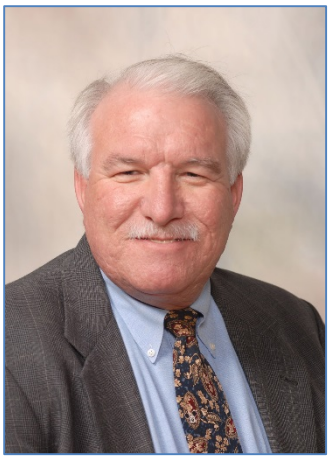
MWRRI Newsletter

Summer Issue **August 2015**

From the Director's Desk …

Introducing Bill Herndon, MWRRI Interim Director



On May 1, 2015 Dr. Cary (Bill) Herndon, Jr. was named Interim Director of the Mississippi Water Resources Reasearch Institute. Dr. Herndon also serves as Associate Vice President for the Division of Agriculture, Forestry and Veterinary Medicine (DAFVM) for Mississippi State University. Prior to his appointment as Associate Vice President of DAFVM, Dr. Herndon served as the head of the North Mississippi Research and Extension Center at Verona, which supports agriculture and forestry research and outreach activities in northeastern Mississippi. He previously served for almost 25 years on the faculty in the Department of Agricultural Economics. Assignments during that time included departmental graduate program coordinator, Cochran Fellows program manager and interim department head. He also served for three years as interim director of the Office of International Programs at MSU.

Dr. Herndon received his bachelor's and master's degrees from Texas A&M University and his doctorate from Oklahoma State University, all in agricultural economics. He has served as president of the Southern Agricultural Economics Association and MSU's chapter of Gamma Sigma Delta, the honor society of agriculture.

From Bill …

It is my privilege to serve as Interim Director of MWRRI. In Mississippi, like elsewhere in the country, we are facing serious challenges to the sustainability of our ground and surface water resources. These challenges not only significantly affect agriculture, industry, recreation, and public water supplies; but also greatly influence the quality of life of all citizens. I look forward to working with you as we focus and advance our research and management efforts to address these concerns regarding both water quantity and quality. Together, I believe we can make a difference!

Respectfully,

Bill Herndon

Change of Leadership: Joe Street Retires

Former Interim Director of MWRRI, Joe Street retired April 30, 2015 after serving MSU for 34 years in various leadership, administrative, and research capacities. When he retired, he also served as Associate Director of the Mississippi State University Extension Service. While at MSU, Joe served for years as head of the Delta Research and Extension Center in Stoneville and head of the North Mississippi Research and Extension Center in Verona. Joe is also retired from military service, with 23 years in the Mississippi National Guard and three years with the U.S. Army. During Joe's tenure at MWRRI, significant progress was made with the development of a new 5-year strategic plan to guide the Institute's activities, filling out MWRRI's advisory board to its full legislatively-prescribed complement, steering a major revision of MWRRI's research priorities to better foster currently needed applied research, incorporating social science into the Institute's water research efforts, successfully implementing the first year work plan of the Center of Excellence for Watershed Management, overseeing the conceptualization of the Catalpa Creek Watershed Restoration & Protection Project and Watershed D.R.E.A.M.S. (Demonstration, Research, Education, Application, Management and Sustainability) Center, and expanding MWRRI's research efforts. Great job, Joe!!!

RESTORE Act Update

On July 2, 2015, the State of Mississippi, the United States, and the other Gulf states reached Agreements in Principle (AIP) with BP for a potential settlement of claims totaling approximately $18.732 billion arising from the April 20, 2010 Deepwater Horizon oil spill in the Gulf of Mexico. The final settlement will cover outstanding federal and state claims including Clean Water Act civil penalties (distributed via the RESTORE Act), natural resource damage claims under the Oil Pollution Act (OPA), state economic claims, and local government claims. The agreement forges a path for the future environmental and economic restoration of the Gulf Coast. Information about the agreement and RESTORE activities and opportunities can be accessed at: www.restore.ms.

The RESTORE Council is anticipating the release of the Draft Funded Priorities List in August. Once released, public comment will be solicited. Draft priorities will be those from the Council-Selected Restoration Component. Selections will be available for review at: www.RestoretheGulf.gov.

