

# Ohio Water Resources Center Newsletter

## From Our Directors

The Ohio Water Resources Center is happy to introduce new members on our team - Yang, Linda, and Ryan. Yang Ju is a Ph.D. student in the the Environmental Science Graduate Program (ESGP) at the Ohio State University. Her research focuses on modeling wetland hydrology and methane emissions. She will be responsible for creating the Center's newsletters, managing the Center's social media platform and performing other administrative tasks.

Linda C. Nogueras Ortiz is currently an Ohio State University Senior studying Professional Writing, and she will be in charge of the creative writing on the Center's website and Twitter. She spends most of her time writing, tending to her plants, gaming, and traveling.

Ryan Nichols is a senior at the Ohio State University studying Communication Technology and New Media pursuing a career in user experience research, evaluation and testability. His responsibilities for the center include content design and management, website maintenance, analytics, and other creative tasks. In his free time, he enjoys making music, exercising, and spending time with family.

With help of these amazing students, we are excited to continue to roll out initiatives identified in our [strategic plan](#).



Figure 1. New Graduate Administrative assistant Yang (left) and undergraduate assistant Linda (center) and Ryan (right).

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## Spotlight

### World Water Monitoring Day

Engaging in protecting our water resources is something any person can do. Not many are conscious of the impact that water has in our daily lives or, rather, how shortages of this precious resource affect us. If education on water resources and learning how to engage in protecting these resources in your community is something you want to be a part of, *EarthEcho Water Challenge* and *Imagine a Day Without Water* are events not to be missed!

The EarthEcho Water Challenge (formerly known as World Water Monitoring Day) is a program that engages people around the world and equips them to monitor and help protect water resources in their communities. On September 18th people around the world will collect data from water resources in their communities, share this data, and engage in activities to bring awareness and ideas on how to protect these resources. For information on how to participate, visit <http://www.worldwatermonitoringday.org/about>.

On October 23rd, various worldwide associations and



Figure 2. Citizen scientist monitoring a tributary of Olentangy River in Columbus, OH

companies will come together to raise awareness on what would happen if we had to live a day without water. There are five ways to participate, including engaging in Social Media using the #ValueWater hashtag to talk about the importance of water in our daily lives and partnering with local government officials to seek water infrastructure investments. To learn more visit: <http://imagineadaywithoutwater.org/resources/waystoparticipate>.

No task is too small when it comes to raising awareness of the importance of water. Ohio WRC works with citizen volunteers in Columbus area to monitor local tributaries. We also love to educate the public about water and water issues via our website, events we participate in and on twitter. Join the movement to protect the most valuable resource we have and remember to share your story so that others will feel inspired to join, too!

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## News Updates

### [Battle looms over laws to slow spread of invasive species in Great Lakes](#)

Via Bridge Michigan, August 26th, 2019

### [Lake Erie Harmful Algal Bloom Bulletin](#)

Via NOAA's National Ocean Service, August 26th, 2019

### [Ohio researchers working on solutions to combat harmful cyanobacteria blooms on Lake Erie](#)

Via Michigan Radio, August 19th, 2019

### [Proposed changes would reduce water monitoring samples taken](#)

Via Thehour.com, August 18th, 2019

### [Algae bloom, now visible from space, is costing water treatment plants more money](#)

Via News 5 Cleveland, August 16th, 2019

### [Scientists to test water samples across Lake Erie for annual HABs grab](#)

Via Cleveland.com, August 7th, 2019

### [Algal Blooms And Water Pollution](#)

Via WOSU radio, August 2nd, 2019

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Have a news article you'd like us to feature in our Newsletter? Email us at [OhioWRC@osu.edu](mailto:OhioWRC@osu.edu)!

## Ohio WRC Research Highlight

### [Effects of Harmful Algal Blooms on Stress and Immune Function in Freshwater Amphibians and Reptiles](#)

Dr. Jeanine Refsnider, Assistant Professor in the Department of Environmental Sciences at the University of Toledo completed an Ohio Water Resources Center funded project via 104(b) USGS funds. The project, "Effects of Harmful Algal Blooms on Stress and Immune Function in Freshwater Amphibians and Reptiles", aimed to determine whether

wildlife health can be used as an early indicator of microcystin pollution. To answer this question Dr. Refsnider's lab is taking a first step towards understanding how harmful algal blooms (HABs) affect aquatic wildlife by studying physiological stress and immune function in several common species of reptiles and amphibians (Figure 1).



