Schnoor</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
10:50 a.m.	<u>D.J. Schwab</u> <i>et al.</i> Measured and Modeled Flows in the Grand River, Michigan	<u>T.P. Diggins</u> <i>et al.</i> Invasive Species and a Fundamental Reordering of Spatial Dynamics in the Nearshore Benthos of the North American Great Lakes	<u>J.R. Kelly</u> <i>et al.</i> Big Numbers for the Big Lake: A Lower Food Web Assessment of Lake Superior (2004-2006)	<u>C.L. Persoon</u> and K.C. Hornbuckle Airborne PCB Congeners in Chicago and Cleveland
11:10 a.m.	<u>M. Xia</u> <i>et al.</i> The Hydrodynamic Modeling of Grand Haven River using Finite Volume Coastal Ocean Model (FVCOM)	<u>L.M. Campbell</u> <i>et al.</i> Non-indigenous species and contaminant transfer	<u>A.E. Gamble</u> <i>et al.</i> Trophic connections in the nearshore and offshore food webs of Lake Superior: a diet analysis approach	<u>D. Hu</u> and K.C. Hornbuckle PCBs in commercial paint pigments
11:30 a.m.	<u>S. Ahmed</u> <i>et al.</i> Hydrodynamic Simulations of Stratified Flow in Lake Michigan Using SUNTANS	<u>R.G. Ahern</u> <i>et al.</i> Spread of exotic plants in the landscape: the role of time, biological traits, and history of invasiveness	<u>T.F. Nalepa</u> and D.L. Fanslow Recent Trends in Benthic Macroinvertebrate Populations in Lake Huron	<u>M.L. Diamond</u> <i>et al.</i> Continuing Sources of PCBs: The Significance of Building Sealants
11:50 a.m.	<u>D. Beletsky</u> <i>et al.</i> Climatological circulation in Lake Michigan	<u>S.E. Mastitsky</u> <i>et al.</i> Freshwater Invertebrate Invaders as Vectors of the Spread of Parasites	<u>P.M. Yurista</u> <i>et al.</i> Spatial patterns in water quality and plankton for the US waters of nearshore Lake Huron, 2007	<u>A. Martinez</u> <i>et al.</i> Fate of PCB Congeners in an Industrial Harbor of Lake Michigan
12:10 p.m.	LUNCH			

Tuesday, May 19

Welcome and Plenary , Doermann Theatre, University Hall Dr. Howard Frumkin , Director, National Center for Environmental Health, Agency for Toxic Substances and Disease Registry	9:00-10:30 a.m.
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<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
Carbon Cycling in the Laurentian Great Lakes <i>Co-Chairs: Galen McKinley and James Cotner</i>		Local and Regional Collaborative Environmental Policy, Planning and Management Initiatives to Protect The Great Lakes <i>Chair: Wendy Kellogg</i>	Ecological Trends in Great Lakes Wetlands <i>Chair: Martin Stapanian</i>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<u>R.W. Sterner</u> In situ measured primary production in Lake Superior		<u>R.G. Ahern et al.</u> The Michigan Invasive Species Information Network (MISIN): engaging stakeholders in invasive species detection and management	<u>S.C. Murphy et al.</u> YOY growth and mortality for warm and coolwater fish residing in small coastal embayments of Lake Ontario	10:50 a.m.
<u>B.N. Seegers</u> and R.W. Sterner Lake Superior Deep Chlorophyll Maximum Related to Zooplankton Grazing		<u>B.D. Herman</u> ** CANCELLED ** Restoring Great Lakes Habitat: Lessons Learned from the Great Lakes Habitat Initiative	<u>M. Micacchion</u> Evaluating the Amphibian Communities of Urban Wetlands Using Level 1, 2 and 3 Wetland Assessment Tools	11:10 a.m.
<u>J.B. Cotner</u> and B.A. Biddanda Respiration in the headwaters of the Laurentian Great Lakes (Superior and Michigan): Insights into the Carbon Cycle		<u>M.M. Seymour et al.</u> Landscape-level Conservation of Great Lakes Island Biodiversity	<u>J.M. Gilbert et al.</u> Restoring Rondeau Bay's Ecological Integrity: changing the status quo	11:30 a.m.
<u>W.J. Olson</u> and H.A. Bootsma An in-depth look into the metabolic dynamism of the nearshore region of a Great Lake		<u>C. Miller et al.</u> Real-Time System Optimization for Sustainable Water Transmission and Distribution	<u>J.M. Gilbert et al.</u> Investigating control options for the Invasive Alien Species <i>Phragmites australis subsp. australis</i> (common reed) in sensitive Lake Erie coastal habitats	11:50 a.m.
LUNCH				12:10 p.m.

Tuesday, May 19

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Physical Limnology and Physical-Chemical-Biological Coupling in Lakes <i>(continued)</i> Co-Chairs: Dmitry Beletsky, Chin Wu, and George Arhonditsis	Aquatic Invasive Species in the Great Lakes Region <i>(continued)</i> Co-Chairs: Alexander Karatayev, Lyubov Burlakova, and Christopher Pennuto	Upper Great Lakes Food Webs, Conditions, and Assessments <i>(continued)</i> Co-Chairs: Peder Yurista, Jeff Schaeffer, and Jim Johnson	Sources, Exposures, Remediation and Toxicity of PCB Congeners and their Breakdown Products <i>(continued)</i> Co-Chairs: Keri Hornbuckle and Jerry Schnoor
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
1:10 p.m.	<u>N. Nekouee et al.</u> 3D Numerical Prediction of the Grand River Plume	<u>J.F. Alexander</u> Preventing invasions with public policy	<u>J. Gerlofsma</u> and K.L. Bowen Population Dynamics of Zooplankton and Rotifers in Lake Huron in 2007	<u>D.J. Jude et al.</u> PCBs Concentrations in Saginaw River Walleyes and Their Prey: 1990 vs. 2007
1:30 p.m.	<u>N. Hawley et al.</u> Under-ice Physical Conditions in Lake Erie During the Winter of 2004-2005	<u>W.J. Bolen</u> and J.C. Schardt Invasive Species Rapid Response	<u>R.P. Barbiero et al.</u> Recent Changes in the Lower Food Web of Lake Huron	<u>R.F. Marek et al.</u> A Comparison of Blood PCB Concentrations in Industrial and Rural Communities: East Chicago, IL and Columbus Junction, IA
1:50 p.m.	<u>R.R. Yerubandi et al.</u> Hydrodynamic Modelling of Lake Ontario: An Intercomparison of three hydrodynamic models	<u>K.M. Glassner-Shwayder et al.</u> Advancing Aquatic Invasive Species Management of Organisms in Trade in the Great Lakes Region	<u>R.P. Barbiero et al.</u> Recent shifts in the zooplankton community of Lake Michigan	<u>I. Korwel</u> Disposition and toxicity of PCB atropisomers - from animal model to human
2:10 p.m.	<u>M. Mohamed et al.</u> Interaction of physical processes and river discharge on nearshore regions of Lake Huron	<u>R.A. Eberhardt</u> The Lake Superior Aquatic Invasive Species Complete Prevention Plan	<u>K.L. Bowen et al.</u> Population Dynamics, Growth and Condition of <i>Mysis relicta</i> in Lake Huron	<u>Y. Zhu et al.</u> Polychlorinated Biphenyl (PCB)-Induced Oxidative Stress Mediates Cytotoxicity in Human Prostate Epithelial Cells
2:30 p.m.	<u>E.J. Anderson et al.</u> 3D Hydrodynamic and Hydraulic Modeling of the Huron-Erie Corridor: Operational Forecasting System and Current Comparisons	<u>S.A. Adlerstein et al.</u> Distribution of sea lamprey larval in Lower Michigan Peninsula tributaries based on habitat	<u>J.L. Mida et al.</u> Condition of the Opossum Shrimp (<i>Mysis relicta</i>) in Lakes Michigan and Huron, 2007: Preliminary Results of Lipid Analyses	<u>R.E. Meggo</u> and J.L. Schnoor Plant-Assisted Rhizosphere Mineralization of PCB Congeners
2:50 p.m.	<u>A. Martynov et al.</u> Coupling of the Canadian Regional Climate Model (CRCM) with 1D lake models: application to the Great Lakes	<u>N. Dong</u> and C.M. Pennuto Effects of Experience and Age on Predator Avoidance Behavior of Crayfish in Lake Erie	<u>E.J. Isaac et al.</u> Selection of <i>Mysis relicta</i> as Prey by the Lake Superior Fish Community	<u>P.A. Correa et al.</u> Impact of single PCB Congeners on a Soil Bacterial Community and the Expression of Biphenyl Dioxygenase Genes
3:10 p.m.	BREAK			

Tuesday, May 19

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Carbon Cycling in the Laurentian Great Lakes (continued) Co-Chairs: Galen McKinley and James Cotner</p>		<p>Local and Regional Collaborative Environmental Policy, Planning and Management Initiatives to Protect The Great Lakes (continued) Chair: Wendy Kellogg</p>	<p>Ecological Trends in Great Lakes Wetlands (continued) Chair: Martin Stapanian</p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>W.J. Edwards et al.</u> Assessment of metabolism in a coupled nearshore-offshore ecosystem in Lake Erie</p>		<p><u>M. Maitre et al.</u> The Consumptive Use Conundrum: Calculating Future Consumptive Use Related to Intra-basin Transfer in York Region</p>	<p><u>P.F. Lee</u> Re-introduction of Southern wild rice, <i>Zizania aquatica</i> L., into Cootes Paradise, Lake Ontario</p>	1:10 p.m.
<p><u>N. Atilla et al.</u> Observed dynamics of surface pCO₂ in Lake Superior</p>		<p><u>L. Zhang</u> and C. Weisener The past, current and future of water quality in Yangtze River</p>	<p><u>M.A. Stapanian et al.</u> Soil Chemistry of Natural and Constructed Wetlands: A Multivariate Approach for Determining Biotic Integrity</p>	1:30 p.m.
<p><u>N.R. Urban et al.</u> Field Measurements of CO₂ in and above the Great Lakes: the Case for Net Emission of CO₂</p>		<p><u>P.G.R. Smith et al.</u> Progress in Adoption of Beneficial Management Practices and Environmental Farm Plans in the Great Lakes Basin 2005-2008</p>	<p><u>K. Tloczynski</u> and J.A. Wolin Urbanization and Wetland Soil Phosphorus Retention in the Cuyahoga River Watershed</p>	1:50 p.m.
<p><u>G.A. McKinley et al.</u> The magnitude and mechanisms of the CO₂ flux from Lake Superior</p>		<p><u>R.K. Norton et al.</u> Lake Level Dynamics and the Ordinary High Water Mark on Lake Michigan Shores: Implications for Shoreline Management Policy and Law</p>	<p><u>J.P. Watton</u> and G.P. Grabas Developing a Method to Monitor Vegetation Community Dynamics in Great Lakes Coastal Wetlands</p>	2:10 p.m.
<p><u>P.K. Ziqah et al.</u> Sources and Cycling of Carbon in Lake Superior: Insights from $\Delta^{14}\text{C}$</p>		<p><u>G.S. Whitelaw</u> and P.F. Eagles Regional environmental land use planning activities benefitting Great Lakes Protection: Case studies of the Niagara Escarpment and Oak Ridges Moraine, Ontario Canada</p>	<p><u>S.J. Choc et al.</u> Water Quality Trends and Models for the Design of Wetlands Used to Treat Drainage Water Entering Lake Erie</p>	2:30 p.m.
<p><u>H.A. Bootsma et al.</u> Influence of a Large Rain Event on Lake-Atmosphere Carbon Dioxide Exchange in Lake Michigan</p>		<p>Discussion</p>	<p><u>G.P. Grabas</u> Monitoring Coastal Wetlands in a Great Lakes Area of Concern: Application of a Regional Framework</p>	2:50 p.m.
BREAK				3:10 p.m.

