

Arkansas Water Resources Center

2020 Annual Summary

We have helped local, state, and federal agencies address our water challenges for 55 years.

We succeed in this effort through robust research and water quality monitoring, education and training outreach, and information transfer to stakeholders throughout the State and region.

Photo credit: Above the Buffalo River, January 2020, by Lillie Haddock.

2020 HIGHLIGHTS

21
publications



11
students
supported



6
research
projects
funded by us



approximately
\$440,000
in external
funding



465
eNewsletter
subscribers



700
Facebook
followers



over
2,700
ScholarWorks
downloads



22,800
analytes
measured



Digital
outreach to
stay connected
during COVID



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2020 104(b) FUNDED PROJECTS

We funded six research projects, including four faculty proposals, one project that supplemented graduate student research, and one in-house research study.

Nonpoint Source Pollution and Water Quality under Increasing Pressure from Poultry Agriculture in the Eleven Point and Lower Black River Watersheds, Dr. Allyn Dodd, Division of Math and Science, Lyon College

In Situ Harmful Algal Bloom Mitigation: Net Design to Enhance Coagulation and Photocatalytic Degradation Mechanisms, Drs. Lauren Greenlee and Wen Zhang, Dept. of Chemical Engineering, University of Arkansas, & Dept. of Civil Engineering, University of Arkansas

Is rice as effective as barley straw or hydrogen peroxide in inhibiting cyanobacterial blooms and reducing microcystin concentrations?, Dr. Mary Savin, Dept. of Crop, Soil, and Environmental Sciences, University of Arkansas

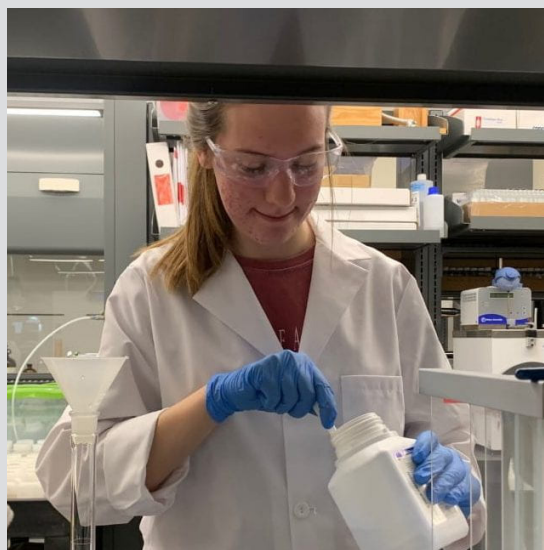
Mechanisms, Kinetics and Toxicity of Microcystin-LR Biodegradation by Free and Immobilized Enzymes, Dr. Audie Thompson, (Formerly) Dept. of Chemical Engineering, University of Arkansas

Integrated Electrocoagulation Membrane Distillation Crystallization for Treating Hydraulic Fracturing Produced Water, Mahmood Jebur, Yelyzaveta Bachynska, and Dr. Ranil Wickramasinghe, Dept. of Chemical Engineering, University of Arkansas

Why and When does Microcystin Exceed Recreational Guidelines at Lake Fayetteville?, Dr. Brian E. Haggard, Dr. Bradley J. Austin, and Erin Grantz, Arkansas Water Resources Center, University of Arkansas



STUDENT TRAINING



Honors Freshman Engineering Research -

AWRC Director Brian Haggard mentored Kendele Kramer, an undergraduate student from the University of Arkansas Biological and Agricultural Engineering Department, on her honors research project. Kendele's project explored research questions about harmful algal blooms (HABs) in Lake Fayetteville.

Kendele was interested in understanding how HABs respond to chemical treatments. She evaluated the dose-response relationships for reducing algal growth and abundance using three algicides. Kendele says the big takeaway from her research is that water resource managers can gather information and develop an action plan to quickly mitigate a bloom. Rapid response reduces potential negative impacts to recreation and tourism, as well as human and animal health.

Kendele took first place for "best overall research project" as part of the Honors Innovation Symposium in 2020.