Figure 1. MS student, Jessica Garcia (University of Toledo) is sampling turtles during her fieldwork.

Their results showed that tadpoles exposed to microcystin for 7 days exhibited increased dilation of the intestines compared to control tadpoles, potentially indicating an inflammatory response (Figure 2), despite no differences observed in stress levels between control and exposed tadpoles. They also sampled wild turtles during a HAB event in Grand Lake St. Marys and a control site at Ottawa National Wildlife Refuge. Similar to the tadpoles, turtles exposed to microcystin did not exhibit increased stress levels compared to control turtles, but microcystin-exposed turtles had depressed immune functioning compared to control turtles.

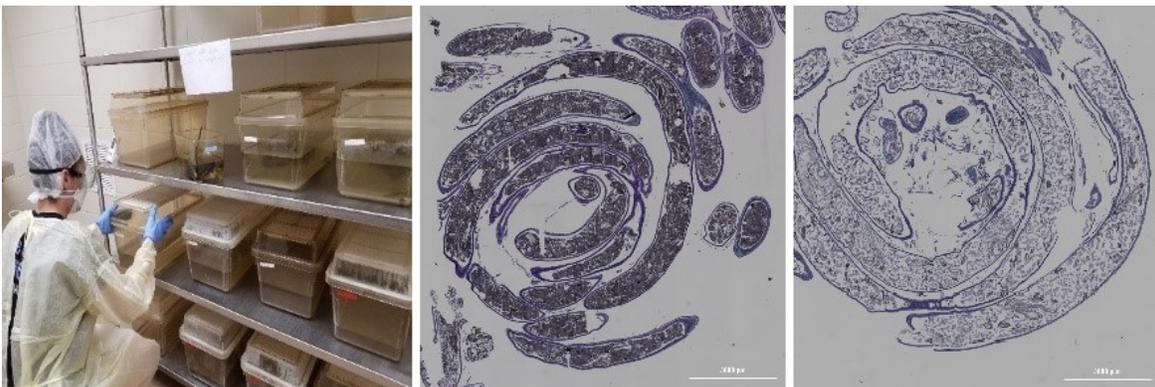


Figure 2. Controlled laboratory experiment exposing bullfrog tadpoles to microcystin (left). Cross-sections of tadpole intestines show that tadpoles exposed to microcystin (right) exhibited increased dilation compared to control animals (center), potentially indicating an inflammatory response to microcystin (histology photos by R. Su).

To learn more about Dr. Refsnider's research, visit her [website](#). To learn about other Ohio WRC research projects, visit: <https://wrc.osu.edu/past>.

## Opportunities

### WRF - Assessing the Microbial Risks and Potential Impacts from Stormwater Collection and Uses to Establish Appropriate Best Management Practices (RFP 5034)

Applicants may request up to \$75,000 in WRF funds for this project. Proposals must be received by 2:00 pm Mountain Time on Tuesday, September 24th, 2019. [More information.](#)

### WRF - Demonstrating the Effectiveness of Flushing for Reducing the Levels of Legionella in Service Lines and Premise Plumbing (RFP 5033)

Applicants may request up to \$200,000 in WRF funds for this project. Proposals must be

received by 2:00 pm Mountain Time on Tuesday, September 24th, 2019. [More information.](#)

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## **WRF - Occurrence of PFAS Compounds in U.S. Wastewater Treatment Plants (RFP 5031)**

Applicants may request up to \$250,000 in WRF funds for this project. Proposals must be received by 2:00 pm Mountain Time on Thursday, September 12th, 2019. [More information.](#)

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## **WRF - Guidelines for Optimizing Nutrient Removal Plant Performance (RFP 4973)**