Tuesday, May 19

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Physical Limnology and Physical-Chemical-Biological Coupling in Lakes (<i>continued</i>) <i>Co-Chairs: Dmitry Beletsky, Chin Wu, and George Arhonditsis</i>	Aquatic Invasive Species in the Great Lakes Region (<i>continued</i>) <i>Co-Chairs: Alexander Karatayev, Lyubov Burlakova, and Christopher Pennuto</i>	Upper Great Lakes Food Webs, Conditions, and Assessments (<i>continued</i>) <i>Co-Chairs: Peder Yurista, Jeff Schaeffer, and Jim Johnson</i>	Toxic Chemicals in Great Lakes Air <i>Co-Chairs: Elisabeth Galarneau and Thomas Holsen</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
3:30 p.m.	<u>Q. Liao et al.</u> In Situ Measurements of Sediment Resuspension Using a Underwater Miniature Particle Image Velocimeter (UWMPIV)	<u>M.J. Yuille et al.</u> <i>Hemimysis anomala</i> in Lake Ontario – distribution and food web effects		<u>S.G. Gewurtz et al.</u> Trends and Current Status of Contaminants in Fish from the St. Clair River/Lake Corridor
3:50 p.m.	<u>Y.T. Lin et al.</u> A Combined Geophysical Technique to Monitor Changes of Nearshore Environment in Great Lakes	<u>B.T. Young</u> and C.M. Pennuto The Role of Environmental Context and Mutual Predation in Amphipod Invasion Success in the Great Lakes	<u>J.E. Johnson</u> and J. Schaeffer Alewife decline causes recruitment limitation in Lake Huron Chinook salmon	<u>M.S. Milligan et al.</u> Relationships among Legacy and Emerging Contaminant Concentrations in Great Lakes Fish Between 1999 and 2005 and Evaluation of Site-specific Differences
4:10 p.m.	<u>Q. Dai et al.</u> Estimating Over-lake Precipitation in the Great Lakes Combining Radar and Rain Gages	<u>C.A. Stepien</u> and J.E. Brown Invasion Genetics of the Round Goby: Founding Sources, Spatial Patterns, and Temporal Changes	<u>D.M. Warner et al.</u> Abundance and distribution of native and non-native species in the changing pelagia of Lakes Huron and Michigan	<u>T.R. Redder et al.</u> Development and Application of a Multi-media Screening Model for Chemicals of Emerging Concern in the Great Lakes Basin (GLMOD)
4:30 p.m.	<u>E. Eglite et al.</u> Circulation Dynamics of St. Albans Bay, Lake Champlain	<u>L.D. Corkum et al.</u> Acoustic, Olfactory and Visual Signals by Parental Males Result in Successful Spawning in the Invasive Round Goby	<u>N.T. Barton et al.</u> Comparing Lake Trout and Lake Whitefish Selection of Microhabitat Spawning Sites: Implications for Native Fish Rehabilitation	<u>R. Rossmann</u> Estimation of a Historic Mercury Load Function for Lake Michigan using Dated Sediment Cores
4:50 p.m.	<u>K.L. Hunkins et al.</u> A Simple Model of Wind-Driven Lake Circulation Interprets Lagrangian Drifter Observations	<u>S.M. Rupprecht</u> and C.M. Pennuto Assessing the swimming performance of the round goby (<i>Neogobius melanostomus</i> Pallas 1814) and its implications for upstream migration in tributary streams and rivers	<u>R.M. Claramunt</u> Evidence of a Remnant Cisco Stock in Grand Traverse Bay, Lake Michigan	<u>G.W. Stupple et al.</u> Monitoring atmospheric mercury and surface accumulation along an urban/rural gradient in Ontario, Canada

Tuesday, May 19

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
Carbon Cycling in the Laurentian Great Lakes <i>(continued)</i> <i>Co-Chairs: Galen McKinley and James Cotner</i>		Local and Regional Collaborative Environmental Policy, Planning and Management Initiatives to Protect The Great Lakes <i>(continued)</i> <i>Chair: Wendy Kellogg</i>	Great Lakes Science for Everyone <i>Chair: Rochelle Sturtevant</i>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<u>J.M. Mwangi et al.</u> Eddy Covariance Measurements of CO ₂ Fluxes Above Lake Superior		<u>A.J. McCammon</u> Reach by Reach : Ontario's First Community-led Watershed Regeneration Plan	<u>T.G. Fisher</u> Glacial Evolution of the Great Lakes Region	3:30 p.m.
<u>J.H. Fillingham et al.</u> Modeling waves and their influence on air-water gas exchange in Lake Michigan		<u>V.I. Pebbles and B.A. Pearson</u> Great Lakes State and Provincial Smart Growth Trends	<u>B.M. Lofgren</u> Building a Bridge in the Face of Uncertainty: Connecting Climate Change Science with Public Needs	3:50 p.m.
<u>H.J. Carrick et al.</u> Is There a Link Between Seasonal Phytoplankton Dynamics and Hypoxia in Lake Erie?		<u>C.M. Riddle</u> The Lake Erie Balanced Growth Program – Overview	<u>J.G. Read</u> Spawning Habitat for our Key Native Fish	4:10 p.m.
<u>S.K. Oni et al.</u> Effect of land use changes on dissolved organic carbon fluxes in Lake Simcoe watershed		<u>K. Date</u> The Lake Erie Balanced Growth Program – Best Local Land Use Practices	<u>D.R. Kashian et al.</u> A New Approach for Addressing Fish Consumption Advisories in the Great Lakes	4:30 p.m.
Discussion		<u>W.A. Kellogg</u> A Collaborative Governance Network for Land Use Decision Making in Lake Erie's Tributary Rivers: Ohio's Balanced Growth Program	<u>R.A. Sturtevant</u> Invasive Species Information Resources	4:50 p.m.

Tuesday, May 19

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Physical Limnology and Physical-Chemical-Biological Coupling in Lakes (<i>continued</i>) <i>Co-Chairs: Dmitry Beletsky, Chin Wu, and George Arhonditsis</i>	Aquatic Invasive Species in the Great Lakes Region (<i>continued</i>) <i>Co-Chairs: Alexander Karatayev, Lyubov Burlakova, and Christopher Pennuto</i>	Upper Great Lakes Food Webs, Conditions, and Assessments (<i>continued</i>) <i>Co-Chairs: Peder Yurista, Jeff Schaeffer, and Jim Johnson</i>	Toxic Chemicals in Great Lakes Air (<i>continued</i>) <i>Co-Chairs: Elisabeth Galameau and Thomas Holsen</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
5:10 p.m.	<u>W. Liu and K.G. Lamb</u> Poincare Waves and Kelvin Waves in a Circular Lake	<u>C.J. Houghton and J. Janssen</u> Change in habitat selection by juvenile yellow perch in response to the round goby invasion	<u>O.T. Gorman</u> The demersal fish community of offshore waters of Lake Superior: stability in the midst of change in nearshore communities?	<u>L.E. Gratz et al.</u> Atmospheric Mercury Transport Across Southern Lake Michigan: Influence from the Chicago/Gary Urban Area
5:30 p.m.	<u>Y.F. Hsieh et al.</u> Boundary mixing in the thermocline of a stratified lake	<u>P.E. Hartzog et al.</u> Activity monitoring of round goby (<i>Apollonia melanostomus</i>) in Lake Erie	<u>J. Pouloupoulos and L.M. Campbell</u> Can archived museum ichthyology collections be used to determine shifts in historical food web structure over time? Evidence from Lakes Nipigon and Simcoe, Ontario	<u>E. Galameau et al.</u> Air Quality Modelling of PAHs in the Great Lakes Basin
6 - 8 p.m.	Poster Show, Student Union Auditorium/Ballroom, 3rd floor			

Tuesday, May 19

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
		Local and Regional Collaborative Environmental Policy, Planning and Management Initiatives to Protect The Great Lakes <i>(continued)</i> <i>Chair: Wendy Kellogg</i>	Great Lakes Science for Everyone <i>(continued)</i> <i>Chair: Rochelle Sturtevant</i>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
		<u>E.S. Jensen</u> <i>et al.</i> Tracking Federal Legislative Activities to Advance Priorities for Great Lakes Restoration and Protection	<u>S.T. Joseph</u> Great Lakes and Human Health: Communicating Water Quality	5:10 p.m.
		<u>G. Krantzberg</u> and J. Manno Renovation and Innovation; It's Time for the Great Lakes Regime to Respond.		5:30 p.m.
Poster Show, Student Union Auditorium/Ballroom, 3rd floor				6 - 8 p.m.

Wednesday, May 20

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Physical Limnology and Physical-Chemical-Biological Coupling in Lakes <i>(continued)</i> <i>Co-Chairs: Dmitry Beletsky, Chin Wu, and George Arhonditsis</i>	Aquatic Invasive Species in the Great Lakes Region <i>(continued)</i> <i>Co-Chairs: Alexander Karatayev, Lyubov Burlakova, and Christopher Pennuto</i>	Upper Great Lakes Food Webs, Conditions, and Assessments <i>(continued)</i> <i>Co-Chairs: Peder Yurista, Jeff Schaeffer, and Jim Johnson</i>	Toxic Chemicals in Great Lakes Air <i>(continued)</i> <i>Co-Chairs: Elisabeth Galarneau and Thomas Holten</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
8:30 a.m.	<u>C.H. Wu</u> and J.D. Anderson Role of High Frequency Water Level Fluctuations on Bed Shear Stress in the Sheboygan River	<u>A.Y. Karatayev</u> <i>et al.</i> Invasion paradox: why do less invasive <i>Dreissena rostriformis bugensis</i> outcompete <i>D. polymorpha</i> ?	<u>G.J. Warren</u> and A. Dove Long and Short-Term Nutrient Trends in Lake Huron	<u>M.D. Rowe</u> <i>et al.</i> Application of an Internal Boundary Layer Transport Exchange Model to Micrometeorological Measurements of Hexachlorobenzene Gas Transfer in Lake Superior
8:50 a.m.	<u>J.D. Lenters</u> <i>et al.</i> Recent Enhancement of Surface Water Temperature Trends and Evaporation in a Northern Wisconsin Lake: Response to a Sunnier Climate?	<u>K.L. Schulz</u> and C.M. Mayer Mussel Power and Oligotrophication: Integrating Experiments and Field Observations to Isolate Mechanisms Changing Lake Ecosystem Properties	<u>S.C. Chapra</u> and D.M. Dolan Updating Great Lakes Total Phosphorus Mass Balances	<u>T.F. Bidleman</u> <i>et al.</i> Exchange of metolachlor between Great Lakes air and water
9:10 a.m.	<u>P. Pernica</u> and M.G. Wells Wind driven mixing of the surface waters of Lake Opeongo, Ontario	<u>J.E. Brown</u> <i>et al.</i> Population Genetic History of the Dreissenid Mussel: Invasion and Expansion Across North America	<u>C.P. McDonald</u> <i>et al.</i> Kinetic modeling of the nitrogen cycle in Lake Superior	<u>A. Salamova</u> and R.A. Hites Persistent Organic Pollutants in Tree Bark
9:30 a.m.	<u>A. Wuest</u> and M. Schmid Birth, rapid development and sudden death of a distinct double-diffusive staircase in Lake Nyos	<u>S.M. Peyer</u> <i>et al.</i> Plasticity in Shell Shape and Byssal Thread Synthesis Rate: Do they Contribute to the Displacement of Zebra by Quagga Mussels?	<u>R.E. Hicks</u> <i>et al.</i> Abundance and Diversity of Planktonic Ammonia-Oxidizing Archaea in Lake Superior	<u>Y. Su</u> <i>et al.</i> Air Concentrations of Polybrominated Diphenyl Ethers (PBDEs) in 2002-2004 at a Rural Site in the Great Lakes Region: Comparison to Measurements in the Arctic
9:50 a.m.	<u>T.H. Huttula</u> <i>et al.</i> *** CANCELLED *** Coupling a 3D Hydrodynamic Lake Model to a Catchment Model: Case Lake Säskylän Pyhäjärvi	<u>J.C. Hermanson</u> <i>et al.</i> Using the Inverse Problem Methodology in Biology	<u>A.M. Hanson</u> <i>et al.</i> Viruses in Lake Michigan and a Eutrophic Pond: A Seasonal Study of the Biological Factors Controlling Viral Abundance Across Three Freshwater Locations	<u>H.D. Choi</u> <i>et al.</i> Polychlorinated Biphenyls (PCB) Air Concentrations in the Lake Ontario Region: Trends and Potential Sources
10:10 a.m.	BREAK			

Wednesday, May 20

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Physical and Chemical Drivers of Great Lakes Fish Ecology <i>Co-Chairs: Stuart Ludsin, Christine Mayer, and Tomas Hook</i></p>	<p>Quaternary Geology and Sand Dune History of the Great Lakes <i>Co-Chairs: Timothy Fisher and John Johnston</i></p>	<p>Satellite Monitoring of Great Lakes for Cyanobacteria Blooms <i>Chair: Robert Vincent</i></p>	<p>Watershed Restoration in the Maumee Basin <i>Chair: Patrick Lawrence</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>P.W. Simonin et al.</u> Rainbow smelt and alewife distribution dynamics in relation to temperature and light in Lake Champlain</p>	<p><u>D.E. Krantz et al.</u> Upper Quaternary Stratigraphy and Post-Glacial History of Western Lake Erie</p>	<p><u>A. Roerdink and J.W. Kramer</u> Separation and analysis of algal pigments by high-performance liquid chromatography with fluorescence detection</p>	<p><u>M.M. Flanagan</u> Watershed Restoration in the Maumee Basin</p>	8:30 a.m.
<p><u>B.T. Boscarino et al.</u> Differences in light preferences of juvenile and adult mysid shrimp: Implications for alewife feeding ecology</p>	<p><u>M. Campbell et al.</u> The Evolution of the Lake Warren Coastline in the Oak Openings Region in Northwest Ohio, USA</p>	<p><u>K.V. Nedunuri et al.</u> Causal Modeling of Growth of Cyanobacteria in Lake Erie for Phycocyanin Detection from LANDSAT TM Data</p>	<p><u>P.L. Lawrence</u> Projects in the Maumee Area of Concern: An Overview of Partners for Clean Streams</p>	8:50 a.m.
<p><u>B.J. Rook et al.</u> Cisco Recruitment Dynamics in Lake Superior, 1978-2005</p>	<p><u>A.J. Breckenridge et al.</u> A 9,500 cal BP Rapid Lake Level Rise During the Lake Minong Phase of Lake Superior as Evidenced by Sediments from Fenton Lake, Ontario</p>	<p><u>R.H. Becker et al.</u> Using MODIS to Map Cyanobacteria in Lake Erie</p>	<p><u>C.A. Blair</u> Highland Park Dam Decommissioning and Riparian Project for Swan Creek</p>	9:10 a.m.
<p><u>J.L. Jonas et al.</u> Simulating survival of lake trout eggs under various climate and predation scenarios</p>	<p><u>W.L. Loope et al.</u> Mid-Holocene Dune Stabilization in Interior Eastern Upper Michigan: a response to biogeomorphic or physical agents?</p>	<p><u>G.K. McCullough et al.</u> Discrimination of cyanobacteria in a highly eutrophic great lake, Lake Winnipeg, Manitoba, Canada</p>	<p><u>J. Kusnier</u> Wetland and Riparian Inventory and Restoration Plans for Swan Creek and Ottawa River</p>	9:30 a.m.
<p><u>S.M. Creque et al.</u> Delineation of sediment type and composition in southwestern Lake Michigan and its relationship to spawning-site preference of yellow perch</p>	<p><u>E.C. Hansen et al.</u> Quasi-periodic cycles in sand abundances in peat from a raised bog in Allegan County, Michigan: an indication of cycles in Great Lakes storminess?</p>	<p><u>R.K. Vincent</u> The 2008 Cyanobacteria Bloom in the Western Basin of Lake Erie As Monitored by LANDSAT TM</p>	<p><u>K. Patterson</u> Ecological and Human Health Risk Assessment for Duck and Otter Creeks</p>	9:50 a.m.
BREAK				10:10 a.m.