2015 Mississippi Water Resources Conference

April 7-8, 2015

The annual Mississippi Water Resources Conference, hosted by MWRRI, was held at the Jackson Hilton on April 7-8, 2015. More than 120 researchers and students from colleges and universities as well as water resources planners, managers, and regulators from state and federal agencies, industry, and other backgrounds described projects and outcomes from over 50 water resources research and watershed-based projects that addressed the following session topics:

- Water Quality of the Gulf of Mexico
- Gulf of Mexico Coastal Issues
- Understanding the Impacts of Coastal Water Quality on Ecological and Human Health
- Agricultural Water Management
- Sustainable Agricultural Water Management Strategy, Technology and Practice
- Spatial and Temporal Controls on Surface and Groundwater Hydrology in the Mississippi Delta
- Water Resource Management in the Mississippi Delta
- Impacts of Reforestation and Agricultural and Forestry Management on Surface Water Quality in the Lower Mississippi River Basin
- Phosphorus Dynamics in the Mississippi Landscape
- Watershed Management
- Wetlands
- Groundwater
- Policy
- Methodology

Richard Ingram, MWRRI Associate Director, and Jessie Schmidt, MWRRI Coordinator, present retirement plaque to Dr. Joe Street during opening plenary.

In addition, a poster session included exhibits of 14 research and watershed-based projects. A feature of the poster session included a student poster competition with awards for 1st, 2nd, and 3rd place.

During the opening plenary session, Don Underwood, Executive Director of the Mississippi Soil & Water Conservation Commission discussed current water resources issues across the state. George Ramseur, Director, Office of Coastal Restoration & Resilience, Mississippi Department of Marine Resources, then discussed completed and ongoing restoration activities necessitated after the Gulf Oil Spill and Hurricane Katrina.

During Tuesday's lunch plenary, Mike Freiman, Surface Water Division Chief, and Greg Jackson, Modeling and TMDL Branch Chief, with the Mississippi Department of Environmental Quality's Office of Pollution Contral, presented MDEQ's new Prioritization Framework for Managing, Preserving, and Storing Mississippi's Water Resources. Following the first day's activities, more than 60 conference attendees stayed after the technical sessions for a reception hosted by MWRRI to foster networking among Mississippi's water resources management and research communities.

Mike Freiman, MDEQ

Greg Jackson, MDEQ

Dr. and Mrs. Joe Street, MSU

Good food and fellowship enjoyed by all.

Dr. Darrel Schmitz and Courtney Killian, MSU

During Wednesday's lunch plenary, Laura Bowie, Executive Director, Gulf of Mexico Alliance (GOMA) and Kim Caviness, MS Department of Environmental Quality, spoke on Gulf of Mexico Alliance – Collaboration as a Necessity for Coastal Restoration. Afterward Laura, Richard Ingram, and Jessie Schmidt presented awards to the winners of the student poster competion. The awards were sponsored by the Gulf of Mexico Alliance. Winners were:

1st Place: Juan D. Pérez-Gutiérrez, Mississippi State University, Department of Agricultural and Biological Engineering – **Water Quality Changes in On-Farm Water Storage Systems: A Seasonal Variability Analysis**

2nd Place: Aaron Macy, University of South Alabama, Department of Marine Sciences and Ecosystems Lab, Dauphin Island Sea Lab – **Buffering Wave Buffers: Implications for Accelerating Restoration Efforts in the Marsh-Mangrove Ecotone**

3rd Place: Parker Capps, University of Mississippi, Department of Environmental Engineering – **Pathogen Indicator Monitoring in the Ross Barnett Reservoir**

All presenters are asked to submit a full paper by June 1, 2015 for publication in *The Proceedings*. The publication will be released Fall 2015.

Special thanks to the following organizations whose assistance ensured the success of the conference:

- U.S. Geological Survey (planning assistance, audiovisual support);
- MS Department of Environmental Quality (planning assistance);
- Mississippi State University (implementation support);
- Laura Bowie and the Gulf of Mexico Alliance (sponsor of student poster competition);
- Mississippi State University Extension Service (sponsor);
- ENVIRON (exhibit sponsor); and
- All of our technical session facilitators/coordinators who identified and solicited speakers for their sessions.

