



# MWRRI Newsletter

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Spring 2017

## From the Director's Desk ...

Last month's statewide water resources conference, hosted by MWRRI, affirmed continued interest in water resources research and management in Mississippi evidenced by the quality of presentations and number of participants. I'd like to especially thank our event sponsors: Collier Consulting, Inc. from Stephenville, TX; Visit Natchez/Natchez Convention Center, Natchez, MS; Pickering Firm, Inc., Hernando, MS; and Weyerhaeuser Company, Columbus, MS. Special thanks go to Mississippi Department of Environmental Quality and U.S. Geological Survey for their assistance with conference planning, and to all of our technical session facilitators/coordinators who identified and solicited speakers for their sessions. I am also very appreciative of the work of MWRRI's staff who succeeded in delivering another successful conference. The information provided by our plenary speakers was very helpful for us to understand the scope and scale of many of the water resource management challenges that we face in Mississippi and how these challenges are being addressed at the state and federal level.



The SEC Water Conference "The Future of Water: Regional Collaboration on Shared Climate, Coastlines and Watersheds" was also a resounding success with over 200 participants across the southeast. I'm happy to report that significant progress was made during our four WRRRI breakout sessions to establish a southeastern regional WRRRI forum to address multi-state and regional water resource issues. You can learn more details about these conferences in this newsletter.

I have great news to report that after conducting a thorough national search the MSU search committee has recommended and MSU administration has offered the position of Director of MWRRI to our own Dr. Jason Krutz who will begin work in his new position July 1, 2017. Dr. Krutz, an associate research/extension professor with the Delta Research and Extension Center in Stoneville, Mississippi, is well-known regionally for his innovative research and extension efforts addressing water conservation and irrigation.

On a personal note, I have made the decision that it is time for me to get more involved with my "grandpa" duties and pursue interests that I have put off for some time. Because of this, I will be retiring on June 30 after serving over 30 years at the greatest institution of higher learning in the country, Mississippi State University. The past two years in my role as MWRRI Interim Director have been very satisfying and productive. Having Dr. Jason Krutz

come in as the Institute's new Director will assure continued progress as we work with you, our stakeholders, to collaboratively address the water resources research and management priorities that we face.

Together we have made a difference,

*Bill*

Bill Herndon

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## MSU Names Jason Krutz as New MWRRI Director

After a national search, Dr. L. Jason Krutz has been named MWRRI's new Director. Dr. Krutz, who will assume the position on July 1, 2017, has an extensive background in conjunctive water resources research and management working primarily in agricultural landscapes. His most recent position was serving as Irrigation Specialist with MSU's Delta Research and Extension Center and as Executive Director of the H<sub>2</sub>O Initiative. Prior to these positions, Dr. Krutz served as the Environmental CRIS Lead for USDA Agricultural Research Service's Crop Production Systems Research Unit in Stoneville, MS. In these and prior professional roles, he has conceived, designed, and directed research and/or extension programs that received regional, national, and/or international recognition. Dr. Krutz, and Arkansas native, received a B.S. and M.S. in Agronomy from the University of Arkansas and a Ph.D. in Agronomy from Texas A&M University.



Over the past five years, Dr. Krutz has successfully procured over \$6.5MM in extramural funding from state agencies, commodity boards, federal entities, and the private sector. He has also produced 186 scholarly works and 72 peer-reviewed manuscripts while directing research programs for 5 Ph.D. and 5 M.S. students and serving on 18 graduate committees. Additionally, Dr. Krutz conceived and directed the Row-crop Irrigation Science Extension and Research (RISER) Program which has increased the adoption of profitable irrigation BMPs for cotton, corn, soybeans, rice, and peanuts across Mississippi. During this time, he also formulated strategies to facilitate the adoption of RISER techniques throughout Arkansas, Louisiana, Missouri, and Tennessee for public and private stakeholders involved with the H<sub>2</sub>O Initiative.

MWRRI welcomes Dr. Krutz!