Wednesday, May 20

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Physical Limnology and Biological-Chemical-Biological Coupling in Lakes (continued) <i>Co-Chairs: Dmitry Beletsky, Chin Wu, and George Arhonditsis</i>	Aquatic Invasive Species in the Great Lakes Region (continued) <i>Co-Chairs: Alexander Karatayev, Lyubov Burlakova, and Christopher Pennuto</i>	Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes <i>Co-Chairs: George Leshkevich and Robert Shuchman</i>	Toxic Chemicals in Great Lakes Air (continued) <i>Co-Chairs: Elisabeth Galarneau and Thomas Holsen</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
10:30 a.m.	<u>S.A. Bocaniov et al.</u> Plankton Metabolic Balance and Physical Forcing in Lakes: Insights from Stable Oxygen Isotopes	<u>S.N. Higgins and M.J. Vander Zanden</u> The Cascading Ecological Effects of Dreissenid Mussel Invasions on Lake and River Ecosystems	<u>D.M. O'Donnell et al.</u> Spectral Measurements of Absorption, Beam Attenuation and Backscattering Coefficients, and Remote Sensing Reflectance in Four Laurentian Great Lakes	<u>R.A. Hites et al.</u> Spatiotemporal Analyses of Integrated Atmospheric Deposition (IADN) Network Data
10:50 a.m.	<u>X.M. Zhang et al.</u> A Mercury Transport and Fate Model for Mass Budget Assessment of Mercury Cycling in Lake Michigan	<u>R. Naddafi et al.</u> Why is an invasive species more successful in some areas than others? A comparison of zebra mussel density in North American and European lakes	<u>M.G. Perkins et al.</u> Characterization and Cross-Sectional Analysis of Absorbing Components in Five Great Lakes	<u>T.G. Nettesheim et al.</u> Revisiting the Mauve Bible: Is the atmosphere still significant?
11:10 a.m.	<u>M.D. Kelly et al.</u> Historical Comparisons Concerning the Acidification of Ontario Lakes and Impacts on the Bioavailability of Mercury	<u>L.E. Burlakova et al.</u> <i>Limnoperna fortunei</i> : The new potential invader to the Great Lakes	<u>R.A. Shuchman et al.</u> Further Steps Towards a Chlorophyll, Dissolved Organic Carbon, and Suspended Mineral Remote Sensing Algorithm for All Laurentian Great Lakes	<u>E. Galarneau and T. Holsen</u> Making the Deposition of Airborne Toxic Substances a Threat of the Past: An Interactive Panel Discussion
11:30 a.m.	<u>G. Perhar et al.</u> The Role of Highly Unsaturated Fatty Acids in Aquatic Food Webs	<u>J.M. Watkins et al.</u> Evaluating the effect of quagga mussel (<i>Dreissena bugensis</i>) exposure on the native benthic amphipod <i>Diporeia spp</i>	<u>D.L. Witter et al.</u> Evaluating Strategies for Retrieving Lake Erie Chlorophyll <i>a</i> Concentrations from SeaWiFS Observations	Previous Presentation Continued
11:50 a.m.	<u>K.E. Simpson et al.</u> Temporal Scaling of Dissolved Oxygen Concentration in Fresh Water Environments	<u>A. Zaiko et al.</u> 200 Years with Zebra Mussel: Lessons Learned in the SE Baltic Sea	<u>A.K. Ali et al.</u> Multivariate Assessment of Remotely Derived Water Quality Parameters in the Western Basin of Lake Erie	Previous Presentation Continued
12:10 p.m.	IAGLR Business lunch, Student Union Auditorium/Ballroom, 3rd floor			

Wednesday, May 20

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Physical and Chemical Drivers of Great Lakes Fish Ecology <i>(continued)</i> <i>Co-Chairs: Stuart Ludsin, Christine Mayer, and Tomas Hook</i></p>	<p>Quaternary Geology and Sand Dune History of the Great Lakes <i>(continued)</i> <i>Co-Chairs: Timothy Fisher and John Johnston</i></p>	<p>The Muskegon River Mega Model: Integrating Changes in Land Use, Climate, Hydrology and Fish Populations <i>Co-Chairs: Mike Wiley and Jeffrey Tyler</i></p>	<p>Watershed Restoration in the Maumee Basin <i>(continued)</i> <i>Chair: Patrick Lawrence</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>J.R. Marentette et al.</u> Altered behaviour and physiology of round gobies (<i>Neogobius melanostomus</i>) living in contaminated areas</p>	<p><u>D. van Dijk</u> Lake Michigan Foredune Evolution and Short-Term Variations in Lake Level, Weather and Vegetation</p>	<p><u>M.J. Wiley et al.</u> A Multi-modeling approach to Great Lakes watershed planning: the Muskegon mega-model</p>	<p><u>K. Swartz</u> Green Stormwater Management in the Great Lakes: Toledo case study for building successful community stormwater projects</p>	10:30 a.m.
<p><u>Y. Wang and J. Janssen</u> Larval deepwater sculpin density and growth in relation to spring thermal bar dynamics</p>	<p><u>A.F. Arbogast et al.</u> Lake Michigan Coastal Dunes Are Complex: Two Models For Their Formation in the Northeastern Part of the Basin.</p>	<p><u>D.K. Ray and B.C. Pijanowski</u> Simulating Historical Landcover Maps for the Muskegon River Watershed</p>	<p><u>K. Chapman</u> Conservation Incentives in the Maumee Watershed</p>	10:50 a.m.
<p><u>K. Arend et al.</u> Comparing effects of hypolimnetic hypoxia on yellow perch and rainbow smelt habitat suitability in central Lake Erie</p>	<p><u>M. Castaneda et al.</u> Determining the Age for the Sand Point Cuspate Foreland, Pictured Rocks National Lakeshore, Michigan, USA</p>	<p><u>A.D. Kendall et al.</u> Simulating Impacts of Climate and Land Use Change on Regional Hydrology at Fine Resolution with the Integrated Landscape Hydrology Model (ILHM)</p>	<p><u>L. Clemens</u> Hydrology and Restoring Wetlands and Floodplain Forests: Improving Water Quality and Protecting Biodiversity in the Western Lake Erie Watershed by Naturalizing</p>	11:10 a.m.
<p><u>J.J. Roberts et al.</u> Sub-daily behavioral consequences of hypoxia for yellow perch in Lake Erie's central basin.</p>	<p><u>J.W. Johnston et al.</u> Late Holocene lake-level paleo-hydrograph for Lake Superior constructed from hundreds of ancient shorelines</p>	<p><u>B. Pijanowski et al.</u> Land Use Legacy</p>	<p><u>J.M. O'Meara et al.</u> *** CANCELLED *** Resource Restoration with in an Urban Watershed: Carpenter Lake Restoration And Nature Preserve Development</p>	11:30 a.m.
<p><u>M.M. Guzzo et al.</u> Seasonal and Spatial Variation in Stable Isotope and Fatty Acid Values in Seston from the Western Basin of Lake Erie</p>	<p><u>T.A. Thompson et al.</u> Strandplain evidence for late Holocene lake level and isostatic rebound in the Lake Huron basin</p>	<p><u>M.J. Wiley et al.</u> Nutrient and sediment load responses to land management and climate change in the Muskegon River watershed: a modeling assessment</p>	<p><u>F. Stamati et al.</u> Soil organic matter loss pathways in agricultural lands</p>	11:50 a.m.
IAGLR Business lunch, Student Union Auditorium/Ballroom, 3rd floor				12:10 p.m.

Wednesday, May 20

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Physical Limnology and Physical-Chemical-Biological Coupling in Lakes (<i>continued</i>) <i>Co-Chairs: Dmitry Beletsky, Chin Wu, and George Arhonditsis</i>	Challenges to the Ecological Integrity of the Lake Ontario Ecosystem: Shoreline, Nearshore, and Offshore Dynamics <i>Co-Chairs: Mohiuddin Munawar, Frederick Luckey, and Edward Mills</i>	Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes (<i>continued</i>) <i>Co-Chairs: George Leshkevich and Robert Shuchman</i>	Nearshore and Offshore Changes in Great Lakes Food Webs: Mechanisms and forecasting <i>Co-Chairs: Henry Vanderploeg and Joseph DePinto</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
1:30 p.m.	<u>J.J. Pauer et al.</u> SMALL SHOULD BE THE NEW BIG: High-resolution models with small segments have big advantages when modeling eutrophication in the Great Lakes	<u>J.C. Makarewicz et al.</u> Nearshore Nutrient Chemistry of Lake Ontario	<u>J.D. Lekki and G. Leshkevich</u> Airborne Monitoring of Microcystis Blooms in Lake Erie	<u>D.T. Kraus and G.A. White</u> Status and Assessment of Terrestrial Coastal Ecosystems in the Great Lakes
1:50 p.m.	<u>D.K. Rucinski et al.</u> Application and Comparison of 1D and 3D Lower Food Web Models for Lake Erie	<u>W.J. Edwards et al.</u> Lake Ontario Nearshore Nutrient Transport Study (LONNS): hydrodynamics of the nearshore region	<u>L.K. Jenkins</u> Remote Sensing-Based Object-Oriented Approach to Determine Frozen Lake Condition	<u>D.J. Sass et al.</u> Changes in the Great Lakes Nearshore 1996-2008
2:10 p.m.	<u>M. Ramin et al.</u> Environmental Risk Assessment and Adaptive Management Implementation in Hamilton Harbour	<u>J.W. Harrison and R.E.H. Smith</u> Intra-Seasonal and Diurnal Variability of Photosynthetic Health of Nearshore Lake Ontario Phytoplankton	<u>S.V. Nghiem and G. Leshkevich</u> Validation of a Satellite Synthetic Aperture Radar (SAR) Ice Classification Algorithm	<u>J.M. Adams et al.</u> U.S. EPA Great Lakes National Program Office Nearshore Monitoring using the TRIAXUS Towed Instrument Platform
2:30 p.m.	<u>L.F. Leon et al.</u> Nested Modeling for Nearshore Water Quality and Algae Growth in Lake Ontario	<u>D.C. Depew et al.</u> Probing the phytoplankton of nearshore Lake Ontario	<u>R.A. Shuchman et al.</u> Synergistic Approach to Measuring Lake Properties using Satellite and In-Situ Remote Sensing	<u>D.M. Dolan</u> Spatially Detailed Nutrient Load Estimates for Lake Erie in 2005
2:50 p.m.	<u>E.L. Jones et al.</u> Three-dimensional modelling of walleye nursery habitat in West Basin Lake Erie.	<u>H. Niblock et al.</u> Exploring Long Term Changes in the Planktonic Food Web of the Upper Bay of Quinte in Response to the Impacts of Phosphorus Abatement and Exotic Species	<u>C.R. Hatt</u> Application and Evaluation of Two Satellite-Derived Bathymetry Algorithms for Clear Shallow Inland Lakes	<u>B.K. Ginn et al.</u> Relationship of aquatic plant distribution to phosphorus, substrate type, and other limnological variables in Lake Simcoe (Ontario, Canada)

Wednesday, May 20

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Physical and Chemical Drivers of Great Lakes Fish Ecology (<i>continued</i>) <i>Co-Chairs: Stuart Ludsin, Christine Mayer, and Tomas Hook</i></p>	<p>VHS in the Great Lakes: Impacts and Outlooks <i>Co-Chairs: Fred Snyder, Rick Goetz, and Carol Stepien</i></p>	<p>The Muskegon River Mega Model: Integrating Changes in Land Use, Climate, Hydrology and Fish Populations <i>(continued)</i> <i>Co-Chairs: Mike Wiley and Jeffrey Tyler</i></p>	<p>Environmental Education, Training, and Certification in the Great Lakes Region <i>Co-Chairs: Daryl Moorhead and Joseph Ackerman</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>J.D. Conroy et al.</u> Fish Community Structure in Lake Erie: Continued Rehabilitation or a Return to Degradation?</p>	<p><u>G.H. Groocock et al.</u> The emergence of Viral Hemorrhagic Septicemia type1VB in the Great Lakes</p>	<p><u>R.J. Stevenson et al.</u> Evaluating Thresholds in Ecological Responses To Support Policy and Management Actions</p>	<p><u>D.L. Kobus</u> Professional Credentials Increase Marketability and Show Commitment to High Standards in Emerging Environmental Job Markets</p>	1:30 p.m.
<p><u>P.D. Collingsworth and E.A. Marschall</u> Spatial differences in Lake Erie female yellow perch growth, survival, and energetic condition: consequences for estimates of lake-wide total egg production</p>	<p><u>M. Faisal et al.</u> Emergence and Spread of Viral Hemorrhagic Septicemia Virus in the Laurentian Great Lakes.</p>	<p><u>S.T. Cheng and M.J. Wiley</u> Predicting the thermal impacts on hypothetical dam removals in the Muskegon River</p>	<p><u>M.R. Moss</u> Post-Secondary Education and Environmental Professional Development in Canada; Certification, Accreditation and Life-Long Learning.</p>	1:50 p.m.
<p><u>N.F. Manning et al.</u> Effects of Environmental Variables on Year 0 Yellow Perch Growth Abundance in the Western Basin of Lake Erie</p>	<p><u>R. Kim et al.</u> Comparative Susceptibility of Representative Great Lakes Fish Species to the Emerging Strain of Viral Hemorrhagic Septicemia Virus</p>	<p><u>P.J. Steen et al.</u> Predicting future changes in Muskegon River watershed game fish distributions under future land cover alteration and climate change scenarios</p>	<p><u>W.J. Focht et al.</u> Environmental Curricula in Higher Education: Exploring Common Ground</p>	2:10 p.m.
<p><u>L.B. Carreon-Martinez et al.</u> Yellow perch (<i>Perca flavescens</i>) larval survival in the Western basin of Lake Erie estimated using genetic analysis</p>	<p><u>R. Goetz et al.</u> Yellow Perch (<i>Perca flavescens</i>) Susceptibility To Viral Hemorrhagic Septicemia Virus Isolates From Europe and North America</p>	<p><u>C.M. Riseng et al.</u> Muskegon futures: riverine biotic assessment</p>	<p><u>M.D. Land</u> Regional Consortia in Higher Education: Collaborative Ecosystem-Based Teaching and Learning in the Hudson River Watershed</p>	2:30 p.m.
<p><u>N.L. Legler et al.</u> Influence of River Plumes on Feeding of Lake Erie Fishes</p>	<p><u>L.R. Pierce et al.</u> A Rapid Molecular Assay with Internal Controls for Detecting the VHS Fish Virus</p>	<p><u>E. Rutherford</u> Effects of Urban Development and Climate Change on fisheries habitat suitability in the Muskegon River Watershed: results of a multi-modeling approach</p>	<p><u>E.J. Tramer</u> Developing an Environmental Sciences Curriculum: A Case Study at the University of Toledo</p>	2:50 p.m.

