

## From the Director's Desk ...

Our spring water resources conference is fast approaching! It is scheduled for Tuesday-Wednesday, April 3-4 at the Jackson Hilton. Two plenaries and fourteen technical panels are planned consisting of 62 oral presentations, as well as a poster session with 14 posters and presenters. Our Tuesday luncheon plenary will feature Jimmy Palmer and Bennett Bearden who will discuss: *Who's on first? The Status of Water Policy in Mississippi and Alabama*. During our Wednesday luncheon plenary Pearl Riverkeeper Abby Braman and Dr. Ron Cossman will address: *How important are stakeholders and can their impacts be measured?*



This year we will again feature a student oral presentation competition and student poster competition. Eight students are submitting posters and will be available to discuss their projects and six students have submitted abstracts and will be presenting orally during the technical sessions. Competition winners will be presented during Wednesday's lunch plenary.

I hope you are planning to attend the welcome reception scheduled for Tuesday evening from 5:00-6:30 which will include refreshments and hor d'oeuvres. This popular event provides opportunities for interaction among our various water resource communities – research, management, policy, and stakeholders. Also, I hope you will consider serving as a conference sponsor and/or exhibitor. A *Sponsor and Exhibitor Reply Form* is included in this newsletter.

I look forward to seeing you at the conference!

*Jason*

Jason Krutz, Ph.D.

## Registration Open for 2018 Water Resource Conference April 3-4, Jackson Hilton

From monitoring to modeling... from irrigation efficiency to alternative water supplies... from water treatment and management to water storage and reuse... from nutrient reduction to surface water-groundwater interaction... from the Delta, through the uplands, and to the coast... a wide range of oral and poster presentations are scheduled during our upcoming 2017 Water Resources Conference to be held at the Jackson Hilton on April 3-4. Researchers and students from colleges and universities as well as water resources planners, managers, and policy-makers from state and federal agencies, industry, and other backgrounds will discuss 72 research projects and management programs. Presentations are organized topically in 14 technical sessions, a poster session, and two plenaries.

### Welcome/Conference Overview – Tuesday, April 3 – 8:00

**L. Jason Krutz**, Ph.D., Director, Mississippi Water Resources Research Institute

### Luncheon Plenary – Tuesday, April 3 – 12:00

Topic: ***Who's on first? The Status of Water Policy in Mississippi and Alabama***

Speaker: **Jimmy I. Palmer**, J.D., P.E.; **Bennett Bearden**, J.D.

### Luncheon Plenary – Wednesday, April 4 – 12:10

Topic: ***How important are stakeholders and can their impacts be measured?***

Speaker: **Ron Cossman**, Ph.D., Social Science Research Center, Mississippi State University; **Abby Braman**, Pearl Riverkeepers

### Technical Sessions: *(3-5 presentations/session)*

1. Coastal Issues
2. Measurements and Mechanisms for Earthen Levee and Gully Erosion
3. Streamflow Alteration Assessments to Support Bay and Estuary Restoration in Gulf States
4. BMP Effectiveness
5. Challenges to Establishing Targets and Practices for Managing Nutrients in Delta Waterbodies I
6. Streamflow & Sedimentation
7. Challenges to Establishing Targets and Practices for Managing Nutrients in Delta Waterbodies II
8. Irrigation Efficiency and Conservation
9. Surface Water – Groundwater Interaction
10. Water Treatment

11. Groundwater Availability in the Mississippi River Alluvial Plain I

12. Reservoirs & Streams
13. Groundwater Availability in the Mississippi River Alluvial Plain II
14. Management of Water Resources in Mississippi

**Student Competitions:** (1<sup>st</sup> - \$150, 2<sup>nd</sup> - \$100, 3<sup>rd</sup> - \$50 in each category)

- Oral Presentation
- Poster

**Welcome Reception:** (refreshments and hor d'oeuvres)

Tuesday, April 3 from 5:00 – 6:30, Salons B&C

**Sponsors and Organizers:**

Mississippi Water Resources Research Institute  
U.S. Geological Survey Mississippi Water Science Center  
Mississippi Department of Environmental Quality  
Neel-Schaffer, Inc.  
MS Soil and Water Conservation Commission  
Weyerhaeuser

Early registration through March 9 for the conference is \$225 for professionals and \$50 for full time students. After March 9, registration will be \$275 for professionals and \$100 for full time students. A block of rooms at the hotel have been reserved until March 3 for a conference rate of \$116/night. Registration and lodging information (and online access), agenda, abstracts, and other information is now available for review on MWRRI's website:

<http://www.wrri.msstate.edu/conference/index.asp> .