## 2017 Mississippi Water Resources Conference

April 11-12, 2017

The annual Mississippi Water Resources Conference, hosted by MWRRI, was held at the Jackson Hilton on April 11-12, 2017. There were more than 130 participants in the conference. 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 presented 54 oral presentations and 14 posters on the following topics:

- Delta Sustainable Water Resources: Monitoring and Modeling
- Delta Sustainable Water Resources: Irrigation Efficiency and Alternative Water Supplies
- Statewide Management of Water Resources: Office of Land & Water Resources
- Agricultural Water Storage and Reuse
- Water Treatment and Management
- Modeling Applications
- Coastal Restoration Projects
- Nutrient Reduction
- Surface Water – Groundwater Interaction
- Ecological Studies
- Innovative Studies and Applications I and II (2 sessions)
- Climate and Agronomics
- Mississippi River Basin

The opening plenary session featured a panel from the Mississippi Department of Environmental Quality whose theme was “Water Management to Ensure Water of Sufficient Quantity and Quality for a Sustainable Environment and Economy in Mississippi.” Panelists included Kay Whittington, Kim Caviness-Reardon, Valerie Alley, Adrien Perkins, and Natalie Segrest.

Tuesday’s luncheon speaker was Mr. Kurt Readus, USDA State Conservationist speaking on the Natural Resource Conservation Service’s efforts to support sustainable water resources in the Mississippi Delta. Mr. Readus reminded everyone at the luncheon that while “service” is the last word in NRCS, it is the number one priority for the agency in assisting stakeholders with land and water issues.



Kurt Readus, NRCS

Wednesday's luncheon speaker was Brian Clark from U.S. Geological Survey. Mr. Clark spoke on the current USGS regional modeling initiatives.



Brian Clark, USGS

Again this year, students had opportunities to be involved in both an oral and/or poster presentation competition. Through sponsorship of Weyerhaeuser and an anonymous gift, cash prizes of \$100 for 1<sup>st</sup> place, \$75 for 2<sup>nd</sup> place, and \$50 for 3<sup>rd</sup> place were awarded to the winners in both categories.

Winners of the Student Oral Presentation Competition were:

**1<sup>st</sup> Place** Mary Alexandra Fratesi, undergraduate chemistry major at University of Mississippi. Alex's presentation was on "Community-Based Research Strategies to analyze risk of Lead Contamination in Public Water Supplies in the Mississippi Delta."

**2<sup>nd</sup> Place** Bailey Rainey, Civil & Environmental Engineering graduate student at Mississippi State University. Bailey's presentation was about the "Identification and Evaluation of Potential Impacts of Onsite Wastewater Treatment Systems in Decentralized Communities within the Jourdan River Watershed."



Mercedes Siegle-Gaither  
(center)

**3<sup>rd</sup> Place** Michael Gratzler, Geology & Geological Engineering graduate student from University of Mississippi. Michael's presentation was on "Quantifying Recharge to the Mississippi River Valley Alluvial Aquifer from Oxbow-lake-Wetland Systems."

Winners of the Student Poster Competition were:

**1<sup>st</sup> Place** Mercedes Siegle-Gaither, College of Forest Resources graduate student at Mississippi State University. Mercedes' poster was "Using Deuterium and Oxygen- 18 Isotopes to Understand Stemflow Generation mechanisms."

**2<sup>nd</sup> Place** Zeima Kassahun, College of Forest Resources graduate student at Mississippi State University. Zeima's poster was titled, "Species-Specific Environmental Factors that Influence Sap Flow Rates of Nine Bottomland Hardwood Species."



Hazel Buka (center)

3<sup>rd</sup> Place Hazel Buka, Agricultural & Biological Engineering graduate student at University of Mississippi. Hazel's poster "Can One Hundred-year Precipitation Record Produce Patterns Allowing Seasonal Weather Prediction?"

At the conclusion of Wednesday's luncheon, Dr. Bill Herndon was presented with a plaque recognizing his service for the past two years as Interim Director of MWRRI. Dr. Herndon will be retiring from MSU June 30, 2017.



Richard Ingram, Bill Herndon, and Jessie Schmidt, MWRRI

The Institute would like to thank our sponsors and exhibitors this year:

- Collier Consulting, Inc. from Stephenville, TX;
- Visit Natchez/Natchez Convention Center, Natchez, MS;
- Pickering Firm, Inc., Hernando, MS; and
- Weyerhaeuser Company, Columbus, MS.

Special thanks go to Mississippi Department of Environmental Quality and U.S. Geological Survey for their assistance with conference planning, and to all of our technical session facilitators/coordinators who identified and solicited speakers for their sessions. Finally, all the successes of our conference were a product of the long hours and hard work of Ms. Jessie Schmidt, Coordinator of MWRRI and Mr. Richard Ingram, MWRRI's Associate Director.