Wednesday, May 20

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Physical Limnology and Physical-Chemical-Biological Coupling in Lakes (<i>continued</i>) <i>Co-Chairs: Dmitry Beletsky, Chin Wu, and George Arhonditsis</i>	Challenges to the Ecological Integrity of the Lake Ontario Ecosystem: Shoreline, Nearshore, and Offshore Dynamics (<i>continued</i>) <i>Co-Chairs: Mohiuddin Munawar, Frederick Luckey, and Edward Mills</i>	Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes (<i>continued</i>) <i>Co-Chairs: George Leshkevich and Robert Shuchman</i>	Nearshore and Offshore Changes in Great Lakes Food Webs: Mechanisms and forecasting (<i>continued</i>) <i>Co-Chairs: Henry Vanderploeg and Joseph DePinto</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
3:10 p.m.	<u>C. DeMarchi et al.</u> Estimating Lake-Wide Runoff Uncertainty in the Great Lakes Using a Monte Carlo Technique	<u>M. Fitzpatrick et al.</u> Evaluating the Planktonic Food Web of a Highly Stressed Area of Concern: Hamilton Harbour, Lake Ontario.	<u>K.P. Kowalski</u> Examination of Longnose Gar Movement in a Lake Erie Coastal Wetland Using a High-Resolution Acoustic Camera (DIDSON)	<u>L.M. Tomlinson and M.T. Auer</u> Nutrient Management and the Great Lakes Cladophora Model
3:30 p.m.	BREAK			

Wednesday, May 20

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
Physical and Chemical Drivers of Great Lakes Fish Ecology (continued) <i>Co-Chairs: Stuart Ludsin, Christine Mayer, and Tomas Hook</i>	VHS in the Great Lakes: Impacts and Outlooks (continued) <i>Co-Chairs: Fred Snyder, Rick Goetz, and Carol Stepien</i>	The Muskegon River Mega Model: Integrating Changes in Land Use, Climate, Hydrology and Fish Populations (continued) <i>Co-Chairs: Mike Wiley and Jeffrey Tyler</i>	Environmental Education, Training, and Certification in the Great Lakes Region (continued) <i>Co-Chairs: Daryl Moorhead and Joseph Ackerman</i>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<u>K.L. Pangle et al.</u> Effects of chemo-physical variation associated with high discharge events on yellow perch larval habitat quality in western Lake Erie	<u>J.C. Willey and E.L. Crawford</u> Quality-Controlled RT-PCR Data That Support Development of New Diagnostics	<u>J.A. Tyler et al.</u> Effects of Urban Development in the Muskegon River Watershed on growth, survival and potential recruitment of a Lake Michigan steelhead population: results of a multi-modeling approach.	<u>K.J. Egan</u> Environmental Economics	3:10 p.m.
BREAK				3:30 p.m.

Wednesday, May 20

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Physical Limnology and Physical-Chemical-Biological Coupling in Lakes <i>(continued)</i> <i>Co-Chairs: Dmitry Beletsky, Chin Wu, and George Arhonditsis</i>	Challenges to the Ecological Integrity of the Lake Ontario Ecosystem: Shoreline, Nearshore, and Offshore Dynamics <i>(continued)</i> <i>Co-Chairs: M. Munawar, F. Luckey, and E. Mills</i>	Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes <i>(continued)</i> <i>Co-Chairs: George Leshkevich and Robert Shuchman</i>	Nearshore and Offshore Changes in Great Lakes Food Webs: Mechanisms and forecasting <i>(continued)</i> <i>Co-Chairs: Henry Vanderploeg and Joseph DePinto</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
3:50 p.m.	<u>J.T. Waples</u> <i>et al.</i> Measuring Particle Dynamics and Dreissenid Mussel Clearance Rates with Short-lived Radionuclide Tracers: $^{90}\text{Y}/^{90}\text{Sr}$ & $^{234}\text{Th}/^{238}\text{U}$	<u>R.G. Randall</u> <i>et al.</i> Long-term trends in an Index of Biotic Integrity for nearshore fishes in Hamilton Harbour	<u>Y. Zhou</u> and A.M. Michalak Estimation of Dissolved Oxygen Distribution in Lake Erie Using Geostatistical Methods	<u>J.V. DePinto</u> <i>et al.</i> Coupling the Great Lakes Cladophora Model (GLCM) with a Whole Lake Eutrophication Model (AEM3D)
4:10 p.m.	<u>R.E.H. Smith</u> <i>et al.</i> A Three Dimensional Model for Dreissenid Mussel Effects on Ecosystem Properties in Lake Erie	<u>C.A. Bach</u> Addressing Challenges to the Ecological Integrity of the Toronto Harbour through Collaboration	<u>X. Xia</u> and D.H. Miller Spatial Patterns Study for Sediments from Lake Michigan	<u>J.R. Liebig</u> and H.A. Vanderploeg Clearance Rate Response to Temperature by Lake Michigan Profunda Morph Quagga Mussels
4:30 p.m.	<u>C.C. Clevinger</u> <i>et al.</i> Potential impacts of nitrification on the formation of hypoxia in Lake Erie	<u>S. da Silva</u> <i>et al.</i> Development of a Set of Environmental Health Indicators for the Town of Oakville, ON	<u>B. Gharabaghi</u> <i>et al.</i> Atmospheric Deposition of Phosphorus to Lake Simcoe	<u>H.A. Vanderploeg</u> <i>et al.</i> Signals in the plankton: impact of weather and non-indigenous species on seasonal, interannual, and long-term trends on plankton dynamics in L. Michigan
4:50 p.m.	<u>T. Howell</u> <i>et al.</i> Water Quality in the Nearshore of the Central Basin of Lake Erie Adjacent to the Mouths of Kettle, Big Otter and Catfish Creeks	<u>S.E. Doka</u> <i>et al.</i> The Role of the Nearshore for Fishes in Lake Ontario: DFO's Lake Ontario Ecosystem Research Initiative	<u>G. Leshkevich</u> and S. Liu CoastWatch Great Lakes Program Update: 2009	<u>S.A. Pothoven</u> <i>et al.</i> Mysis in Southern Lake Michigan
5:10 p.m.		<u>Y. zhu</u> and A. Vodacek Investigation of the relationship between the thermal bar and Cladophora growth in Lake Ontario using field and satellite data		<u>W.W. Fetzer</u> <i>et al.</i> Evaluating young-of-the-year yellow perch (<i>Perca flavescens</i>) response to habitat changes following zebra mussel (<i>Dreissena polymorpha</i>) introduction in Oneida Lake, NY
5:30 p.m.		<u>T. Ozersky</u> <i>et al.</i> Phosphorus Excretion by Dreissenid Mussels Can Meet Cladophora P Demand Along a Portion of Lake Ontario Shoreline		

Wednesday, May 20

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
	VHS in the Great Lakes: Impacts and Outlooks <i>(continued)</i> Co-Chairs: Fred Snyder, Rick Goetz, and Carol Stepien	The Muskegon River Mega Model: Integrating Changes in Land Use, Climate, Hydrology and Fish Populations <i>(continued)</i> Co-Chairs: Mike Wiley and Jeffrey Tyler	Environmental Education, Training, and Certification in the Great Lakes Region <i>(continued)</i> Co-Chairs: Daryl Moorhead and Joseph Ackerman	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
	<u>T.A. Gabriel</u> <i>et al.</i> Viral Hemorrhagic Septicemia (VHS) in Ohio: a report on inland monitoring	<u>D.M. Krueger</u> <i>et al.</i> Using fishery management activities to forecast species interactions and Chinook (<i>Oncorhynchus tshawytscha</i>) recruitment in a large Lake Michigan tributary	<u>C.V. Blatz</u> Questions of Ethics In Environmental Science and Environmental Studies Education	3:50 p.m.
	<u>G.K. Wallat</u> Impacts of VHS on the Ohio aquaculture industry	<u>S.R. Hensler</u> and D.J. Jude Recruitment bottlenecks for walleye in the Muskegon River Estuary, Lake Michigan	<u>R. Patterson</u> The Intersection of Africana Studies in Environmental Studies:	4:10 p.m.
	<u>F.L. Snyder</u> Potential Impacts of VHS Regulations on Great Lakes Fisheries	Discussion	<u>D.M. Ashton</u> Film, Video, and Environmental Science	4:30 p.m.
	<u>F.L. Snyder</u> <i>et al.</i> VHS discussion		<u>J.D. Ackerman</u> and J. Li A Review of Graduate Programs in the "Environmental Sector" in Canada	4:50 p.m.
			<u>D.L. Moorhead</u> and S. Milz Ecological and Human Health: An Integrated Curriculum at the University of Toledo	5:10 p.m.
				5:30 p.m.

Thursday, May 21

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	<p>Climate Variability and Its Impacts on Environment and Ecosystems in the Great Lakes Region <i>Co-Chairs: Jia Wang, Stephen Brandt, Cynthia Sellinger, Brent Lofgren, Henry Vanderploeg, and Doran Mason</i></p>	<p>Challenges to the Ecological Integrity of the Lake Ontario Ecosystem: Shoreline, Nearshore, and Offshore Dynamics <i>(continued)</i> <i>Co-Chairs: Mohiuddin Munawar, Frederick Luckey, and Edward Mills</i></p>	<p>Building Toward a Science Strategy for the Great Lakes Basin under the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement <i>Co-Chairs: Rob Messervey and Ted Lozier</i></p>	<p>Healthy Large Lakes: Fisheries Management, Policies, and Perceptions <i>Co-Chairs: Norine Dobiesz, Robert E. Hecky, and John Gannon</i></p>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
8:30 a.m.	<p><u>M.D. MacKay</u> Simulating Great Lakes Water Levels with the Canadian Regional Climate Model</p>	<p><u>D. Depew et al.</u> Cladophora distribution in Lake Ontario Nearshore Environments: Implications for nutrient management strategies</p>	<p><u>R.W. Messervey</u> Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement - Information and Science Provisions and Related Initiatives</p>	<p><u>S.J. Guildford et al.</u> Initial primary productivity estimates in Lake Malombe, Malawi following invasion by an exotic Asian snail</p>
8:50 a.m.	<p><u>J.R. Angel</u> and <u>K.E. Kunkel</u> The response of Great Lakes water levels to future climate scenarios with an emphasis on Lake Michigan</p>	<p><u>C.M. Pennuto et al.</u> Cladophora, Gobies, And Mussels, Oh My: a LONNS Update On Their Distribution And Abundance In Nearshore Lake Ontario.</p>	<p><u>H.W. Reeves et al.</u> A map to change the world: enabling environmentally based water management across the Great Lakes region</p>	<p><u>D. Jamu</u> Resiliency as an essential aspect for ecosystem health</p>
9:10 a.m.	<p><u>F.H. Quinn</u> Relative Roles of Climate vs Erosion in the Recent Decrease in Fall Between Lakes Huron and Erie</p>	<p><u>S.B. Watson</u> and <u>G.L. Boyer</u> Cyanobacterial blooms in Lake Ontario coastal areas: toxins, taxa and taste-odour</p>	<p><u>E. MacDonald</u> and <u>J.F. Tonto</u> The Ottawa-Gatineau Watershed Atlas</p>	<p><u>T.J. Lawrence</u> Understanding fisher's behavior under co-management institution: defining challenges of fisheries management on Lake Victoria, East Africa</p>
9:30 a.m.	<p><u>F.M.G. McCarthy et al.</u> Explaining the Early Holocene Late Lake Hough Lowstand</p>	<p><u>M. Munawar et al.</u> Comparing the Taxonomic Composition of Phytoplankton Determined by Fluoroprobe with Standard Microscopic Analysis in Hamilton Harbour, Lake Ontario</p>	<p><u>C.L. Baker</u> Ontario's Groundwater Mapping Program</p>	<p><u>N.E. Dobiesz et al.</u> Comparing the socio-economic drivers of fisheries management practices between Lake Victoria and the Laurentian Great Lakes</p>
9:50 a.m.	<p><u>B.M. Lofgren</u> and <u>J. Wilbarger</u> Global Models With a Little More Evapotranspiration Drive Regional Models With Much More?</p>	<p><u>S.R. Brauer</u> NMN for Water Quality of Coastal Waters and Their Tributaries</p>	<p><u>R.I. Kelly et al.</u> The Ontario Geological Survey's Surficial Aquifer 3-D Mapping Program</p>	<p><u>J.E. Gannon</u> Revisiting the keystone species approach of integrating and indicating ecosystem health in the Laurentian Great Lakes</p>