The objective of this project is to build on existing work by developing updated operational guidelines for optimizing nutrient removal plant performance. Applicants may request up to \$130,000 in WRF funds for this project. Proposals must be received by 2:00 pm MT on Thursday, September 12th, 2019. [More information.](#)

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## **U.S. EPA - Postgraduate Research Opportunity with the Hypoxia Task Force**

A postgraduate research opportunity is currently available at the U.S. Environmental Protection Agency's (EPA) Office of Water (OW) located in Washington, DC. The selected participant will have the opportunity to gain hands-on experience through analysis and research with the Hypoxia Team, the Hypoxia Task Force and SERA-46 (a committee of research and extension specialists at land grant universities) in the Watershed Restoration, Assessment and Protection Division, within the Office of Wetlands, Oceans, and Watersheds. [More information.](#)

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## **U.S. EPA - The Contaminated Sites, Natural Disasters, Changing Environmental Conditions, and Vulnerable Communities: Research to Build Resilience Request for Applications (RFA) is now open through Sept. 26, 2019**

EPA, as part of its Science to Achieve Results (STAR) program, is seeking research needed to identify and assess the impacts of contaminants in conjunction with environmental and other non-chemical stressors (e.g., extreme events, geological, regional, seasonal, socioeconomic, cultural, behavioral) that may govern the particular vulnerabilities in children and elderly, so communities can be equipped with science-based solutions for reducing the vulnerabilities and building community-level resilience. [More information.](#)

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## **U.S. EPA - The Advancing Toxicokinetics for Efficient and Robust Chemical Evaluations Applications Request for Applications (RFA) is now open through Sept. 24, 2019**

This RFA seeks research that develops new and innovative approaches, assays and/or datasets to expand on currently available chemical TK information for use in chemical evaluations. Development of methods and approaches that increase throughput and predictivity while reducing uncertainty of current IVIVE approaches for ultimate application in a broader NAM framework are priority needs. [More information.](#)

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## WMAO 48th Annual Meeting and Symposium Call for Abstracts

The theme of this year's meeting and symposium is *Weather Weirding*. The keynote speaker will be Aaron Wilson, OSU Byrd Polar and Climate Research Center.

Access the online submittal form [here](#). Poster abstract submittal **deadline is October 15th**. The meeting and symposium will take place November 13th and 14th at Crowne Plaza Columbus North, 6500 Doubletree Avenue, Columbus.

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## National Stormwater Symposium 2020 Call for Abstracts

The Water Environment Federation Stormwater Institute (SWI), in cooperation with the Ohio Water Environment Association and Sanitation District No. 1 of Northern Kentucky, is now soliciting submissions for [abstracts](#), [workshop proposals](#), and [session proposals](#) for the [National Stormwater Symposium 2020](#). The Symposium will be held from March 15th to March 17th, 2020 in Cincinnati, Ohio.

Submission **deadline is October 3rd, 2019**. [More information](#).

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To find more resources offered by Ohio WRC, please visit: <https://wrc.osu.edu/resources>

## Policy Update

### Notice of Intent To Develop a Policy for Determining Harmful Algal Bloom (HAB) and Hypoxia Events of National Significance in Marine or Coastal Waters

The Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2017 (HABHRCA) provides NOAA with authority to determine that a harmful algal bloom (HAB) or hypoxia event in marine or coastal waters is an event of national significance. NOAA may make this determination on its own initiative or upon the request of the Governor of an affected state. Following an event of national significance determination, NOAA is further authorized to make sums available to the affected state or local government for the purposes of assessing and mitigating the detrimental environmental, economic, subsistence use, and public health effects of the event of national significance. Funds would be subject to the availability of appropriations. The Federal share of the cost of any activity carried out for the purposes described above may not exceed 50 percent of the cost of that activity.

NOAA is soliciting comments to inform the development of agency policy for determining HAB and hypoxia events of national significance in marine and coastal waters. NOAA will subsequently issue, in the Federal Register, notice of availability of the draft policy and provide an opportunity for formal public comment on the draft policy after it is prepared. Note that HABHRCA provides the United States Environmental Protection Agency (EPA) with comparable authority for determining freshwater hypoxia or HAB events of national significance. The EPA will issue a separate notice to solicit comments on freshwater hypoxia or HAB events. Comments close September 9th. [More information](#).