Researcher Profile: Dr. Beth Baker

REACH Coordinator and Research Program Manager of the Water Quality Laboratory, Mississippi State University

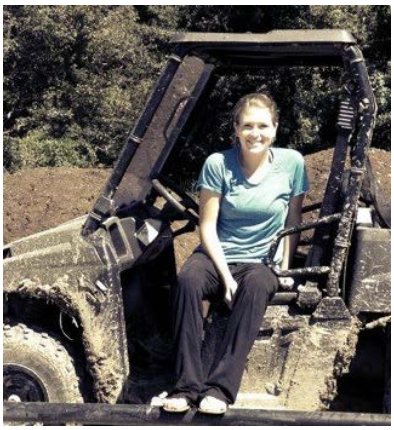
Tell us a little bit about your background and your current position.

I have a B.S. in Biomedical Science and M.S. in Cellular and Molecular Biology from St. Cloud State University, in St. Cloud, Minnesota. My M.S. research was a little different from my current work, as it focused on the effects of endocrine active compounds on fish in Minnesota lakes. I wasn't really sure I wanted to pursue a PhD, but I met Dr. Robert Kröger at a conference in Portland, Oregon and he invited me to Starkville to check out the Mississippi State University campus. I had honestly never even heard of Starkville, MS when I came down, but it only took one day and I was hooked. I've been with MSU for four years now, one as a graduate student and three as a researcher, with the Water Quality Laboratory and more recently with the REACH (Research and Education to Advance Conservation and Habitat) extension program. The past three years have offered many opportunities and challenges. I've been able to meet and collaborate with some key water resource stakeholders around the state, including Delta F.A.R.M., The Nature Conservancy, Mississippi Department of Environmental Quality, US Geological Survey, Soil and Water Conservation Association, and Farm Bureau. Also, throughout campus I've developed strong collaborative relationships with scientists in many departments that have really helped me establish my career here at MSU. All of these relationships have really helped me grow as a scientist within Mississippi and help develop the priorities of our research program around the natural resource priorities of Mississippi.

What are your current research activities?

The REACH program is currently involved in a number of edge-of-field monitoring projects looking at the effectiveness of various best management practices (BMP). In Tippah County, MS REACH has partnered with a producer and the USDA Natural Resources Conservation Service to assess the benefits of utilizing cover crops as a BMP. Throughout the delta we are working with the USGS, Delta F.A.R.M., and MDEQ to evaluate the environmental and economic benefits of utilizing tailwater recovery systems and on-farm storage reservoirs. On the coast, REACH is also currently involved in investigating the water quality benefits of implementing BMPs like bioswales, terraces, and gabion weirs at the Diamondhead Golf Course in the Rotten Bayou Watershed.

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 helped me develop a strong collaboration network throughout the state. One collaboration with the USGS and Farm Bureau has evolved into a grant funded by MWRRI. Dr. Jeannie Barlow (USGS), Dr. Joby Czarnecki (MSU Geosystems Research Institute), and I recently received funding to investigate the recharge potential of tail-water recovery systems and on-farm storage reservoirs to the alluvial aquifer. This project has proven to be challenging, but we are excited about its potential outcomes. REACH and the Water Quality Laboratory are excited to continue partnering with MWRRI on many projects in the future.

MWRRI Activity/Project Updates

MWRRI staff has actively engaged numerous university programs, state/federal agencies, and stakeholder organizations to facilitate development of project concepts and proposals designed to advance the research priorities recommended by MWRRI's advisory board. Following are examples of a few of the activities underway:

Catalpa Creek Watershed Restoration & Protection Project/Watershed D.R.E.A.M.S. (Demonstration, Research, Education, Application, Management & Sustainability) Center

For the past several months, faculty and staff from 14 MSU units have been working with staff from multiple resource agencies to develop a comprehensive Water Resources Management Plan for the Catalpa Creek Watershed. The plan is scheduled for completion by August 31, 2015. The overall planning effort has been facilitated by MWRRI staff and led by MAFES administration. Four functional teams have been established to support this process: Planning & Implementation Team led by Dr. Tim Schauwecker, Department of Landscape Architecture & Landscape Contracting; Research, Monitoring & Assessment Team led by Dr. Beth Baker, Department of Wildlife, Forestry and Aquaculture; Education & Outreach Team led by Dr. Leslie Burger, Department of Wildlife, Forestry and Aquaculture; and Funding & Incentives Team, co-led by Dr. Joby Czarnecki, Geosystems Research

Institute. MSU alumnus and MDEQ Tombigbee River Basin Coordinator, Janet Chapman, has been instrumental in supporting this effort. Once completed, the WRMP will serve as the foundation to secure funding from various sources, guide implementation activities, and direct monitoring and evaluation activities.