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<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Saginaw Bay: The Continuing Impact of Multiple Ecosystem Stressors <i>Co-Chairs: Craig Stow, Joe DePinto, and Juli Dyble Bressie</i></p>	<p>History, Ecology, and Management of Fisheries in Great Lakes Connecting Channels <i>Co-Chairs: Edward Roseman, Bruce Manny, and Jennifer Read</i></p>	<p>Benthic populations in the Great Lakes: Temporal Trends and Ecology <i>Co-Chairs: Don Schloesser and Lee Grapentine</i></p>	<p>COSEE School for Scientists <i>Co-Chairs: Rochelle Sturtevant and Rosanne Fortner</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>C.A. Stow</u> The Saginaw Bay Multiple Stressors Project</p>	<p><u>K.M. Stewart</u> And a canal runs through it</p>	<p><u>D.W. Schloesser et al.</u> <i>Hexagenia</i> spp. in western Lake Erie-- an update of abundance of this sentinel taxon</p>	<p><u>R.W. Fortner et al.</u> What is Pedagogy and Why Should Scientists Care? (Pedagogy 101)</p>	8:30 a.m.
<p><u>C. DeMarchi et al.</u> Developing a Distributed Watershed Hydrology, Sediments Load, and Nutrients Load Model for Saginaw Bay</p>	<p><u>J.F. Gottgens et al.</u> Effects of a Low-Head Dam Removal on the Fish Community in a Great Lakes Tributary</p>	<p><u>K.M. DeVanna et al.</u> Biotic and abiotic habitat interactions determine predation risk for burrowing mayflies</p>	<p><u>S. Stewart et al.</u> No Scientist Left Behind: Standards 101 (What every scientist needs to know about education standards)</p>	8:50 a.m.
<p><u>T.H. Johengen et al.</u> Evaluating Sediment and Nutrient Loading for the Saginaw River Using an Intensive Sampling Program</p>	<p><u>K.J. McGrath et al.</u> Development of Lake Sturgeon Spawning Beds on the St. Lawrence River near Waddington, NY</p>	<p><u>G.W. Winston et al.</u> Oxidative stress indicators in the mayfly <i>Hexagenia limbata</i>: Responses to cold shock, heat shock, desiccation and parasitic infection</p>	<p><u>B.M. Culler et al.</u> Lake Erie Literacy Principles: How PIs Can Incorporate Literacy Principles and Outreach Components to Enhance Research Proposals</p>	9:10 a.m.
<p><u>E.M. Verhamme et al.</u> Development of a Linked Fine-Scale Hydrodynamic and Ecosystem Model for Assessing the Impact of Multiple Stressors in Saginaw Bay, Lake Huron</p>	<p><u>B.A. Manny et al.</u> Construction of fish spawning habitat in the Detroit River</p>	<p><u>S.X. Yi et al.</u> Bio-indicators of cellular stress in the mayfly <i>Hexagenia limbata</i>: Potential roles for heat shock proteins</p>	<p>Previous Presentation Continued</p>	9:30 a.m.
<p><u>D. Beletsky and D. Schwab</u> Modeling summer circulation in Lake Huron</p>	<p><u>G.W. Kennedy et al.</u> Egg Deposition, Distribution and Spawning Habitat Preference of Fish in the Detroit River, North America.</p>	<p><u>D.W. Schloesser et al.</u> Burrowing Mayflies (<i>Hexagenia</i> spp.) in Saginaw Bay, Lake Huron: Paleoecologic and Historic Records</p>	<p><u>T. McKinney</u> Strategies for Successfully Targeting and Collaborating with Underrepresented Groups</p>	9:50 a.m.

Thursday, May 21

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Climate Variability and Its Impacts on Environment and Ecosystems in the Great Lakes Region <i>(continued)</i> <i>Co-Chairs: Jia Wang, Stephen Brandt, Cynthia Sellinger, Brent Lofgren, Henry Vanderploeg, and Doran Mason</i>	Challenges to the Ecological Integrity of the Lake Ontario Ecosystem: Shoreline, Nearshore, and Offshore Dynamics <i>(continued)</i> <i>Co-Chairs: Mohiuddin Munawar, Frederick Luckey, and Edward Mills</i>	Building Toward a Science Strategy for the Great Lakes Basin under the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement <i>(continued)</i> <i>Co-Chairs: Rob Messervey and Ted Lozier</i>	Healthy Large Lakes: Fisheries Management, Policies, and Perceptions <i>Co-Chairs: Norine Dobiesz, Robert E. Hecky, and John Gannon (continued)</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
10:10 a.m.	<u>R.A. Smith</u> and D. Kristovich The Influence of the Great Lakes on Passing Cyclones During the Stable Season	<u>A. Dove</u> and G.J. Warren Long-Term Trends in Major Ions and Nutrients in Lake Ontario	<u>A. Jones</u> Anishinabek Traditional Knowledge and the Implementation of the Great Lakes – St. Lawrence River Basin Sustainable Water Resources Agreement	<u>J. Janssen</u> and V. Sideleva Are the Laurentian Great Lakes Too Young to be Healthy?
10:30 a.m.	<u>M.J. Wiley et al.</u> A Multi-modeling approach to evaluating impacts of climate change on river ecosystems	<u>M.R. Twiss et al.</u> Assessment of Phytoplankton Growth and Grazing Rates in Lake Ontario, July 2008	<u>R. Plain</u> A Community Tie – the Connection of the Anishnaabek of Aamjiwnaang with the St. Clair River	<u>J.D. Horn et al.</u> Using EcoLE-FisH to examine percid recruitment and management in Lake Erie
10:50 a.m.	BREAK			
11:00 a.m.-noon	Plenary, Doermann Theatre, University Hall “Climate, Oceans, Infectious Diseases, and Human Health: The Cholera Paradigm” Dr. Rita Colwell , Chair of Canon US Life Sciences, Inc. and Distinguished University Professor, University of Maryland at College Park and at Johns Hopkins University Bloomberg School of Public Health			

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<p>Saginaw Bay: The Continuing Impact of Multiple Ecosystem Stressors <i>(continued)</i> <i>Co-Chairs: Craig Stow, Joe DePinto, and Juli Dyble Bressie</i></p>	<p>History, Ecology, and Management of Fisheries in Great Lakes Connecting Channels <i>(continued)</i> <i>Co-Chairs: Edward Roseman, Bruce Manny, and Jennifer Read</i></p>	<p>Benthic populations in the Great Lakes: Temporal Trends and Ecology <i>(continued)</i> <i>Co-Chairs: Don Schloesser and Lee Grapentine</i></p>	<p>COSEE School for Scientists <i>(continued)</i> <i>Co-Chairs: Rochelle Sturtevant and Rosanne Fortner</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>L.N. Ivan</u> <i>et al.</i> Dynamics of the Saginaw Bay fish community (1970-2008)</p>	<p><u>A.S. McNaught</u> <i>et al.</i> Assessing Larval Fish Habitat Quality within the Detroit River</p>	<p><u>M.T. Shackelford</u> <i>et al.</i> Distribution and Abundance of Native Mussels (Bivalvia: Unionidae) in a Thermal Discharge in Western Lake Erie</p>	<p><u>E.K. Hinchey</u> and J.M. Adams Bringing the Great Lakes into the Classroom: Examples of COSEE-inspired Science Learning Environments</p>	10:10 a.m.
<p><u>D.F. Millie</u> <i>et al.</i> An 'Enviro-Informatic' Assessment of Saginaw Bay Phytoplankton: Data-Driven Discrimination and Modeling of <i>Microcystis</i> Abundance</p>	<p><u>E.F. Roseman</u> <i>et al.</i> Larval Fish Community of the Detroit River</p>	<p><u>T.D. Crail</u> <i>et al.</i> Wind-derived seiches as a means for detecting and monitoring the unionid community in the western basin of Lake Erie</p>	<p><u>H.M. Domske</u> and W.J. Edwards Making the Most Out of a Classroom Visit</p>	10:30 a.m.
BREAK				10:50 a.m.
<p>Plenary, Doermann Theatre, University Hall "Climate, Oceans, Infectious Diseases, and Human Health: The Cholera Paradigm" Dr. Rita Colwell, Chair of Canon US Life Sciences, Inc. and Distinguished University Professor, University of Maryland at College Park and at Johns Hopkins University Bloomberg School of Public Health</p>				11:00 a.m.-noon

Thursday, May 21

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	<p>Climate Variability and Its Impacts on Environment and Ecosystems in the Great Lakes Region <i>(continued)</i> Co-Chairs: Jia Wang, Stephen Brandt, Cynthia Sellinger, Brent Lofgren, Henry Vanderploeg, and Doran Mason</p>	<p>Challenges to the Ecological Integrity of the Lake Ontario Ecosystem: Shoreline, Nearshore, and Offshore Dynamics <i>(continued)</i> Co-Chairs: Mohiuddin Munawar, Frederick Luckey, and Edward Mills</p>	<p>Building Toward a Science Strategy for the Great Lakes Basin under the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement <i>(continued)</i> Co-Chairs: Rob Messervey and Ted Lozier</p>	<p>Healthy Large Lakes: Fisheries Management, Policies, and Perceptions <i>(continued)</i> Co-Chairs: Norine Dobiesz, Robert E. Hecky, and John Gannon</p>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
1:00 p.m.	<p><u>X.L. Huang</u> and Y. Deng The Effect of Different Great Lakes Treatments in Simulating Winter Temperature of the Midwest: a Large-scale Modeling Perspective</p>	<p><u>K.T. Holeck</u> <i>et al.</i> Zooplankton as Indicators of Ecosystem Change in Lake Ontario</p>	<p><u>M.J. Villeneuve</u> The Canadian Water Availability Indicators Initiative: Great Lakes Pilot</p>	<p><u>R.B. Mercader</u> and T.A. Dobson Reducing AIS through understanding the human dimensions of live baitfish collection and use</p>
1:20 p.m.	<p><u>B.A. Shmagin</u> <i>et al.</i> Spatiotemporal regime of climate and streamflow in the U.S. Great Lakes Basin</p>	<p><u>T.B. Johnson</u> <i>et al.</i> Physiologic health of lake whitefish in Lake Ontario - interstock differences</p>	<p><u>E.J. Fugate</u> and J.B. Zimmerman *** CANCELLED *** System Dynamics Modeling of Water Resources</p>	<p><u>K.J. Hedges</u> <i>et al.</i> GAP Analysis in the Great Lakes: The Ins and Outs of Aquatic Protected Areas</p>
1:40 p.m.	<p><u>X. Bai</u> and J. Wang The Impacts of ENSO and AO on the Interannual Variability of the Great Lakes Ice Cover</p>	<p><u>R.J. Snyder</u> <i>et al.</i> Forecasting Impacts of Changing Food Webs in Lake Ontario: Effects of Dietary Fatty Acids on Growth of Alewives</p>	<p><u>A.S. Mayer</u> <i>et al.</i> Update on Modeling and analyzing the use, efficiency, value, and governance of water in the Great Lakes region through an integrated approach</p>	<p><u>G. Krantzberg</u> Indicator Endpoints Inform Active Intervention</p>
2:00 p.m.	<p><u>J. Wang</u> <i>et al.</i> Seasonal, interannual, and spatial variability of the Great Lakes ice cover</p>	<p><u>E.L. Mills</u> <i>et al.</i> Reality in a Fish Bowl and the Lake Ontario Ecosystem</p>	<p><u>P.J. Martin</u> <i>et al.</i> Development of a Methodology for Calculating Consumptive Water Use within the Province of Ontario</p>	<p><u>C. Masson</u> The Great Lakes Gordian Knot II: Governance and accountability for aquatic ecosystem health, integrity and risk management</p>
2:20 p.m.	<p><u>H. Hu</u> <i>et al.</i> Modeling Lake ice and circulation in Lake Erie</p>	<p>Discussion</p>	<p><u>T.J. Boston</u> <i>et al.</i> Water Balance Quantification in the Trent River Watershed: Validation of Ungauged Tributaries and Impact of Storage Variables</p>	<p><u>M. Gaden</u> <i>et al.</i> The Great Lakes Regional Collaboration: A New Paradigm for Restoring Ecosystem Health?</p>