We are looking for conference sponsors as well as volunteers to judge the student poster competition. Sponsors and exhibitors should complete the forms and return them to Jessie Schmidt. We hope to see you in Jackson on April 3-4!

**Register now at [www.wrri.msstate.edu](http://www.wrri.msstate.edu)!**

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## Notice of Advisory Board Meeting

Immediately following the water resource conference, we will hold a meeting of MWRRI's Advisory Board from 2:00-3:00 p.m. in the Port Gibson Board Room (take the elevator to the Penthouse).

# 2018 Annual Mississippi Water Resources Conference

Hilton Jackson, Jackson, MS  
 April 3-4, 2018

## Sponsor & Exhibitor Application



Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company/Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

		<u>Full Sponsor</u>	<u>Co-sponsor</u>
<b>Breakfast</b>	Single Day – \$600 (full sponsor) or \$300 (co-sponsor)	<input type="checkbox"/>	<input type="checkbox"/>
	Both Days – \$1,000 (full sponsor) or \$500 (co-sponsor)	<input type="checkbox"/>	<input type="checkbox"/>
<b>AM Break</b>	Single Day – \$400 (full sponsor) or \$200 (co-sponsor)	<input type="checkbox"/>	<input type="checkbox"/>
	Both Days – \$600 (full sponsor) or \$300 (co-sponsor)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Luncheon</b>	Single Day – \$1,000 (full sponsor) or \$500 (co-sponsor)	<input type="checkbox"/>	<input type="checkbox"/>
	Both Days – \$1,800 (full sponsor) or \$900 (co-sponsor)	<input type="checkbox"/>	<input type="checkbox"/>
<b>PM Break</b>	(First Day) \$400 (full sponsor) or \$200 (co-sponsor)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Icebreaker</b>	\$1,200 (full sponsor) or \$600 (co-sponsor)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Student Oral Competition</b>	\$300 (full sponsor)	<input type="checkbox"/>	
<b>Student Poster Competition</b>	\$300 (full sponsor)	<input type="checkbox"/>	
<b>Exhibitor Table</b>	Both Days – \$500 (full sponsor)	<input type="checkbox"/>	
<b>Exhibitor Space (for standup exhibits)</b>	Both Days – \$500 (full sponsor)	<input type="checkbox"/>	

- Sponsorships of \$500 and above will receive one (1) complimentary registration. A second person from the same organization can register for \$150.

- All sponsors and exhibitors will be recognized on the 2018 MWRC poster (company logo), from the podium, at luncheons, and in the program book as well as online on the conference website.
- In order to be included in the program book, all payments must be received no later than Friday, March 1, 2018.
- **Sponsorship Questions:** Please contact Jessie Schmidt, [jessie.schmidt@msstate.edu](mailto:jessie.schmidt@msstate.edu)

**Please email this form to Jessie Schmidt, [jessie.schmidt@msstate.edu](mailto:jessie.schmidt@msstate.edu)  
Or mail to MWRRI, Box 9547, Mississippi State, MS 39762**

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## MWRRI/USGS 104b Water Research Program 2018 Award Recommendations

The 104b Water Research Program was established under the provisions of section 104 of the Water Resources Research Act of 1984 (Public Law 98-242), as amended by Public Laws 101-397, 104-147, 106-374, and 109-471. Section 104 of the Water Resources Research Act directs the Secretary of the Interior to administer program grants to Institutes and Centers established under the provisions of section 104(a) of the Act. Water Resources Institutes or Centers have been established in each of the 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. Responsibility for administration of the State Water Resources Research Institute program has been delegated to the U.S. Geological Survey (USGS).

