

From the Director's Desk ...

Summer in the southeastern United States can be very hot and humid. Scientists and students alike are in the fields collecting data relating to their research project. It will be many of these people who will be presenting at the 2020 Mississippi Water Resources Conference. More details will become available in both the next newsletter issue as well as the institute's listserv. If you would like to continue receiving updates on MWRRI activities, please let Jessie Schmidt know that you want to be added to the list. You can email her at jessie.schmidt@msstate.edu.



Again in this issue, we feature one of the MWRRI funded researchers. Dr. Gary Ervin, Professor in the Department of Biological Sciences at the Mississippi State University. Dr. Ervin is funded with a USGS 104b research project on "Aquatic Vegetation management to Enhance Multiple-User Benefits of Southeastern Wetlands."

Watch your email for updates on funding opportunities, job opportunities, as well as legislation. Previous newsletter issues are available for review on the institute's website, www.wrri.msstate.edu. Click on the Publications tab and scroll down for past *Proceedings* and Newsletters.

Wishing you a continued enjoyable summer,

Jason

Jason Krutz, Ph.D.

Researcher Profile: Dr. Gary Ervin

Professor, Department of Biological Sciences, Mississippi State University

Tell us a little bit about your background and your current position.

I have a B.S. and Ph.D. in Biological Sciences from the University of Alabama and joined the Biology faculty at Mississippi State in August 2001. My doctoral research focused on the rush *Juncus effusus* and how it interacts with other plant species in freshwater wetlands. I've tried to expand on that general theme during my time at MSU, by continuing to do research that aims to understand how plants influence the structure and function of freshwater wetlands.



Previous students in my lab have looked at plants, microbes, and insects, and I like to think we have contributed some important insights into the ecology and conservation of wetlands in Mississippi and beyond. Interestingly enough, much of that work also was funded by grants from the Mississippi Water Resources Research Institute. Some of my current students, Kennedy Calhoun, Autumn Dunn, and Cory Shoemaker, are examining various ways wetland plants respond to human activities in Mississippi and how management of those plant species may influence quality of our freshwater resources.

What are your current research activities?

We are in the process of winding up some work on restored wetlands in the northern portion of the Mississippi Delta. In that work, we looked at how land use affects the species of plants occurring restored wetlands and whether the plant species present may be effective indicators of water quality. We collaborated with Kevin Nelms, of the USDA NRCS, in identifying wetlands for that research, as well as in identifying important wetland and water quality questions that may help manage water resources in the Delta. The primary student on that project (and co-author of the



proposal that funded the work), Cory Shoemaker, has recently completed his dissertation and will receive his Ph.D. in December 2018. Cory and a former Master's student, Evelyn DiOrio, already have published one peer-reviewed journal article from that work, and several more are in the works.

A brand-new Master's degree student, Kennedy Calhoun, is working on our new WRRI-funded project, which is aimed at discovering effective methods for managing problematic wetland plants on regional lakes and reservoirs. That work, co-written with Gray Turnage (MSU GRI) is being conducted in cooperation with the Sam D. Hamilton Noxubee National Wildlife Refuge (NNWR). We currently are running tank experiments to screen seven potential herbicides, a few of which will be field tested at NNWR during 2019.



How does the Water Resources Research Institute fit into your future plans? How can we help you be successful?

The Water Resources Research Institute has funded research in my lab since early 2002. The first project investigated managed wetlands on property in north Mississippi managed by the Audubon Society. That work grew into a broader investigation into the use of wetland plants as tools for estimating the overall quality of wetlands, using data collected in 50 wetlands scattered across the northern third of the state (a project also funded in part by MS WRRI). Those first grants funded two graduate students and two undergraduates and resulted in approximately a dozen peer-reviewed journal articles and set the stage for other externally funded research that has been conducted in my lab. The two graduate students went on to enter doctoral programs at the University of Illinois and Oklahoma State. One currently is employed by the US Army Corps of Engineers and nearing completion of her Ph.D., and the other recently accepted a faculty position at Murray State University. In total, I have had seven graduate students supported on grants from the MS WRRI.



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Aside from the grant program administered by the institute, the annual conference has been an important venue for graduate student presentations; many of my students' first research presentations have been at the conference. It also is a terrific place to learn about current water issues within the state. I can safely say that much of the success I have had at MSU can be attribute in large part to the WRRI, and I feel fortunate to have had access to this resource.

Upcoming Events

- American Stormwater Institute, LLC has scheduled a two-day course on November 12-13, 2019 to address principles and practices of erosion and sediment controls and pollution prevision, presentation of skills to assess conditions that could affect stormwater quality, and the effectiveness of control measures.
- There will also be a one-day online Qualified MS4 Stormwater Inspector training. <https://americanstormwaterinstitute.com/classes-offered/ms4-stormwater-inspector-online-course/>

Registration information <https://americanstormwaterinstitute.com/event/qualified-ms4-stormwater-permit-compliance-professional-ms4-scp-november-11-12-2019-biloxi-ms/>

For more information, call 833-786-7698 and ask for Michele.

SAVE THE DATE

March 31 – April 1, 2020 2020 Mississippi Water Resources Conference, Jackson, MS

More details regarding abstract submission, registration, hotel accommodations, and exhibitors and sponsorships will be released in future newsletter issues.

Do you have a publication that you would like to share? Consider distribution through the MWRRI newsletter. Contact Jessie Schmidt for information.

Do you have an upcoming event that all those interested in water-related issues and agriculture would find interesting? Considering adding it to the newsletter and/or listserv. Also available is the MWRRI Twitter account - @MS_WRRI.

About the Mississippi Water Resources Research Institute (MWRRI)

The institute exists as both a federal and a state research unit. Established in 1964, the MWRRI is one of 54 institutes (one in each state, The District of Columbia, Guam, Puerto Rico, and the Virgin Islands) that form a national network to solve water problems of state, regional, or national significance. In 1983, the Mississippi legislature formally designated the MWRRI as a state research institute. Federal funds designated for the institute are used to consult with state water officials to develop coordinated research, technology transfer and training programs that apply academic expertise to water and related land-use problems. These various activities are funded through an annual grant from the United States Geological Survey (USGS). Mississippi state appropriations provide additional funds for cost share. The institute also assists state agencies in the development of a state water management plan, maintaining a technology transfer program, and serves as a liaison between Mississippi and federal funding agencies.

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