

# OHIO WATER RESOURCES CENTER

*2019-2020 ANNUAL REPORT*



# EXECUTIVE SUMMARY

The Ohio Water Resources Center (Ohio WRC) is the federally-authorized and state-designated Water Resources Research Institute for the State of Ohio. Our mission is to enable and conduct state-relevant water-related research; foster collaboration among academic investigators, governmental bodies, and water professionals; train the next generation of water scientists; and educate the public on water resources issues in Ohio. With evidence-based scientific information, we form links between water researchers and those who manage and use water.

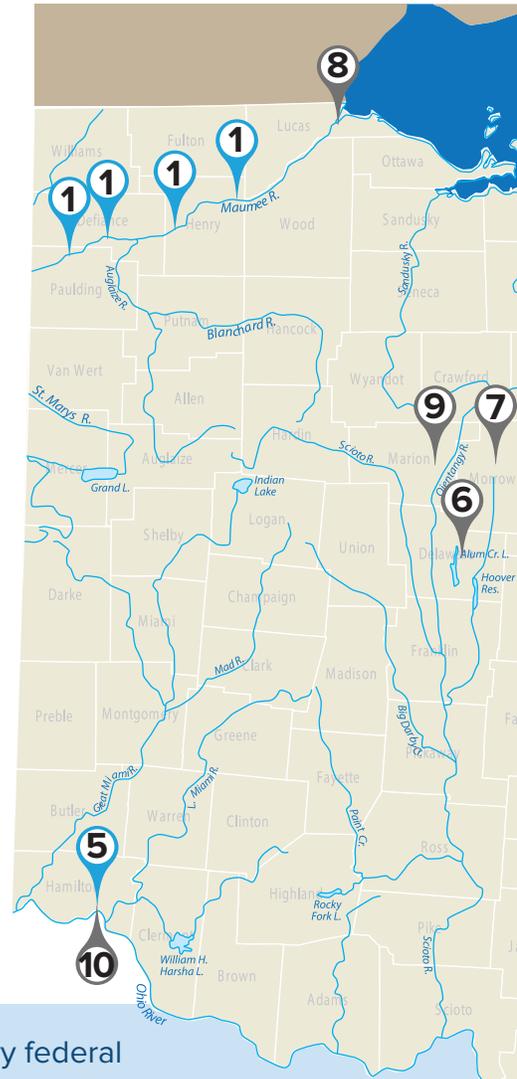


Ohio WRC graduate administrative associate, Matt Young and Co-Director, Dr. Linda Weavers visiting Capitol Hill.

## 2019-2020 ACTIVITIES

### Water Quality Sample Ohio WRC Projects

- 1 **Dr. McCarthy, WrsU**, is investigating the fate of nitrogen discharged into the Maumee River from the surrounding watershed to better understand its role in harmful algal blooms (HABs).
- 2 **Drs. May and Weavers, OSU**, are measuring PFAS (a.k.a., forever chemicals) in surface waters, air and soils to determine the spread of PFAS from a manufacturing site and pathways that control their distribution.
- 3 **Dr. Davies, OSU**, developed bog classification maps creating a resource that categorizes priority areas for restoration potential.
- 4 **Dr. Villa, OSU**, is unraveling the effect of hydrology on nutrient accumulation rates in the Old Woman Creek National Estuary Research Reserve.
- 5 Cincinnati's public water supply relies on the Ohio River for 85% of its source water, making it vulnerable to supply disruptions as a result of contamination of the Ohio River. The hierarchical modeling workflow developed by **Dr. Ray, UC**, enables water utilities along rivers to prepare and plan for contamination events.



By the Numbers  
2015 to 2020

The Ohio WRC funded research across Ohio with **34 projects at 7 Ohio Universities**



For every federal dollar invested **\$10** was leveraged from other sources



# ADVISORY BOARD

The distinguished members of our Advisory Board provide critical expertise and guidance for advancing our work across all areas.