Dr. Tim Schauwecker, LALC

Dr. Beth Baker, REACH

Dr. Leslie Burger, CFR

Dr. Joby Czarnecki, GRI

Recently, a group of MSU administrators and researchers toured the University of Kentucky's Cane Run Watershed Project which also serves as a watershed management demonstration center. The visit was beneficial as MSU begins to conceptualize and develop plans for its Catalpa and Sand Creek Watershed D.R.E.A.M.S. (Demonstration, Research, Education, Application, Management and Sustainability) Center.

Water Resources/Social Science Nexus

Dr. Ron Cossman, SSRC

During July 2014, MWRRI's Advisory Board supported the addition of appropriate social science applications as a water resource research priority, recognizing that understanding stakeholder behaviors, perceptions and beliefs are key components to water resource management. Since that time, MWRRI has engaged MSU's Social Science Research Center (SSRC) and conceptualized a number of water resources/social science research projects at the local, statewide, regional, and national levels. SSRC's lead in these efforts is Dr. Ron Cossman. Dr. Cossman recently participated with MWRRI and MAFES staff in a meeting of the Hypoxia Task Force's Land Grant University Initiative (SERA-46) in Columbus, Ohio where plans were advanced for MWRRI and SSRC to pursue proposal development for the project concept "Using Social Indicators to Guide and Evaluate Implementation of State-level Nutrient Reduction Strategies." Dr. Cossman is also a member of the Gulf of Mexico Alliance's Education & Outreach Team, and is supporting its needs for social science research.

Public Water Supplies

MWRRI staff has been working with Dr. Jason Barrett, MSU Extension Center for Government and Community Development, on several project concepts related to public water supplies. Meetings have been held with MDEQ's Office of Community Engagement, Office of Land & Water Resources, and the Mississippi Rural Water Association. A number of project concepts beneficial to those agencies have been identified and are currently being developed. Additionally, Dr. Barrett is working with the Catalpa Creek Planning & Implementation Team to address water supply and waste water issues in the watershed.

Dr. Jason Barrett, CGCD

Mississippi – Alabama Partnership

On Thursday, March 12, 2015, administrators with MSU, the University of Alabama, and Auburn University signed a memorandum of agreement (MOA) creating a new long-term partnership to advance interdisciplinary water science, policy and law research, economic development, ecosystem management, and capacity building. "We believe that leveraging the research, education and outreach assets of all three institutions will lead to important discoveries and solutions that enhance management of one of our greatest economic assets" said Dr. David Shaw, MSU Vice President of Research and Economic Development. MWRRI, the University of Alabama Water Policy and Law Institute, and the Auburn University Water Center will lead the new partnership's work that will focus on conservation, development, management and use of water resources to assist planning and regulatory bodies at every level of government, as well as developing innovative technologies for treatment, safety and conservation.

Gulf of Mexico Alliance

The Gulf of Mexico Alliance (GOMA) is a partnership of the five Gulf States, federal agencies, academic organizations, businesses, and other non-profits in the region. Its goal is to significantly increase regional collaboration to enhance the environmental and economic health of the Gulf of Mexico. During June 15-17, GOMA held its All-Hands Meeting in Biloxi. The meeting was well attended by stakeholders from all five Gulf states. A focus of the meeting and current alliance activities is the development of the third Governors' Action Plan for Healthy and Resilient Coasts. MWRRI is a member of the steering team of GOMA's new Water Resources Team, led by Kim Caviness of the Mississippi Department of Environmental Quality, and is actively engaged in supporting development of the Water Resources component of the new Action Plan.

USGS 104b Request for Proposals

Stay tuned for the next funding opportunity from MWRRI. The USGS 104b RFP will be released within the next eight weeks. There is cost share involved with the project budget. For every $1.00 federal funding requested, cost share must be $2.00 non-federal. Funded research proposals should emphasize the Institute's water priority areas and recommended with its Advisory Board.

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

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.