"A confluence of collaboration in research, education and outreach; accelerating progress and sharing successes in the Ohio River Basin"

ORBA Summit and ORBCRE Symposium (Virtual Meetings)

October 6-7, 2021 (Wednesday and Thursday)

Hosted by Thomas More University and
The Thomas More University Biology Field Station

Wednesday, October 6, 2021

9:00-9:30am ORBA Update Harry Stone, Chairperson, Ohio River Basin Alliance

9:30-10:00am: Abundant Clean Water and Healthy Productive Ecosystems

10:00-10:30am Environmental Justice, Equity, and Inclusion Sally Gutierrez, USEPA

10:30-10:45am BREAK

10:45-11:15am River Transportation and Commerce Marty Hettel

11:15-11:45am Reliable Flood Control and Risk Reduction Sarah Hippensteel Hall

11:45am-12:00pm BREAK

12:00-1:00pm Keynote Presentation #1 Colonel Kimberly Peeples, USACE

1:00-1:15pm BREAK

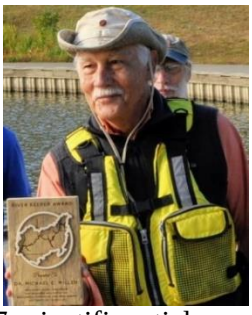
1:15-1:45pm World Class Nature Based Recreation David Wicks

1:45-2:15pm Knowledge for Informed Decisions Jen Bowman, Director of Environmental Programs
Voinovich School of Leadership and Public Service, Ohio University

2:15-3:15pm Keynote Speaker #2

"The future of the Ohio River as an asset to us all if we try."

Dr. Michael Miller, Professor Emeritus of Biological Sciences & Environmental Studies, UC



Dr. Miller has participated in research on aquatic ecosystem structure and function on rivers and lakes in the Midwest, SW Ohio, and the Alaskan Arctic working on water chemistry, algal composition, zooplankton dynamics, and benthic macroinvertebrates, and fish ecology. His research in the Alaskan Arctic led to opening the US Tundra LTER field station at Toolik Lake in 1975 and 29 summersin N. of the Arctic Circle at part of the NSF Tundra Long Term Ecological Research program. He has also conducted paleolimnological research on Holocene climate from lakes cored in Ecuador, the Galapagos, Kiratiba in the equatorial Pacific, parts of the Arctic Russia, Mexico, and Brazil. He has trained45 research graduate students in his laboratory, written 57 scientific articles and book chapters, and was continuously funded for 30 years. In 2001 Dr. Miller received the award of Distinguished Professor for Public Service from the University of Cincinnati. He supports clean water and represents Rivers Unlimited, as its current president. This is the oldest and first statewide non-profit organization working for clean water in Ohio (www.riversunlimited.org). For his research andpublic service on rivers, they have given him the first Fremont Lifetime Achievement Award (2009). http://www.youtube.com/watch?v=tGv4MF9S3Dk. Paddlefest 'Paddlers Hall of Fame' in 2017, Ohio Water Management Assoc of Ohio's Ohio Water Hall of Fame in 2018, and the Ohio River Consortium River Keeper Award in 2020. He now works with multiple non-profits to protect our waters (including Supervisor for Hamilton County Soil & Water 2018-2020, Oxbow Inc, Mill Creek Alliance, Greenacres Foundation) and helps coordinate a volunteer water quality monitoring project on the lower Great Miami River and region wide assessmentof water quality with 3 other water quality programs with Green Umbrella, HCSWCD, and GMR Riverway.

3:15-3:30pm Brief Summary and Overview of Thursday's Agenda

Thursday, October 7, 2021

9:00-9:30am Welcoming Remarks

- Dr. Joseph Chillo, President Thomas More University
- Dr. Terry Chang, Executive Director, ORBCRE
- Dr. Harry Stone, Chairperson, ORBA

9:30-10:00am View from the Hill and Thoughts from the Caucus—Elected officials

10:00-11:00am Keynote Presentation #3

"Ripple Effects: Building Resilient Communities through Citizen-led Science and Participatory Action Research"

- Dr. Mary Brydon-Miller, Professor, Educational Leadership, Evaluation, and Organizational Development College of Education and Human Development, University of Louisville,
- Aukram Burton, Executive Director, Kentucky Center for African American Heritage, Louisville
- Perry Thomas, Salt River Basin Coordinator, Kentucky Division of Water

Citizen-Science provides mechanisms for local community members to engage with researchers to contribute to the process of knowledge generation. Too often, however, these projects continue to be designed and led by university-based researchers with community members' contributions limited to collecting data under the guidance of trained researchers. Citizen-led Science, on the other hand, offers a more collaborative approach in which research questions are generated through dialogue with local actors and speak to the interests and concerns of local communities. Participants remain involved throughout the research process and are supported in developing strategies for using the results of these research efforts to address local concerns. This presentation provides an overview of Participatory Action Research and how we see this process supporting Citizen-led Science activities. In particular, our aim is to achieve an equitable, fair, and greener future for our community. In order to do this, we must recognize the connection between racial justice and environmental justice. After providing a general overview and history of the use of PAR in promoting community environmental activism, this presentation will examine the intersection between cultural diversity, environmental education, and the arts. At the heart of our collaborative work is an exploration of water through photography. Thanks to support from the National Oceanic and Atmospheric Administration, residents of Louisville Metro can now participate in a global network of communities using photography to document effects of extreme precipitation. Art and culture have the potential to make environmental issues personal, emotional, and salient, thereby amplifying environmental awareness and expediting environmental justice.