**Kathryn Barter**  
Co-Director  
OSU, Sustainability Institute

**Sandy Eberts**  
Deputy Program Coordinator  
USGS

**Dorota Grejner-Brzezinska**  
Senior Associate Vice President for Research  
OSU, Office of Research

**Brian Hall**  
Assistant Division Chief  
Ohio EPA, Division of Surface Water

**Ken Heigel**  
Executive Director  
Ohio Water Development Authority

**Tiffani Kavalec**  
Division Chief  
Ohio EPA, Division of Surface Water

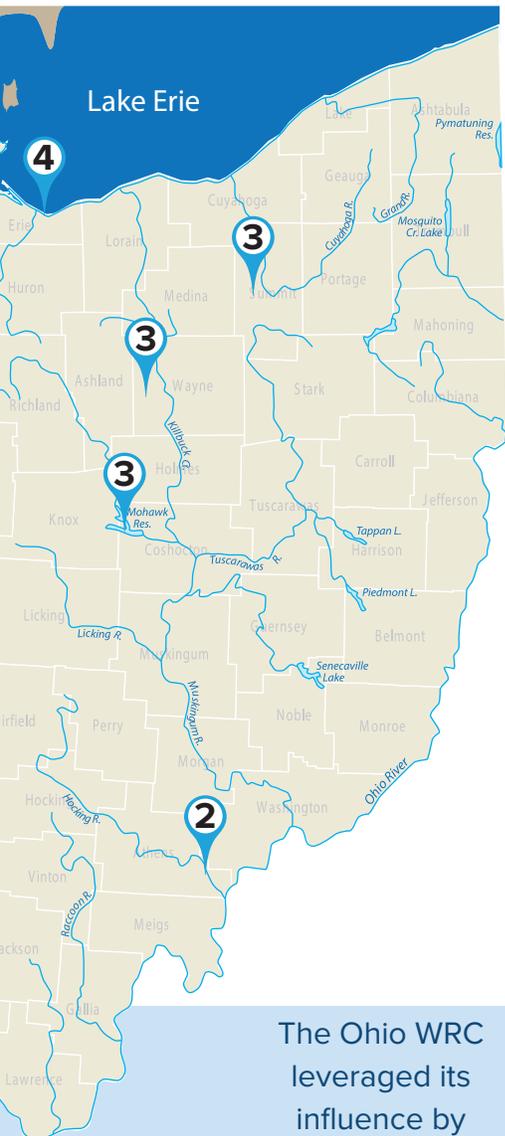
**Amy Jo Klei**  
Division Chief  
Ohio EPA, Division of Drinking and Ground Water

**Gregory Nageotte**  
Executive Board  
Water Management  
Association of Ohio  
Grants and Watershed Administrator  
Ohio Department of Agriculture

**David Straub**  
Science Chief/  
Supervisory Hydrologist  
USGS, Ohio-Kentucky-Indiana Water Science Center

**Christopher Winslow**  
Director  
Ohio Sea Grant

## 2019-2020 ACTIVITIES



### Water Technology Sample Ohio WRC Projects

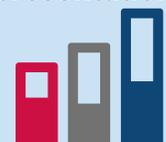
- 6 In partnership with Ohio EPA and stakeholders, **Drs. Bohrerova and Weavers, OSU**, are creating design standards for emerging drinking water treatment technologies that will allow communities in Ohio to install more appropriate and cost-effective technologies.
- 7 Drinking water reservoirs are under threat from algal blooms in Ohio and **Drs. Weavers and Bohrerova, OSU**, are investigating whether ultrasound, an emerging chemical-free technology, will suppress these blooms.
- 8 **Dr. Lenhart, OSU**, is testing cyanotoxin removal using activated carbon in order to provide guidance to utilities with HABs ensuring that treatment goals are met.
- 9 **Dr. Hull, OSU**, is quantifying the effectiveness of UV disinfection during high turbidity events at drinking water treatment plants which may occur during filter upset. If UV disinfection is effective with these challenging waters, drinking water plants will have reassurance that this additional barrier is protective against water pathogens.
- 10 **Dr. Soryong Chae, UC**, has created a self-cleaning membrane filtration technology that will allow for development of novel engineering solutions for the mitigation of membrane fouling and/or recovery from membrane fouling.



The Ohio WRC leveraged its influence by devoting **570 hours** on boards & committees



Ohio WRC research has produced **106 publications, theses, & presentations**



# GETTING THEIR FEET WET:

## Training Professionals and the Next Generation

### Outreach

The Ohio Water Resources Center (WRC) leadership leverages their influence to speak at universities, seminars and conferences to transfer technical and research information to public and state stakeholders to enact lasting change in our state. We strive to share relevant information with the community in easily accessible formats, through our involvement in local activities, newsletters and our webpage.

#### OUTREACH EXAMPLE

### Stockholm Junior Water Prize

In June 2019, The Ohio State University hosted the Stockholm Junior Water Prize national competition. 53 high school students from 45 states traveled to Columbus to compete for the coveted and prestigious youth award for a water science project. The winner of this annual competition receives a \$10,000 scholarship and a trip to Stockholm to represent the US at the international competition.



We, at the Ohio WRC, are excited that The Ohio State University is hosting this competition for the next two summers allowing us an excellent opportunity to recruit the next generation of water scientists.



### By the Numbers 2015 to 2020



# 1,070

Volunteer hours  
through training  
and activities

# 73

Students trained for  
a water resources  
profession

# \$11,300

Saved in Professional  
Development Hour  
(PDH) credits earned



<http://wrc.osu.edu>

#### Ohio Water Resources Center

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