Tentative dates for 2018 are April 3-4 at Hilton Jackson. We hope you will join us again and bring a friend or co-worker with you.

## ‘Future of Water’ conference at MSU fosters collaboration across SEC universities

By: Allison Matthews, News Editor, Office of Public Affairs, MSU

STARKVILLE, Miss.—A collaborative conversation on a simple topic – water – is yielding discussions that literally could change the world, and researchers are saying that change is critical for meeting increased water needs around the globe.

About 200 participants gathered March 27-28 for the 2017 SEC Academic Conference hosted by Mississippi State University. The conference focused on “The Future of Water: Regional Collaboration on Shared Climate, Coastlines and Watersheds.” With an emphasis on research collaboration, the conference highlighted how water, in its simplicity as the earth’s most life-giving resource, poses some of the world’s most complex scientific and social challenges.



Eban Bean of the University of Florida leads discussion during a breakout panel March 28 during the SEC Academic Conference hosted at MSU. The conference focused on “The Future of Water” and included more than 60 speakers and panelists from throughout the SEC on a variety of water resource topics. (Photo by Megan Bean)

In addition to researchers, academic leaders and students from all 14 SEC Universities, governmental organizations including the National Oceanic and Atmospheric Administration, U.S. Department of Agriculture, U.S. Geological Survey, the Environmental Protection Agency and Mississippi’s Delta Council, among others, were represented.

MSU President Mark E. Keenum, who also is serving a term as president of the SEC, said research, technology and innovation are keys to making progress in water utilization issues.

“It won’t happen without a serious commitment to science, research and innovation. It will be through universities like Mississippi State and all of the universities represented here today,” Keenum said Monday [March 27]. “We have no choice as human kind. We have to be looking for ways to survive and do it in the most efficient and effective ways possible. That’s why this conference is so important.”

SEC Commissioner Greg Sankey also emphasized the significance of the water topic.

“This conversation is incredibly important. As we go forth, we bring you together not simply for 36 hours of conversation, but hopefully to facilitate collaboration across our 14 great universities,” Sankey said. “The service, research, education and, quite frankly, the leadership that we need on these and other important social issues comes from our campuses,” he added.

Headlined by best-selling author John M. Barry, former National Geographic executive environment editor Dennis Dimick, and NASA Jet Propulsion Laboratory senior water scientist Jay Famiglietti, the event also included more than 60 speakers and panelists from throughout the SEC on a variety of water resource topics.

Torie Johnson, executive director for SECU, the academic initiative of the SEC, said the SEC Academic Conference represents an expanded slate of academic programming currently supported by the Southeastern Conference.

“Ideally, the conference is the beginning of a conversation that continues indefinitely involving these important topics,” Johnson said.

Throughout the presentations, the expert speakers repeatedly conveyed urgency, noting the rapid depletion of ground water, increased demand for water in conjunction with population growth, and concerns about climate variability issues.

“The shortage of water is no longer a scientific concern – it’s a societal concern,” said Venkat Lakshmi of the University of South Carolina during a talk on “Hydrological Extremes from Space.”

Presenters tackled a breadth of water-related issues, including regional policy, partnerships, coastal resiliency, sea level rise, restoration projects, contamination, water treatment processes, public perception, agriculture and economics. Additional sessions allowed students to network with professional contacts and Water Resource Research Institute representatives to discuss regional and multi-state management issues and opportunities.

Catie Dillion is an MSU master’s student in agricultural and biological engineering interested in sediment transfer related to coastal change—an issue impacted by sea level rise. Dillon said the conference offers students a chance to step out of the traditional classroom setting to hear from additional experts who “drove home” the significant nature of problems she has been hearing about for some time.

“We’re all working toward the same goal, which is to make things better and make sure we’re doing the best we can so future generations don’t have to face an even worse situation,” Dillon said. “That’s what scientists do—they prepare for the future, and they give to the next generation.”

James Dobrowolski, national program leader for water for the USDA's National Institute of Food and Agriculture, said attending an event like the SEC Academic Conference helps him gain a better understanding of regional water issues.

"In some cases, they're quite local, and if you don't get out and see some of those issues and understand them, then they're really pretty academic," he said, also explaining that he likes meeting project managers working with various USDA grants. He said the conference promotes education and recruitment of new scientists in agriculture and related fields.