Thursday, May 21

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Nuisance Algae in the Great Lakes <i>Co-Chairs: Juli Dyble Bressie and Tom Bridgeman</i></p>	<p>History, Ecology, and Management of Fisheries in Great Lakes Connecting Channels <i>(continued)</i> <i>Co-Chairs: Edward Roseman, Bruce Manny, and Jennifer Read</i></p>	<p>Benthic populations in the Great Lakes: Temporal Trends and Ecology <i>(continued)</i> <i>Co-Chairs: Don Schloesser and Lee Grapentine</i></p>	<p>Field Stations and Institutes in the Laurentian Great Lakes and the St. Lawrence River <i>Co-Chairs: Michael Twiss, Tom Langen, and Carol Stepien</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>D.B. Baker et al.</u> A Comparison of Trends in Total Phosphorus and Bioavailable Phosphorus Export from the Maumee and Sandusky Rivers, 1975-2008</p>	<p><u>J.T. Francis</u> Characterization of the nearshore fish community in the Huron-Erie Corridor</p>	<p><u>S. Cholger-Blust et al.</u> Submersed Aquatic Macrophytes in Lake St. Clair between Lakes Huron and Erie; 1995 and 2007 with comparison to baseline data of 1978</p>		1:00 p.m.
<p><u>D.D. Kane et al.</u> Western Lake Erie Nuisance Algae: Correlations Between Nutrient Load and Total Phytoplankton and Cyanobacterial Biomass</p>	<p><u>R.C. Haas</u> and G. Towns walleye movements and fisheries in the Huron-Erie Corridor</p>	<p><u>A. Bantelman et al.</u> Role of environment on burrow irrigation and oxygen in <i>Chironomus spp.</i></p>	<p><u>R.D. Ricketts</u> and S.M. Colman The Large Lakes Observatory, University of Minnesota Duluth: An Institute Focused on Oceanographic Research on Large Lakes Around the World</p>	1:20 p.m.
<p><u>J.D. Chaffin et al.</u> The Effects of Light and Mixing on Photosynthesis Physiology of <i>Microcystis</i> in Western Lake Erie</p>	<p><u>B.A. Daley et al.</u> Substrate Preference and Status of the Endangered Northern Madtom (<i>Noturus stigmosus</i>) in the Upper Detroit River</p>	<p><u>S.J. Lozano</u> and J.V. Scharold The Status of Benthos in Lake Ontario</p>	<p><u>J.V. Klump</u> The Great Lakes WATER Institute of the University of Wisconsin-Milwaukee</p>	1:40 p.m.
<p><u>J. Guo et al.</u> Sediment Nutrients and Bioavailability in Lake Winnipeg</p>	<p><u>M. Granados et al.</u> Measuring changes in the fish assemblages of the Huron-Erie Corridor Areas of Concern</p>	<p><u>R.K. Sherman et al.</u> Benthic Invertebrate Community Composition in Severn Sound, (Georgian Bay) Lake Huron – 2007/08</p>	<p><u>S.M. Creque et al.</u> Lake Michigan Biological Station: studying Illinois' waters since 1985</p>	2:00 p.m.
<p><u>G.P. Horst</u> and O. Sarnelle Phosphorus Uptake Physiology of <i>Microcystis</i> and Competing Taxa Along a Nutrient Gradient in Western Lake Erie</p>	<p><u>N.D. Green et al.</u> Detroit River Delisting & Information System: A Management Tool for an Area of Concern</p>	<p><u>B.K. Ginn et al.</u> Assessment of environmental changes in Lake Simcoe (Ontario, Canada) using benthic invertebrates as proxy indicators: relationship of community structure and limnological conditions</p>	<p><u>J.C. Gillingham</u> and D.G. Uzarski Central Michigan University Biological Station on Beaver Island, Northern Lake Michigan</p>	2:20 p.m.

Thursday, May 21

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	<p>Climate Variability and Its Impacts on Environment and Ecosystems in the Great Lakes Region <i>(continued)</i> Co-Chairs: Jia Wang, Stephen Brandt, Cynthia Sellinger, Brent Lofgren, Henry Vanderploeg, and Doran Mason</p>	<p>Challenges to the Ecological Integrity of the Lake Ontario Ecosystem: Shoreline, Nearshore, and Offshore Dynamics <i>(continued)</i> Co-Chairs: Mohiuddin Munawar, Frederick Luckey, and Edward Mills</p>	<p>Building Toward a Science Strategy for the Great Lakes Basin under the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement <i>(continued)</i> Co-Chairs: Rob Messervey and Ted Lozier</p>	<p>Healthy Large Lakes: Fisheries Management, Policies, and Perceptions <i>(continued)</i> Co-Chairs: Norine Dobiesz, Robert E. Hecky, and John Gannon</p>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
2:40 p.m.	<p><u>K.A. Donnelly</u> Potential Impacts of Offshore Wind Farms in the Great Lakes: Lessons Learned from the European Experience and Suggestions for the Future</p>	<p>Discussion</p>	<p><u>D.J. Van Vliet et al.</u> Water Quantity Risk Assessments in Ontario: A Great Lakes Headwaters Pilot Project</p>	<p>Discussion</p>
3:00 p.m.	BREAK			

Thursday, May 21

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Nuisance Algae in the Great Lakes (continued) <i>Co-Chairs: Juli Dyle Bressie and Tom Bridgeman</i></p>	<p>History, Ecology, and Management of Fisheries in Great Lakes Connecting Channels (continued) <i>Co-Chairs: Edward Roseman, Bruce Manny, and Jennifer Read</i></p>	<p>Benthic populations in the Great Lakes: Temporal Trends and Ecology (continued) <i>Co-Chairs: Don Schloesser and Lee Grapentine</i></p>	<p>Field Stations and Institutes in the Laurentian Great Lakes and the St. Lawrence River (continued) <i>Co-Chairs: Michael Twiss, Langen Tom, and Carol Stepien</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>A.E. Poste et al.</u> Seasonal variability of microcystin concentrations in Murchison Bay and Napoleon Gulf (Lake Victoria, East Africa)</p>	<p><u>J.G. Read et al.</u> Managing Collaborations for Native Fishery Enhancement: Case Studies in the Binational Detroit River</p>	<p><u>L.C. Grapentine</u> Adjusting bioassessments of sediments for changing benthic communities in reference sites in the Great Lakes</p>	<p><u>G.B. Steinhart et al.</u> Lake Superior State University's Aquatic Research Laboratory: A Small-school Perspective on the Role of Hands-on Experience for Undergraduates</p>	2:40 p.m.
BREAK				3:00 p.m.

Thursday, May 21

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	<p>Climate Variability and Its Impacts on Environment and Ecosystems in the Great Lakes Region (continued) Co-Chairs: J. Wang, S. Brandt, C. Sellinger, B. Lofgren, H. Vanderploeg, and D. Mason</p>	<p>General Topics Co-Chairs: Kristen DeVanna and Todd Crail</p>	<p>Examining the Benefits and Risks of Consuming Great Lakes Fish. Co-Chairs: David Carpenter and Eric Boysen</p>	<p>Great Lakes - St. Lawrence River Basin Water Resources Compact Chair: Kenneth Kilbert</p>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
3:20 p.m.	<p><u>J.V. Klump</u> and J.T. Waples Climate Variability and Alterations in the Hydrodynamics, Particle Transport, Resuspension, Carbon Cycling, and Hypoxia in Green Bay</p>	<p><u>P.H. Finlayson</u> <i>et al.</i> State of the Great Lakes Basin Ecosystem 2008</p>	<p><u>M.E. Turyk</u> Sport Fish and Commercial Fish Consumption in Residents of the Great Lakes Basin</p>	<p><u>K.K. Kilbert</u> The Great Lakes - St. Lawrence River Basin Water Resources Compact and Its Interface With Existing Anti-Diversion Law</p>
3:40 p.m.	<p><u>M.J. Wiley</u> <i>et al.</i> A Multi-modeling approach to evaluating impacts of climate change on river ecosystems</p>	<p><u>L.H. McCarthy</u> <i>et al.</i> Protecting Canada's Drinking Water: Developing Real-Time, Early-Warning Biomonitoring Technology</p>	<p><u>B. Holub</u> Omega-3 Fatty Acid Contents of Great Lakes Fish.</p>	<p><u>S.R. Gosman</u> Compact Implementation: Progress Report and Next Steps</p>
4:00 p.m.	<p><u>J. Wang</u> and X. Bai Is the Dipole Anomaly a major driver to record lows in Arctic summer sea ice extent?</p>	<p><u>S.C. Chapra</u> <i>et al.</i> Long-Term Trends in the Major-Ion Chemistry of the Lower Great Lakes</p>	<p><u>S.C. Bushkin</u> and D.O. Carpenter Health effects of Omega 3 Fatty Acids</p>	<p><u>D.P. Wendt</u> A Trade Lawyer's Comment on the Great Lakes Compact, the Bottled Water Loophole, and Trade Agreements</p>
4:20 p.m.	<p>Discussion</p>	<p><u>M.S. Evans</u> <i>et al.</i> PAH Sediment Studies in Lake Athabasca and the Athabasca River Ecosystem: Natural Sources and the Impacts of Oil Sands Development</p>	<p><u>S.L. Schantz</u> Human Health Impact of Contaminants in Great Lakes Fish</p>	<p><u>M. Valiante</u> The Impact of the Great Lakes Compact on the Development of Canadian Water Law</p>

Thursday, May 21

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Nuisance Algae in the Great Lakes (<i>continued</i>) <i>Co-Chairs: Juli Dyble Bressie and Tom Bridgeman</i></p>		<p>COSEE School for Scientists <i>Co-Chairs: Rochelle Sturtevant and Rosanne Fortner</i></p>	<p>Field Stations and Institutes in the Laurentian Great Lakes and the St. Lawrence River (<i>continued</i>) <i>Co-Chairs: Michael Twiss, Langen Tom, and Carol Stepien</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>P. De Tezanos Pinto</u> and E. Litchman Interactive Effects of N:P Ratios and Light on Nitrogen-fixing Cyanobacteria</p>		<p><u>D.A. Hart</u> and P.A. Kania GEE: A partnership for Google Earth in Education</p>	<p><u>C.A. Stepien</u> Research and Education Programs at the University of Toledo's Lake Erie Center</p>	3:20 p.m.
<p><u>M.A. Evans</u> <i>et al.</i> Climate driven variability in <i>Microcystis</i> abundance, dominance, and toxin production</p>		<p>Previous Presentation Continued</p>	<p><u>E.C. Braig</u> and J.M. Reutter F. T. Stone Laboratory, The Ohio State University</p>	3:40 p.m.
<p><u>E. Litchman</u> <i>et al.</i> Trait-based Approaches to Harmful Algal Blooms</p>		<p><u>R.L. Cuhef</u> and C. Aguilar Onboard and Online: Interactive field sampling from research vessel to classroom via Internet2.</p>	<p><u>J.L. Schnars</u> The Regional Science Consortium: Environmental Research and Education</p>	4:00 p.m.
<p><u>R.L. Lowe</u> <i>et al.</i> Benthic algal community structure on soft sediments in western Lake Erie.</p>		<p><u>C. Aguilar</u> <i>et al.</i> From Hands In To Hands On: Transfer Of Shipboard Research Experience To The Classroom.</p>	<p><u>L.G. Rudstam</u> <i>et al.</i> Cornell Biological Field Station</p>	4:20 p.m.

Thursday, May 21

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
			Examining the Benefits and Risks of Consuming Great Lakes Fish <i>(continued)</i> <i>Co-Chairs: David Carpenter and Eric Boysen</i>	Great Lakes - St. Lawrence River Basin Water Resources Compact <i>(continued)</i> <i>Chair: Kenneth Kilbert</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
4:40 p.m.			<u>M.L. Diamond</u> <i>et al.</i> How much of which fish should we eat? Consumption guidance for Toronto market fish based on contaminants and omega-3 fatty acids	T.R. Crane and <u>R.A. Pearson</u> Great Lakes Regional Water Use Database History and Trends in 2004
5:00 p.m.			<u>D. Mergler</u> An update on methylmercury toxicity and dietary factors that influence its absorption, metabolism and toxicity	
5:20 p.m.				

Thursday, May 21

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Nuisance Algae in the Great Lakes (<i>continued</i>) <i>Co-Chairs: Juli Dyble Bressie and Tom Bridgeman</i></p>		<p>COSEE School for Scientists (<i>continued</i>) <i>Co-Chairs: Rochelle Sturtevant and Rosanne Fortner</i></p>	<p>Field Stations and Institutes in the Laurentian Great Lakes and the St. Lawrence River (<i>continued</i>) <i>Co-Chairs: Michael Twiss, Langen Tom, and Carol Stepien</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>S.B. Watson</u> <i>et al.</i> Benthic Cyanobacterial Mats in the Great Lakes and the St Lawrence: Ecological and Socioeconomic Impacts</p>		<p><u>R.A. Sturtevant</u> <i>et al.</i> Great Lakes Data in the Classroom</p>	<p><u>T.A. Langen</u> and M.R. Twiss Importance of Field Research Stations for Great Lakes Research – An Assessment Focusing on Published Research Productivity</p>	4:40 p.m.
<p><u>R.R. Rediske</u> and J.D. Rediske The role of <i>Cladophora</i> and <i>Spirogyra</i> mats in the sequestration of <i>E. coli</i> and Microcystin in Saginaw Bay and Grand Traverse Bay.</p>		<p><u>A.M. Marshall</u> <i>et al.</i> Making GLERL Data Accessible to Teachers for Classroom Use</p>		5:00 p.m.
<p><u>A.R. Lashaway</u> and H.J. Carrick Spatial and Temporal Variation of Diatom Physiological Condition in Lake Erie Benthos: Implications for Seasonal Hypoxia</p>				5:20 p.m.