11:00-11:30am BREAK

11:30am-12:15pm Keynote Presentation #3

"Bringing Back the Forest: Restoring Ecosystem Services on Mine Impacted Landscapes in Appalachia and Beyond"

- Dr. Chris Barton, University of Kentucky and Green Forests Work

Christopher D. Barton, Ph.D. is a Professor of Forest Hydrology and Watershed Management in the Department of Forestry and Natural Resources at the University of Kentucky. He is currently working in the areas of ecosystem restoration, reforestation and remediation primarily in streams, wetlands and mined lands. Chris is the founder and President of Green Forests Work, a program to improve the environment and economy of mined landscapes. Through this program, over 3 million trees have been planted on former coal mines in Appalachia and Australia and over 20,000 volunteers have participated. Dr. Barton has been the recipient of several State and National awards and was recently awarded a Fulbright Distinguished Chair of Science, Technology and Innovation. For the Fulbright, he will spend 2022 in Queensland, Australia working on climate change mitigation through reforestation. Chris grew up on a family farm in Lexington, Kentucky and recently planted 300 trees inoculated with truffle spores that he hopes to harvest….in ten or so years! For more information visit: www.greenforestswork.org and www.facebook.com/Greenforestswork

12:15-1:00pm LUNCH BREAK

1:00-3:00pm Concurrent Research Talks

- **1:00-1:30pm**

Concurrent Session A: *River connectivity promotes diversification of fish communities in gravel pit lakes* Audrey Laiveling and Michael Booth, University of Cincinnati

Concurrent Session B: *Sensitivity Analysis of Runoff Estimation using NRCS Equation with Rainfall, Initial Abstraction and Curve Number* Suresh Sharma, Fiza Jalees, and Chad Shipman, Youngstown University

Concurrent Session C: *Presence of SARS CoV2 in Surface Waters receiving sewer overflows in Louisville, KY* Tamara Sluss and Cullen Hunter, University of Louisville, and Ward Wilson, KY Waterways Alliance

- **1:30-2:00pm**

Concurrent Session A: *The Saw Mill Run Floodplain Economic Study*
Lisa Brown, Watersheds of South Pittsburgh and Thomas Batroney, PE**,** AKRF, Inc**.**

Concurrent Session B: *Kentucky's Nature-based Solutions Project Team: Building Bridges to Combat Climate Change* Mahtaab Bagherzadeh, Perry Thomas, Pam Moore, Shelly Morris, Drew Parker, and Carey Johnson, KY Division of Water

- **2:00-2:30pm**

Concurrent Session A: *Impacts of stream daylighting on habitat fragmentation examining unintended consequences in an urban stream.* Chelsea Hintz and Mike Booth, University of Cincinnati, and Tammy Newcomer-Johnson and Ken Fritz, United States EPA

Concurrent Session B: *Improving River Accessibility for Outdoor Recreators in the Ohio River Basin Using Geospatial Data and Mapping* Risa Shimoda, David Rutter, Brad Collett, and James Major, RMS, Tennessee River Line, and OKI

- **2:30-3:00pm**

Concurrent Session A: *Increasing Stormwater Resiliency Through Innovative Codes & Ordinances* James Stitt, Pittsburgh Water and Sewer Authority and Tom Batroney, PE, AKRF, Inc.

Concurrent Session B: *Ohio River old lock houses and dam sites: A future collaboration to enhance public use and understanding,* David Wicks, Ohio River Recreation and John Stoughton, University of Cincinnati

3:00-3:30pm BREAK

3:30-5:30pm Student Research Posters

3:30-3:40pm*:* **Introductions and Overview of Poster Session**

3:40-3:50pm*: Analysis of artificial substrates for collection and identification of benthic cyanobacteria in the Ohio River* Maggie Voyles and Chris Lorentz, Thomas More University Biology Field Station

3:50-4:00pm*: Fish host analysis of the paper pondshell, Utterbackia imbecilis* Alexis Brandenburg, Sawyer Lorentz, and Chris Lorentz, Thomas More University Biology Field Station

4:00-4:10pm*: Comparison of Fish and Macroinvertebrate Biodiversity in a Floodplain and a Non-floodplain Lake* Molly Williams, Hillsdale College, Christian Slone, Murray State University, Spencer Trimpe and Chris Lorentz, Thomas More University Biology Field Station

4:10-4:20pm*: Aerobic Scope in Kentucky Stream Fishes and Their Offspring in Response to Temperature Fluctuations* Sam Bauer, Mackenzie Danker, and Richard D. Durtsche NKU Department of Biological Sciences

4:20-4:30pm*: Determination of Potential Impact of Fracking and Coal-Mining Contaminants on Daphnia magna* Luis Tron Esqueda, University of Sacred Heart, P.R., Sarah Gibson and Chris Lorentz, Thomas More University Biology Field Station

4:30-4:40pm*: DNA Barcoding: A Genetic and Morphological Analysis of Three Closely Related Notropis Shiners* Amanda Crespo-Gomez, University of Sacred Heart, P.R., Michael Brett, Jo-Jo Kelly, and Chris Lorentz, Thomas More University Biology Field Station

4:40-4:50pm*: Pollinator Habitat Initiative Field and Drone Survey* Sarah Fortner, Savannah Pate, Emily Holt, Jasmine Trejo, Denice Robertson and Kristy Hopfensperger, Northern Kentucky University

4:50-5:00pm*: Assessing Catostomidae Fishes as potential biocontrols of Zebra Mussels (Dreissena polymorpha) in the Ohio River* Hannah Gill, Ohio Northern University and Chris Lorentz, Thomas More University Biology Field Station

5:00-5:10pm*: Screening for Fecal Coliforms in the 12 Mile Creek and the Ohio River* Ignacio Gotelli Gerstner, University of Sacred Heart, P.R., and Chris Lorentz, Thomas More University Biology Field Station

5:10-5:20pm*:* **Closing Remarks**

Concurrent Research Talks—Presenters, Titles, and Abstracts