**SERA 43: Southern Region Integrated Water Resources Coordinating Committee Mid-Project Progress Report – March 31, 2022**

**Full Project Duration: 10/01/2019 to 09/30/2024**

1. Progress Report: Describe accomplishments since the committee was last approved; compare actual accomplishments with the objectives in the project outline; reasons should be given if project objectives were not met. Rate the project on accomplishments of stated objectives.

Accomplishments are listed in the following section as they apply to the specific subject matter workgroups listed under ‘Procedures and Activities’ in the Project Outline. The project’s objectives are shown at the end of this section with a summary of how the project’s accomplishments related to the project objectives.

**Accomplishments (Procedures and Activities)**

**Water Quality**

1. Continue to research and educate stakeholders on emerging innovative strategies for implementing BMPs for protecting water quality.
   * Dr. Gary Hawkins (University of Georgia) taught a Freshman Class which included erosion and sedimentation to protect water quality in both agriculture and urban.
   * Dr. Gary Hawkins made presentations on water quality BMPs with graduate students Collier, Fox and Calvacante. Total of 11 participants.
   * Dr. Gary Hawkins made Extension presentations to various audiences as related to water quality in agriculture and urban settings. 40 total participants.
   * During the interim reporting period, Dr. Cal Sawyer conducted 34 trainings for the Certified Erosion Prevention and Sediment Control Inspector (CEPSCI) program. The purpose of CEPSCI is to educate field personnel on the proper installation, maintenance, and inspection of erosion prevention and sediment control measures at construction sites. Over 1,850 individuals were certified through these compliance-based courses representing 12,950 continuing education credits recognized the SC Department of Labor, Licensing and Regulation.
   * Dr. Cal Sawyer conducted 7 trainings for the Certified Stormwater Plan Reviewer (CSPR) program. To protect water quality from construction activities, the CSPR program certifies engineers on the proper design and review of stormwater and sediment control plans for development sites to meet regulatory and environmental requirements. Over 160 individuals were certified during the interim reporting period.
2. Conduct and foster the development of programs on issues related to the protection of private water supplies and on-site wastewater management.
   * Dr. Gary Hawkins developed an on-site wastewater presentation to be delivered to and used by County Extension agents. Presentation includes the basics of on-site waste management. Has been presented over 20 times.
   * Dr. Gary Hawkins and graduate students Fox and Lundsford made 21 presentations total.
   * Dr. Gary Hawkins is a member of 2023 SepticSmart Week Planning Committee.
   * Dr. Mary Love Tagert and graduate student Blade Hodges gave a presentation “Understanding In-Field Soil Moisture Variability and Its Effect on Irrigation” as part of the Mississippi Soybean Promotion Board Research Round-Up. Dec. 9, 2020. Mississippi State University, Starkville, MS. (Virtual) (*29 participants)* Presentation was recorded and posted on the Mississippi Soybean Promotion Board YouTube page at <https://www.youtube.com/watch?v=ZOXXrlCrxTA&t=34s>.
   * B.C. Hodges, M.L. Tagert, J.O. Paz, and D.B. Reginelli presented a poster at the North Mississippi Producer Advisory Council Meeting titled ‘Evaluating In-Field Soil Moisture Variability and Factors Affecting It.’ Verona, MS. Feb. 20, 2020. (*42 participants*)
   * Dr. Mary Love Tagert and Dr. John E. Linhoss developed a video titled ‘Mississippi Agricultural Waste Pesticide Collection Event’ at <https://www.youtube.com/watch?v=axHaNyIOmKE&t=8s> posted on Feb. 10, 2020. (107 views as of 4/6/22)
   * Dr. Mary Love Tagert and Dr. John E. Linhoss coauthored an Extension publication “Disposal of Agricultural Waste Pesticides in Mississippi.” Mississippi State University Extension Service, Extension Publication 3403 (POD-12-19). <http://extension.msstate.edu/sites/default/files/publications/publications/P3403.pdf>
   * Dr. Tagert organized and hosted the following agricultural waste pesticide disposal events, which helped farmers and landowners properly and efficiently dispose of waste pesticide products free of charge. These events help ensure proper disposal which protects water quality in surrounding areas.
     + Greenwood, MS (Leflore County). March 1, 2022. (*38 participants served*; *awaiting invoice for total lbs. collected*)
     + Yazoo City, MS (Yazoo County). Dec. 8, 2020. (*16 participants served; 12,591 lbs. collected*)
     + Pontotoc, MS (Pontotoc County). November 19, 2020. (*18* *participants served; 12,229 lbs. collected*)
     + Tunica, MS (Tunica County). March 4, 2020. (*44* *participants served; 34,756 lbs. and 33 waste tires collected*)
     + Aberdeen, MS (Monroe County). March 2, 2020. (*20* *participants served; 9,632 lbs. collected*)
     + Greenwood, MS (Leflore County). November 19, 2019. (*21* *participants served; 18,868 lbs. and 34 waste tires collected*)