Friday, May 22

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Fisheries and Fish Ecology <i>Co-Chairs: Patrick Kocovsky and Jeff Tyson</i>	Emerging Contaminants in the Environment <i>Co-Chairs: Alison Spongberg and Lynda McCarthy</i>	Bioeconomics of Invasive Species in the Great Lakes Region <i>Co-Chairs: Jonathan Bossenbroek and David Finnoff</i>	Fish Consumption Advisories in the Great Lakes: Bridging Contaminants and Human Health <i>Co-Chairs: Donna Kashian and Ann Krause</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
8:30 a.m.	<u>A. Perez-Fuentetaja et al.</u> Shiners and Smelt are the Main Forage Base for Steelhead Trout (<i>Oncorhynchus mykiss</i>) Populations in Lake Erie	<u>C. Wu et al.</u> Pharmaceutical and Personal Care Products in an Agricultural Landscape, Western Lake Erie Basin	<u>J.M. Bossenbroek et al.</u> An introduction to the bioeconomics of invasive species with examples from the emerald ash borer invasion	<u>D.R. Kashian et al.</u> Addressing Fish Consumption Advisory Issues via an Integrated Assessment Approach: A case study of the Detroit River
8:50 a.m.	<u>D. Rosauer et al.</u> A phenotypic comparison of lake trout (<i>Salvelinus namaycush</i>) morphotypes	<u>J.S. Tertuliani et al.</u> Occurrence of Organic Wastewater Compounds in Tributaries to the Cuyahoga River, Northeast Ohio	<u>D.A.R. Drake et al.</u> Quantifying the Likelihood of Introducing Aquatic Invasive Species through the Baitfish Industry in Ontario	<u>S.P. Bhavsar et al.</u> Connecting Fish Consumption-Advisories and Sedimentary PCBs in the Canadian Great Lakes
9:10 a.m.	<u>E.S. Dunlop et al.</u> *** CANCELLED *** Temporal Trends in the Numbers and Characteristics of Lake Huron Fish Schools	<u>D. Muir et al.</u> Atmospheric deposition and bioaccumulation of current use pesticides and selected brominated compounds in Ontario remote lakes in Ontario and the Great Lakes	<u>J.R. Muirhead</u> Forecasting dispersal and establishment of the invasive crustacean, <i>Cercopagis pengoi</i> among inland New York lakes	<u>I. Jezdic and K.G. Drouillard</u> Application of the Hazard Assessment Model with spatially explicit water and sediment data to predict fish consumption advisories in the Detroit River
9:30 a.m.	<u>M.E. Proctor et al.</u> Assessing Our Abilities to Distinguish Among Lake Trout Hatchery Strains and Their Potential Hybrid Offspring on Lake Michigan's Mid-Lake Reef Complex	<u>K. Czajkowski et al.</u> Use of GIS to Analyze the Potential Health Impacts of the Application of Sewage Sludge to Agricultural Fields in Northwest Ohio	<u>C.M. Mayer et al.</u> The good, the bad, and the algae: perceiving ecosystem services and disservices generated by zebra and quagga mussels	<u>C.D. Tomasallo et al.</u> Cardiovascular Mortality among Frequent Consumers of Great Lakes Sport Fish

Friday, May 22

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Nuisance Algae in the Great Lakes <i>(continued)</i> <i>Co-Chairs: Juli Dyble Bressie and Tom Bridgeman</i></p>		<p>Education and Outreach <i>Co-Chairs: Rochelle Sturtevant and Helen Domske</i></p>	<p>Causes of Injury to Ecosystems and Environmental Health Across the Great Lakes <i>Co-Chairs: Tom Muir, Michael Gilbertson, and James Sherry</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>G.S. Bullerjahn</u> <i>et al.</i> Glyphosate and Phosphonate Utilization by Freshwater Picocyanobacteria</p>		<p><u>C.Y. Swinehart</u> and E.H. Finnell PILOTING A VOLUNTEER AIS MONITORING PROGRAM: Michigan's Experience with Clean Boats, Clean Waters</p>	<p><u>M.E. McMaster</u> <i>et al.</i> An Evaluation of the Health Status of Wild Fish from Wheatley Area of Concern - 1. Biological Effects</p>	8:30 a.m.
<p><u>E.B. Young</u> <i>et al.</i> Assessing Effects as Glyphosate as a Toxin and Potential P Source for Great Lakes Phytoplankton</p>		<p><u>J.E. Lucente</u> and D.O. Kelch Utilizing Shipwrecks, Coastal Tourism and Maritime Heritage as an Economic Development and Water Resource Education and Outreach Tool</p>	<p><u>J.P. Sherry</u> <i>et al.</i> An Evaluation of the Health Status of Wild Fish from Wheatley Area of Concern - 2. PCB body burden and hydroxylated metabolites in fish plasma</p>	8:50 a.m.
<p><u>G.L. Boyer</u> <i>et al.</i> New Approaches for Assessing the Risk from Microcystin-Contaminated Fish</p>		<p><u>E.K. Hinchey</u> <i>et al.</i> Climbing the Evaluation Pyramid: Techniques used by Illinois-Indiana Sea Grant to evaluate Outreach Programs.</p>	<p><u>E.B. Dussault</u> <i>et al.</i> An Assessment of the Health Status of Wild Fish from Wheatley Harbour Area of Concern – 3. Multivariate Analyses</p>	9:10 a.m.
<p><u>H. Nelson</u> <i>et al.</i> New method to detect and identify nuisance cyanobacteria and invasive bivalves using a continuous imaging particle analyzer (FlowCAM)</p>		<p><u>R.N. Lohner</u> and C.A. Stepien Developing an Environmental Science Learning Community at the Land- Lake Ecosystem Interface</p>	<p><u>J.L. Parrott</u> <i>et al.</i> Effects of Municipal Wastewater Effluents and Pharmaceuticals in Fish</p>	9:30 a.m.

Friday, May 22

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Fisheries and Fish Ecology <i>Co-Chairs: Patrick Kocovsky and Jeff Tyson</i>	Emerging Contaminants in the Environment <i>Co-Chairs: Alison Spongberg and Lynda McCarthy</i>	Bioeconomics of Invasive Species in the Great Lakes Region <i>Co-Chairs: Jonathan Bossenbroek and David Finnoff</i>	Fish Consumption Advisories in the Great Lakes: Bridging Contaminants and Human Health <i>Co-Chairs: Donna Kashian and Ann Krause</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
9:50 a.m.	<u>M.S. Evans et al.</u> Metals and Organic Contaminants in Lake Trout and Burbot from Great Slave Lake, Northwest Territories over 1993-2007: Spatial and Temporal Patterns	<u>S. Simoliunas et al.</u> Aquifer recharge by treated wastewater: an emerging crisis	<u>T. Horie et al.</u> Optimal Strategies for Surveillance and Control of Invasive Forest Pathogens	<u>R.G. Kreis et al.</u> Lake Michigan Mass Balance Study Post Audit: Integrated, Multi-media PCB Modeling and Forecasting for Lake Trout
10:10 a.m.	<u>S.A.C. Marklevitz et al.</u> The use of otolith microchemistry as a fisheries management tool: the differentiation of Chinook salmon, natal origins in Lake Huron	<u>J.L. Newsted et al.</u> Toxicity of perfluorooctane sulfonate (PFOS) to avian wildlife: ambient Safe Water Value derivation and uncertainty analysis	<u>T. Warziniack et al.</u> Distributions of the Impacts of Ship-borne Invasions on the Great Lakes Regional Economy	<u>M. Shaskus et al.</u> Ohio's Sport Fish Consumption Advisory
10:30 a.m.	BREAK			

Friday, May 22

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Nuisance Algae in the Great Lakes <i>(continued)</i> <i>Co-Chairs: Juli Dyble Bressie and Tom Bridgeman</i></p>		<p>Education and Outreach <i>Co-Chairs: Rochelle Sturtevant and Helen Domske</i></p>	<p>Causes of Injury to Ecosystems and Environmental Health Across the Great Lakes <i>Co-Chairs: Tom Muir, Michael Gilbertson, and James Sherry</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>T.T. Wynne</u> <i>et al.</i> Using satellite imagery to determine the role of wind and other environmental conditions on cyanobacterial bloom movement and dispersal in western Lake Erie</p>		<p><u>S. Adlerstein</u> <i>et al.</i> Mapping the Huron River</p>	<p><u>D.C. Honeyfield</u> <i>et al.</i> Thiamine Deficiency In The Great Lakes And Elsewhere: A Symptom Of Unhealthy Ecosystem</p>	9:50 a.m.
<p><u>R.P. Stumpf</u> <i>et al.</i> A Forecast System for Cyanobacterial Blooms in Western Lake Erie</p>		<p>Previous Presentation Continued</p>	<p><u>N. Basu</u> Muscarinic Cholinergic Receptors as a Novel Biomarker for Methylmercury - Evidence from Animals, Implications for Humans</p>	10:10 a.m.
BREAK				10:30 a.m.

Friday, May 22

	<u>2520, Ingman Room</u>	<u>2582, Lake Superior</u>	<u>2584, Lake Huron</u>	<u>2591, Lake Erie</u>
	Fisheries and Fish Ecology (<i>continued</i>) <i>Co-Chairs: Patrick Kocovsky and Jeff Tyson</i>	Emerging Contaminants in the Environment (<i>continued</i>) <i>Co-Chairs: Alison Spongberg and Lynda McCarthy</i>	Bioeconomics of Invasive Species in the Great Lakes Region (<i>continued</i>) <i>Co-Chairs: Jonathan Bossenbroek and David Finnoff</i>	Fish Consumption Advisories in the Great Lakes: Bridging Contaminants and Human Health (<i>continued</i>) <i>Co-Chairs: Donna Kashian and Ann Krause</i>
Time	Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title
10:50 a.m.	<u>M.K. Nims</u> <i>et al.</i> Determining When Otoliths of Larval Walleye Establish a Natal Site Signal	<u>M. Venier</u> <i>et al.</i> Flame Retardants in Plasma Samples from Bald Eagles from the Great Lakes Region	<u>E.P. Fenichel</u> <i>et al.</i> Risks are not always what they seem, the case of sterile male sea lamprey transfers	<u>S.P. Bhavsar</u> <i>et al.</i> Mercury in Canadian Great Lakes fish: A Concern?
11:10 a.m.	<u>O.J. Sepulveda Villet</u> and C.A. Stepien Genetic structure of Great Lakes yellow perch: A landscape genetic approach	<u>A.O. De Silva</u> <i>et al.</i> Perfluorinated Acids in Lake Ontario Trout: 1997 – 2007	<u>D. Finnoff</u> <i>et al.</i> Optimal Stochastic Environmental Policies Implications for Aquatic Invasive Species	<u>A.E. Krause</u> <i>et al.</i> Network analysis: an evaluation tool for the human and natural systems of the fish consumption advisories in the Detroit River
11:30 a.m.	<u>A.E. Haponski</u> <i>et al.</i> Spatial and temporal genetic patterns of Lake Erie yellow perch	<u>M.L. Diamond</u> <i>et al.</i> Polycyclic Musks in Toronto Rivers: The Effects of Urbanization and High Flow Events	<u>F. Lupi</u> <i>et al.</i> A Research Agenda for the Economics of Invasive Species in the Great Lakes	Discussion
11:50 a.m.	<u>P.M. Kocovsky</u> Morphological Differences of Yellow Perch Across and Within Management Units in Lake Erie			
12:10 p.m.	<u>J.A. Banda</u> and C.A. Stepien Fourteen years of genetic structure in Lake Erie walleye			
12:30 p.m.	<u>J.J. Deroba</u> and J.R. Bence Evaluating harvest control rules when life history varies: the case of lake whitefish in the Great Lakes			

Friday, May 22

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
<p>Nuisance Algae in the Great Lakes <i>(continued)</i> <i>Co-Chairs: Juli Dyble Bressie and Tom Bridgeman</i></p>		<p>Education and Outreach <i>(continued)</i> <i>Co-Chairs: Rochelle Sturtevant and Helen Domske</i></p>	<p>Causes of Injury to Ecosystems and Environmental Health Across the Great Lakes <i>(continued)</i> <i>Co-Chairs: Tom Muir, Michael Gilbertson, and James Sherry</i></p>	
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
<p><u>J. Dyble Bressie et al.</u> Assessing environmental controls on <i>Microcystis</i> populations in the Great Lakes using molecular tools</p>		<p><u>M. Zint</u> "MEERA" - A Web-Based Resource to Support Evaluations of Great Lakes Education Programs</p>	<p><u>R.B. Hill</u> Contaminants in the Niagara River: Two Decades of Upstream/Downstream Monitoring</p>	10:50 a.m.
<p>Discussion</p>		<p><u>L.W. Florence and M.T. Zint</u> National Ocean Sciences Bowl: Using MEERA to Evaluate an Established Environmental Education Program</p>	<p><u>S.S.M. LeBlond et al.</u> Sediment Metal Concentrations within the UNESCO Designated Rideau Canal</p>	11:10 a.m.
		<p><u>B. Liukkonen et al.</u> Impacts of a Conservation Field Day for Youth</p>	<p><u>P. Gogineni et al.</u> The Necessity of Carbon Filtration for Water and Wastewater Treatment</p>	11:30 a.m.
		<p><u>T.E. Hallesy</u> Community Stewardship through Environmental Education—A Model Project</p>	<p><u>C. Gorey et al.</u> Cellulose Acetate Ultrafiltration Membranes Modified with Temperature-Sensitive Polymers for Fouling Resistance</p>	11:50 a.m.
BREAK				12:10 p.m.

Friday, May 22

<u>2592, Lake Michigan</u>	<u>3016, St. Lawrence River</u>	<u>3018, Lake Ontario</u>	<u>3020, Lake St. Clair</u>	
		Education and Outreach <i>(continued)</i> <i>Co-Chairs: Rochelle Sturtevant and Helen Domske</i>		
Presented by / Title	Presented by / Title	Presented by / Title	Presented by / Title	Time
		<u>T.E. Hallesy</u> and R.G. Goettel Lake Michigan Exploration Workshop--Synthesizing Research for Classroom Application		12:50 p.m.
		<u>H.M. Domske</u> COSEE – GL: Shipboard Science on the USEPA R/V Peter Wise Lake Guardian		1:10 p.m.
		<u>J.H. Vail</u> and M.E. Weinert Examining Lake Monitoring Data from a Vessel-based Education Program – Can the data be useful?		1:30 p.m.
		<u>R.W. Fortner</u> Reaching Hundreds with Online Great Lakes Workshops		1:50 p.m.
		<u>N. Koehler et al.</u> Teaching with the Great Lakes Observing System (GLOS)		2:10 p.m.