MWRRI's Advisory Board met on November 15, 2017 to discuss proposals received in response to MWRRI's 2018 RFP. Pursuant to recommendations made during this meeting, MWRRI has submitted the following projects for funding through USGS' 2018 104b Water Resources Research Program:

*Microplastics in the Mississippi River and Mississippi Sound: concentrations, sources, sizes, types, and loadings to the northern Gulf of Mexico* – Dr. James Cizdziel, Associate Professor, Department of Chemistry and Biochemistry, University of Mississippi (Principal Investigator)

*Aquatic vegetation management to enhance multiple-user benefits of southeastern wetlands* – Dr. Gary Ervin, Professor, Department of Biological Sciences, Mississippi State University (Principal Investigator); Gray Turnage, Research Associate, Geosystems Research Institute, Mississippi State University (Co-Investigator)

## Researcher Profile:

## Joby Czarnecki, Ph.D., Mississippi State University

### 1. Tell us a little about your background and your current position.

I grew up in a small farming town in northwest Oklahoma. I got my first real summer job at the local Farmers Co-op in when I finished High School. I was already accepted at Oklahoma State University and majoring in Psychology. My time at the Co-op convinced me that my future was elsewhere. My junior year, I changed my major to Plant and Soil Science. I lost a lot of hours, but it was a good decision for me. I finished B.S. and M.S. degrees at OSU. I knew from the beginning that I wanted to be in precision agriculture, and was lucky to be taught by some of the pioneers of that field, and also to intern with one of the major players on the industry side, who also had a headquarters in Stillwater, where OSU is located. It's been a long, winding road, but eventually all the twists and turns allowed me to arrive at a place in my life where I had the skills, experience, and education I needed to obtain a faculty position here at MSU in the Plant and Soil Sciences Department, where I had obtained a Ph.D. several years prior. I am housed at the Geosystems Research Institute, where I was given my first job at MSU when I moved to Starkville 13 years ago. In my current position as an Assistant Research Professor, I work with unmanned aerial systems (UAS) applications for agriculture. I get to collaborate with many different types of scientists and engineers to introduce geospatial technology approaches into their existing research programs, and open up new lines of inquiry.



*I'm pleased that we are able to offer student development opportunity in our work. My two student workers were able to obtain hands-on experience with UAS operation. My student worker, Lucas Whittenton (center), even earned his remote pilot certification from the FAA during the summer. Another plus of using a UAS to collect data - I can get by wearing a dress to do field work! But not every day.*

### 2. What are your current research activities and interests?

My long-term research portfolio focuses on use of geospatial approaches for precision placement of conservation practices, or “precision conservation” as it’s called. The main focus of my recent research has using unmanned aerial systems to monitor and quantify erosion and sediment transport. I am fortunate to participate in the team effort on Catalpa Creek. In support of that project, I am using low-cost UAS to create 3D surfaces of the main channel and selected tributaries and upland areas. This process is referred to as “structure from motion.” The UAS have proven useful for rapidly characterizing eroded landscapes and identifying areas of concern. There is still a need to determine the limits of the technology for quantifying the rate of erosion, which is a current focus of my collaborative research. This month, I am starting the tracer portion of the research, and I will be testing the ability of the UAS to detect a metallic fluorescent tracer. That work is focusing on beach nourishment, but the technology will transfer to our agriculture landscapes if successful. It’s a very exciting time in the UAS world and I am optimistic that conservation can benefit from this ever more affordable and accessible technology.



*The new low cost UAS offer streaming video capability. We are able to view in real time on a tablet the view from the UAS. Here, our UAS pilot, David Young, operates the aircraft, and I am able to view the video stream on the tablet.*

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

MWRRI has been instrumental in my past and current plans already. A serendipitous phone call from Jessie was the catalyst for so much of the great work that has gone on in Catalpa Creek. Richard has been so faithful to push forward on finding support for our team effort in the watershed. I am also grateful to MWRRI for funding a portion of my structure from motion work in the watershed. With that funding, I have been able to continue building my research program and support development of my long-term portfolio. As we find UAS-based solutions for monitoring and quantifying erosion, I will look to MWRRI to help facilitate outreach and training of other scientists on the methods we will develop.



*Preliminary trials on structure for motion using soccer cones for reference points. We measure between the cones on the ground and in the image to validate our 3D surface model.*

We are able to also make some really neat visuals of our work that can be viewed by stakeholders. This link will access one of those videos. <https://goo.gl/gWCfmv>

Also, you can point your capable smartphone at the QR code and access the same file.



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## 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.

If you or someone that you know would like to receive this publication please email [jessie.schmidt@msstate.edu](mailto:jessie.schmidt@msstate.edu) to be added to the MWRRI listserv.

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