"Plus, I'm an old professor, so I enjoy meeting the graduate and undergraduate students," said Dobrowolski, who spent 16 years in academia before moving into government. Now, he manages \$42 million in competitive grants for the Water for Agriculture Challenge Area launched by USDA in 2014.

As a Tuesday [March 28] speaker, Dobrowolski discussed how improvements to wastewater management are key to sustainable development. He said more than 80 percent of the world's wastewater is released without treatment, but rapid technology developments over the last few years have made it possible to effectively treat wastewater to safe, clean potable levels that exceed drinking water standards. He said several countries, particularly those in arid areas, are recycling water at high rates.

Around the world and in the U.S., raising public acceptance and social awareness of wastewater reuse is an issue, he explained.

MSU Associate Provost for Academic Affairs Peter Ryan said conference participants came at water issues from every possible angle.

"They are looking at all aspects of how the issues affect communities and the environment, including biological, ecological and economic perspectives," Ryan said, noting that academic leaders must pursue solutions.

"We have to take a lead, and we have to be quite aggressive about it," Ryan said.

SECU is the academic initiative of the SEC, serving as the primary mechanism through which the collaborative academic endeavors and achievements of SEC universities are supported and advanced. For more on SECU, visit [www.TheSECU.com](http://www.TheSECU.com).

## **SEC Water Conference MWRRI-Facilitated Breakout Workshops: Establishing a Southeast Regional Water Research Institute Forum to Address Multi-State and Regional Water Resources Priorities**

Water Resources Research Institutes (WRRIs), established by the Federal Water Resources Research Act of 1984, operate in 54 states and territories of the United States. These Institutes are charged with arranging for research that addresses water problems or expands understanding of water and water-related phenomena, aiding the entry of new professionals into the water resources fields, helping to train future water scientists and engineers, and transmitting research results to water managers and the public. However, in this era of regional and multi-state water challenges only limited collaboration and coordination are occurring among the Institutes.

During the SEC Water Conference on “The Future of Water: Regional Collaboration on Shared Climate, Coastlines and Watersheds” a series of four breakout workshops was facilitated by MWRRI. The workshops were structured to continue to advance the concept of establishing a southeast regional WRI forum to address multi-state and regional water resources priorities. Significant interest and support was voiced for the initiative, and ideas and programs shared among the WRRIs.

Southeastern WRRIs identified the following desired outcomes resulting from the establishment of a regional forum:

1. Significantly increased collaboration and coordination among WRRIs in the southeast on multi-state and/or regional water resources research and management proposals and projects;
2. Established and coordinated regional communities of practice with an experiential learning component focused on building the next generation of water resources practitioners;
3. Increased funding to southeastern WRRIs through traditional, non-traditional, and innovative approaches to address the multi-state and/or regional water resources priorities;
4. Access to innovative programs housed in individual WRRIs that could be shared with other WRRIs;
5. Strengthened relationships with appropriate regional offices of EPA, USGS, NOAA/Sea Grant, USACE, USDA (NRCS, NIFA), the National Water Center, and other water resources-focused agencies and organizations such as SERA-43, Landscape Conservation Cooperatives, the Gulf of Mexico Alliance, et al; and
6. Regularly scheduled conference calls/webinars and an annual meeting to support and advance the activities of the regional forum.

During the breakout workshops four panels addressed the following foundational issues relevant to this initiative:

Session 1: What should be the objectives/desired outcomes and scope of the forum? What regional partnering opportunities should be explored? What benefits might accrue to individual WRRIs and the region?

Session 2: What do you see as existing/emerging regional and multi-state water resources research and management issues that impact the southeastern U.S.? Which research and management issues for which regional/multi-state collaboration are needed should receive the highest focus?

Session 3: Presentations on recognized projects/programs implemented by southeastern WRRIs that could be transferred to other states or across the region

Session 4: What organizational issues need to be considered for planning and implementation of this regional forum concept? What resource opportunities for WRRIs can be created through this concept? What do you see as next steps (activities and milestones)?

Significant input on these issues was generated and has been incorporated into a draft report that will serve as the basis for continuing to evolve the concept. MWRRI will actively work to build upon the progress made during these sessions and facilitate continuing efforts to advance the concept into an operational reality.

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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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