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Poster Session

Tuesday, May 19, 6 - 8 p.m.
Student Union Auditorium/Ballroom, 3rd floor

Toxic Chemicals in Great Lakes Air

DAGGUPATY, S.M., BANIC, C.M., and BLANCHARD, P.
Numerical Simulation of Atmospheric Loadings of Mercury from a Coal Fired Power Plant to Lake Erie

MA, J. and VENKATESH, S.
Multiple Pathways Modeling of Hexachlorobenzene to the Great Lakes from North American Sources

MILLIGAN, M.S., VALENTINE, L., ORCHARD, A., PAGANO, J.J., HOLSEN, T.M., and HOPKE, P.K.
WHO Coplanar PCB, PCDD/F, and TEQ analyses in Great Lakes Fish

OFFENBERG, J.H., LEWANDOWSKI, M., KLEINDIENST, T.E., EDNEY, E.O., JAOUI, M., SHEESLEY, R.J., and SCHAUER, J.J.
Contributions of primary and secondary organic carbon to ambient PM in midwestern US cities

Emerging Contaminants in the Environment

GRABUSKI, J.M., CAGAMPAN, S.J., STRUGER, J., and SMITH, E.C.P.
Automated Solid Phase Extraction of Carbamate Pesticides in Fortified Water and Natural Water Samples Using LC-ESI/MS/MS

LAWSON, G., DOVE, A., BACKUS, S., and MUIR, D.
Whole Water Total-Mercury Concentrations in the Great Lakes

MILEYEVA-BIEBESHEIMER, O. and GRUDEN, C.
Impact of metal nanoparticles found in personal care products on cell viability

PERSOON, C.L. and KLECKA, G.M.
"Evaluation of Current Chemicals of Emerging Concern in the Great Lakes"

STRUGER, J., RICHARDSON, V., and WATSON, S.
Occurrence of Glyphosate and AMPA in Open Waters and Tributaries of Lake Erie

Causes of Injury to Ecosystems and Environmental Health Across the Great Lakes

KAPO, K. and BURTON, G.A.
Delineation of Stressor-Response Associations Using Regional Spatial Analysis of Archival Ohio Watershed Data

Ecological Trends in Great Lakes Wetlands

DUNCAN, A.M., GORR, M.W., ROFKAR, J.R., BARNSWELL, K.D., GOTTGENS, J.F., and DWYER, D.F.
Plant-Mediated Reductions of Arsenic Levels in Flow-Through Wetland Microcosms

ROFKAR, J., DUNCAN, A., BARNSWELL, K., ARMENIO, P., FRANTZ, J., and HECKATHORN, S.
Effects of nitrogen on boron toxicity in *Azolla caroliniana*

Nearshore and Offshore Changes in Great Lakes Food Webs: Mechanisms and Forecasting

ENGEVOLD, P.M., SANDGREN, C.D., and BERGES, J.A.
Changes in Phytoplankton Particulate C:N:P Composition in Response to Nutrient Enrichment and Manipulations of Natural Herbivore Abundance in Lake Michigan During Summer 2008

ENGEVOLD, P.M., SANDREN, C.D., and BERGES, J.A.
Changes in Phytoplankton Photosynthetic Parameters P_{max} and Alpha in Response to Nutrient Enrichment and Manipulations of Natural Herbivore Abundance in Lake Michigan During Summer 2008.

EVANS, L.E.
Botulism Network

FAHNENSTIEL, G., POTHOVEN, S., VANDERPLOEG, H., KLARER, D., NALEPA, T., and SCAVIA, D.
Long-term trends in phytoplankton abundance, composition and primary production in the offshore region of southeastern Lake Michigan

Upper Great Lakes Food Webs, Conditions, and Assessments

CAVALETTO, J.F. and POTHOVEN, S.A.
Seasonal Patterns of Zooplankton from a Southern Lake Huron Transect in 2007

KISH, J.L., OSTER, R.J., WERNE, J.P., and HICKS, R.E.
Archaeal Diversity in the Pelagic Zone of Lake Superior

Saginaw Bay: The Continuing Impact of Multiple Ecosystem Stressors

VERHOUGSTRAETE, M.P. and ROSE, J.B.
Recreational water quality assessment of Saginaw Bay beaches using fecal indicator bacteria and source tracking methods on samples from shallow and deep waters, sediment, and muck

Satellite Monitoring of Great Lakes for Cyanobacteria Blooms

MARUTHI SRIDHAR, B.B. and VINCENT, R.K.
Spectral reflectance measurements of a *Microcystis* bloom

SANDERSON, L.M. and VINCENT, R.K.
Mapping the Phycocyanin Concentrations of the Great Lakes Using LANDSAT ETM+ Data

Nuisance Algae in the Great Lakes

PASCOE, T., WATSON, S., STRUGER, J., YERUBANDI, R., GUO, J., and GAGNON, L.
Getting Our Feet Wet: Preliminary Data on Algal Blooms and Nutrients in Lake of the Woods, Year 1

THOMAS, M.K. and LITCHMAN, E.
Growth responses of invasive and native cyanobacteria to temperature

Challenges to the Ecological Integrity of the Lake Ontario Ecosystem: Shoreline, Nearshore, and Offshore Dynamics

MALKIN, S.Y., HOWELL, E.T., and SMITH, R.E.H. **** CANCELLED ****
Seasonal and Vertical Description of Particulate Matter Inferred from Optical Measurements Along a Nearshore Transect in Lake Ontario

PAVLAC, M.M., SMITH, T.T., THOMAS, S.P., BOYER, G.L., MAKAREWICZ, J.C., LEWIS, T.W., PENNUTO, C.M., BASILIKO, C., EDWARDS, W.J., and ATKINSON, J.F.
Application of Continuous Monitoring in the Lake Ontario Nearshore

Benthic populations in the Great Lakes: Temporal Trends and Ecology

CUSTER, K.W., BURTON, G.A., TAULBEE, K., FETTERS, K., HUMMEL, S., and SCHLEKAT, C.
Aquatic Insect Responses to Nickel Spiked Sediments: *In Situ* and Laboratory Exposures

MATHIAS, P.T., BOSSENBROEK, J.M., HEPPNER, E.A., and CRAIL, T.D.
Distribution of Unionid Mussels in the Ottawa River of Lucas County Ohio

Physical Limnology and Physical-Chemical-Biological Coupling in Lakes

PADDOCK, R., BASKARAN, M., BIDDANDA, B., NOLD, S., RUBERG, S., and KLUMP, V.
Sediment accumulation rates in the Middle Island Sinkhole, Thunder Bay National Marine Sanctuary, Lake Huron

PETERSON, H.M., NIEBER, J.L., KANIVETSKY, R., SHMAGIN, B., and WELLS, J.
Atlases of Water Resources for Minnesota as a Tool for Sustainable Community Planning

SMIGELSKI, J.R., TEBBENS, S.F., and BARTON, C.C.
Analysis of Water Level Dynamics in the Great Lakes of North America

Climate Variability and Its Impacts on Environment and Ecosystems in the Great Lakes Region

HU, H. and WANG, J.
Modeling Sea Ice and Ocean Circulations in the Bering Sea

KOSLOW, M.R. and MURRAY, M.W.
Thinking about Great Lakes Land and Water: The Need to Integrate Land Stakeholders and Water Managers in Planning for a Changing Climate

NEVILLE, L.A., MCCARTHY, F.M.G., and TINKLER, K.J.
Evidence of an Early Holocene Drought in the Lower Great Lakes?

WHITE, B.A., MATSUMOTO, K., and AUSTIN, J.A. **** CANCELLED ****
Implications of Ice Cover Decrease for Lake Superior Biogeochemistry: A Numerical Modeling Study

Carbon Cycling in the Laurentian Great Lakes

D'SOUZA, N., WILHELM, S.W., TWISS, M.R., CARRICK, H.J., BOURBONNIERE, R.A., BULLERJAHN, G.S., and MCKAY, R.M.L.
Primary production in ice-covered Lake Erie

PETERSON, B.M., CORY, R.M., MCNALLY, A.M., FUNKE, M.M., THOEMKE, J.D., COTNER, J.B., and MCNEILL, K.P.
Optical and Photophysical Parameters of Lake Superior Dissolved Organic Matter

Physical and Chemical Drivers of Great Lakes Fish Ecology

BODAMER, B.L., BRIDGEMAN, T.B., RUCH, R.J., and HOOK, T.
Measuring Hypoxia-induced physiological stress in Yellow Perch (*Perca flavescens*)

HEAD, J.A., DEBOFSKY, A., and BASU, N.
Interactive Effects of Methyl Mercury and Hypoxia in Great Lakes Fish

Fisheries and Fish Ecology

GOMEZDEL CAMPO, E. and SANDERSON, L.M.
Changes in Fish Diversity Due to Hydrologic Variability in the Sandusky River, Ohio: A Genetic Algorithm Application

PORTA, M.J., EDWARDS, W.H., and BUR, M.T.
A Comparison of Three Methods for Estimating Ages of Lake Erie White Perch

COSEE School for Scientists

CULLER, B.M., HUNTLEY, M., ELMER, H., RIDDLE, C., JENTES BANICKI, J., LICHTKOPPLER, F., VAN ZOEST, P., and MANZO, L.
From the Ocean to the Lake: Introducing the Lake Erie Literacy Principles

Education and Outreach

CABRERA, S.C., BOEHME, S.E., HINCHEY MALLOY, E.K., ADAMS, J.M., and SMITH, E.R.
Disposal of Unwanted Medicines: A Resource for Action in Your Community

Remote Sensing, Visualization, and Spatial Data Applications for the Great Lakes

HANSEN, T., CONSI, T.R., BOOTSMA, H., and KLUMP, J.V.
The Great Lakes Urban Coastal Observing System – Design and Performance

HOOD, J.L.A., ANDERSON, M., and TAYLOR, W.D.

Spatial survey of submersed macrophytes and macroalgae in the Grand River watershed

STIERMAN, D.J. and KRANTZ, D.E.

Geophysical Methods for Quaternary Research and Environmental Investigations in the Great Lakes Basin

TORBICK, N.M. and KRAUSE, A.E.

Improving freshwater ecosystem services in social-ecological systems through the integration of remote sensing and geospatial data

High School Students and Educators Great Lakes Watershed Science Poster Session

BLOSSER, J. and CRAIL, T.

Student-based ecological monitoring of two riffle classes in Swan Creek, an urban stream in NW Ohio

BOGUE, M. and MILEYEVA-BIEBESHEIMER, O.

Student Water Quality Testing Engages Students in all Levels of Bloom's Taxonomy

BOLLIN, T., HAPONSKI, A.E., and STEPIEN, C.A.

Collaborative Science Research Experience for High School Students with a focus on Water Quality Testing on the Ottawa River Watershed

BOURLAND, D., CAMPBELL, M., and STIERMAN, D.J.

Using Ground Penetrating Radar to Locate Unmarked Graves in Toledo, Ohio, USA

COLE, P. and BODAMER, B.L.

Introducing High School students to Environmental Monitoring: A look at water quality in the Ottawa River

GOREY, C., KOLINSKI, C., SEGER, T., and ECKMAN, D.

Analysis of Agricultural Run-off in Wolf Creek

JAIN, N., DEVANNA, K.M., MAYER, C.M., and SCHLOESSER, D.W.

Mapping the spatial relationship of burrowing mayflies and dreissenid mussels in western Lake Erie

KARSLOTIS, S.I., BROWN, J.E., LOHNER, R., and STEPIEN, C.A.

Salinity tolerance of the exotic round goby: Experimental implications for seawater ballast exchange

KIGER, S., HERR, H., BOHRER, J., BRIGHAM, S., COBLENTZ, S., KICK, T., LIVENGOOD, A., LOWE, A., NUSSBAUM, M., and VODIKA, T.

Kingsway Christian School's Drinking Water Project

KOLINSKI, C. and GOREY, C.

Teaching Science to Make Good Citizens

LAVELLE, K.M. and MATISOFF, G.

Sediment Oxygen Demand in Lake Erie

LOHNER, R.N., STEPIEN, C.A., MOORHEAD, D.L., BRIDGEMAN, T.B., FISHER, T.G., and GRUDEN, C.L.

Graduate Teaching Fellows in STEM High School Education: An Environmental Science Learning Community at the Land-Lake Ecosystem Interface

MINER, G.H. and BULLERJAHN, G.S.
Utilization of Organic Phosphorus by Cyanobacteria

PENAMON, W.A. and MENTZER, G.C.
The Role of Mentoring in Promoting Positive Attitudes of Minority Students Towards STEM Careers

SINGLER, K. and DEVANNA, K.M.
Engaging high school students in field research: Comparing two years of water quality data for the Ottawa River

SMITHERS-PEART, T.A., SMITH, T., WATSON, S.B., YERUBANDI, R., EDGE, T., KHAN, I., and BOOTY, B.
Lake Ontario Science Research

WILSON, W. and SEPULVEDA VILLET, O.J.
Sixteen Years of Water Quality Monitoring: Shantee Creek at Roy C. Start High School

General Topics

GRABARKIEWICZ, J.D. and CRAIL, T.D.
Three Years of Unionid Surveys in Swan Creek, Lower Maumee River Watershed, Lucas County, Ohio

HUDDER, A., O'SHEA, K.E., DOMBKOWSKI, A., and WALSH, P.J.
Hepatic Toxicogenomic Evaluation of Microcystin-LR Exposure in Mice

NORRIS, K.D., BERQUIST, M., SZWEC, J., RIDAL, J., CAMPBELL, L.M., and HODSON, P.V.
Mercury in Lake St. Francis Walleye: The role of sources of mercury source, bioavailability, and food chain transfer

RODENBURG, Z.L., ERDMAN, N.R., SMITH, J.L.H., EASTLING, P.M., and HORNBUCKLE, K.C.
Persistent Organic Pollutants found in the 2008 Flood Residues of Cedar Rapids, Iowa

SELDEN, J.D., GOTTGENS, J.F., CRAIL, T.D., MATHIAS, P.T., and HEPPNER, E.A.
The effect of channel heterogeneity on fish communities in agricultural streams in Sandusky and Seneca Counties of Ohio

Notes

Notes



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Solutions for the future **AGLR 2010**

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Today's challenges and tomorrow's solutions are rooted in our history with the Great Lakes.

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