### Draft Policy on Guidelines for Obtaining Approval of Backflow Prevention Methods in Drinking Water Treatment Plants

DDAGW seeks comments on the draft policy document, [ENG-20-001](#): Guidelines for Obtaining Approval of Backflow Prevention Methods in Drinking Water Treatment Plants. This document was developed in consultation with Ohio Section AWWA – Technology Committee to provide technical guidance to the regulated community and consultants concerning backflow prevention requirements. Please submit comments or questions to [DDAGW\\_Rulecomments@epa.ohio.gov](mailto:DDAGW_Rulecomments@epa.ohio.gov) by September 5th, 2019.

# Upcoming Events

## Understanding Algal Blooms: State of the Science Conference - September 12th

The 4th annual Understanding Algal Blooms: State of the Science conference in Toledo, Ohio will highlight current scientific knowledge related to algal blooms. Research and outreach leaders will present findings from recent studies and identify important areas of uncertainty.

The conference has been approved as professional development for 5.25 contact hours by the Ohio EPA.

[Register](#)

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## Algae Bloom, HABs and Toxic Algae Remediation Workshop - September 10th and September 11th

Join solutions-oriented stakeholders, algae bloom, HABs, toxic algae and red tide researchers in collaboration with bloom remediation technology experts as they tackle these devastating issues through open collaboration. To educate and address potential algae bloom remediation technology solutions that work outside the lab, are scalable and economically viable today. The response has been overwhelmingly positive. [More information.](#)

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## Ohio Section of American Water Works Association Annual Conference - September 10th to September 13th

The annual meeting of the Ohio Section American Water Works Association will be held at Cleveland, OH from September 10th to September 13th. [More information.](#)

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## 2019 Ohio Public Interest Environmental Law Conference - September 13th

Ohio State's Environmental Professionals Network is excited to co-host the 2019 Ohio Public Interest Environmental Law Conference titled, "Environmental Justice and Equity for All" with the Ohio Environmental Council, Cleveland-Marshall's Environmental Law Society, Ohio State's Energy & Environmental Law Society, and University of Toledo's College of Law. This conference will feature breakfast, lunch and extended networking and educational components. [More information.](#)

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## Tinker's Creek Watershed Partners Ethics & Engineering Professional Development - September 17th

Tinker's Creek Watershed Partners is hosting their third Ethics & Engineering Professional Development workshop to offer Engineers 2.5 ethics CEUs on September 17, 2019 at the Watershed Stewardship Center in Parma, Ohio. This day will include presentations from The Ohio Board of Registration for Professional Engineers and Surveyors. Speakers include: *Jason McLean*, Enforcement Supervisor, and *John Greenhalge*, Executive Director. [More information.](#)

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## Water Environment Federation's Technical Exhibition and Conference - September 21st to September 25th

WEFTEC is the largest conference of its kind in North America and offers water quality professionals from around the world with the best water quality education and training available today.

Also recognized as the largest annual water quality exhibition in the world, the expansive show floor provides unparalleled access to the most cutting-edge technologies in the field; serves as a forum for domestic and international business opportunities; and promotes invaluable peer-to-peer networking among registrants. A wide range of topics and focus areas allow registrants to design their own, unique learning experience while earning up to 16.5 Professional Development Hours (PDHs) for continuing education units and eight general Contacts Hours per day visiting the Exhibition. [More information.](#)

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## ORBCRE - ORBA Symposium at Ohio University - October 2nd to October 4th

Ohio University invites you to the 2019 Ohio River Basin Consortium for Research and Education (ORBCRE) Symposium in Athens, Ohio. This year's theme, "Managing our Water in a Changing World: from Social, Environmental, and Policy Perspectives," promotes research, education, and discussion related to environmental concerns in the Ohio River Basin. [More information.](#)

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Have an event you'd like us to feature in our Newsletter? Email us at [OhioWRC@osu.edu](mailto:OhioWRC@osu.edu)!

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