* Dr. Joel O. Paz and Dr. Mary Love Tagert were authors on the following peer-reviewed publications, one of which was published with a coauthor from the USDA-ARS National Sedimentation Laboratory:
  + Pérez-Gutiérrez, J.D., J.O. Paz, M.L.M. Tagert, L.M.W. Yasarer, and R.L. Bingner. 2020. Using AnnAGNPS to Simulate Runoff, Nutrient, and Sediment Loads in an Agricultural Catchment with an On-Farm Water Storage System. *Climate*. 8(11): 133. <https://doi.org/10.3390/cli8110133>
  + Pérez-Gutiérrez, J.D., J.O. Paz, M.L.M. Tagert, and M.B. Sepehrifar. 2020. Impact of Rainfall Characteristics on the NO3-N Concentration in a Tailwater Recovery Ditch. *Agricultural Water Management.* Vol. 233, April 30. <https://doi.org/10.1016/j.agwat.2020.106079>

1. Provide and produce information on protecting and managing water resources following natural disasters.
   * Dr. Gary Hawkins developed and published an Extension Publication related to well water safety after a flood. <https://secure.caes.uga.edu/extension/publications/files/pdf/C%201124_1.PDF>
2. Measuring, tracking, and treating emerging contaminants.

* Dr. Gary Hawkins (University of Georgia) is a member of a team researching treatment technologies within water and wastewater treatment facilities for the removal of PFAS.  A component of the project is to also present information gained from the project to stakeholders including operators of water and wastewater treatment plants.

**Water Quantity**

1. Provide and produce information on drought-impacted and flood-impacted water supplies following natural disasters.

* Texas A&M, University of Florida, and Virginia Tech conducted outreach and testing programs post Hurricanes to over 200 well owners.
* Mississippi State University Extension developed a publication related to flood preparation for private well. <https://extension.msstate.edu/publications/ready-your-well-for-the-next-flood-preparation-evacuation-and-return-home>
* Mississippi State University Extension developed a publication related to shock chlorination for private wells. <https://extension.msstate.edu/publications/disinfecting-water-well-through-shock-chlorination>
* Dr. Gary Hawkins developed and published an Extension Publication related to well water safety after a flood. <https://secure.caes.uga.edu/extension/publications/files/pdf/C%201124_1.PDF>

1. Evaluate agronomic and engineering approaches to maximize irrigation water use efficiency in agronomic crop production systems.
   * Drs. Kendall Kirk, Michael Plumblee and Cal Sawyer conceived, organized, and executed the pilot Clemson University Center Pivot Irrigation Assessment (CPIT) program in South Carolina. CPIT establishes a framework and training for a statewide program and software platform to conduct irrigation assessments and produce standardized reports which demonstrate cost-benefits of irrigation system maintenance and repair. The pilot phase was completed in 2021 with over 75 pivots being assessed by a combination of Clemson extension agents representing both Agronomy and Water Resources.
   * Dr. Kadyampakeni’s program conducts 70% research and 30% extension. His research focuses on water and nutrient management in citrus production systems. His extension efforts deliver information for clientele through talks, field days, bulletins and trade journal articles. He published 12 refereed journal articles, 6 Extension bulletins, and 6 trade journal articles, which are all listed below:

*Journal Articles*

* Castellano-Hinojosa A., W. Martens-Habbena, A.R. Smyth, D.M. Kadyampakeni, and S.L. Strauss. 2022. Short-term effects of cover crops on soil properties and the abundance of N-cycling genes in citrus agroecosystems. Applied Soil Ecology 172, <https://doi.org/10.1016/j.apsoil.2021.104341>
* Barlas N.T. and D.M. Kadyampakeni. 2022. Phosphorus Dynamics in Clementine Mandarin. International Journal of Fruit Science, 22(1):133-141, <https://doi.org/10.1080/15538362.2021.2014017>
* Kwakye S. Kadyampakeni D.M., van Santen E., Vashisth T., Wright A. (2021) Variable Manganese Rates Influence the Performance of Huanglongbing-affected Citrus Trees in Florida. HORTSCIENCE, <https://doi.org/10.21273/HORTSCI16337-21>
* Esteves E. Kadyampakeni D.M., Zambon F., Ferrarezi R., Maltais-Landry, G. (2021). Magnesium fertilization has a greater impact on soil and leaf nutrient concentrations than nitrogen or calcium fertilization in Florida orange production. Nutrient Cycling in Agroecosystems. https://doi.org/10.1007/s10705-021-10182-1
* Barlas, N.T. and Kadyampakeni D.M. (2021) Clementine mandarin: biomass formation, distribution and nitrogen uptake trends, Journal of Plant Nutrition. <https://doi.org/10.1080/01904167.2021.2014879>
* Esteves, E., G. Maltais-Landry, F. ZambonP, R. Ferrarezi, and D.M. Kadyampakeni. 2021. Nitrogen, Calcium and Magnesium Inconsistently Affect Tree Growth, Fruit Yield and Juice Quality of Huanglongbing-Affected Orange Trees. HortScience 56(10):1269–1277 <https://doi.org/10.21273/HORTSCI15997-21>
* Kadyampakeni, D.M. and T. Chinyukwi. 2021. Are macronutrients and micronutrients therapeutic for restoring performance of trees affected by citrus greening? A discussion of current practices and future research opportunities, Journal of Plant Nutrition. <https://doi.org/10.1080/01904167.2021.1927079>
* Gairhe B., Liu W., Batuman O., Dittmar P., Kadyampakeni D. and Kanissery R. (2021) Environmental Fate and Behavior of the Herbicide Glyphosate in Sandy Soils of Florida Under Citrus Production. Front. Environ. Chem. 2:737391. <https://doi:10.3389/fenvc.2021.737391>
* Moda L.R., R. de Mello Prado, J.P. de Souza Júniorg, G.B. da Silva Júnior, L.C.N. dos Santos, M.V.G. Soares, D.M. Kadyampakeni. 2021. Response of orange seedlings to the proportion of nitrate-ammonium in the nutrient solution and the benefits of phosphorus in ammonia toxicity. Scientia Horticulturae 285, <https://doi.org/10.1016/j.scienta.2021.110166>
* Kadyampakeni, D.M. and T. ChinyukwiG. 2021. Are macronutrients and micronutrients therapeutic for restoring performance of trees affected by citrus greening? A discussion of current practices and future research opportunities, Journal of Plant Nutrition. <https://doi.org/10.1080/01904167.2021.1927079>
* Atta, A.A.; Morgan, K.T.; Kadyampakeni, D.M.; Mahmoud, K.A. 2021. The Effect of Foliar and Ground-Applied Essential Nutrients on Huanglongbing-Affected Mature Citrus Trees. Plants, 10, 925. <https://doi.org/10.3390/plants10050925>
* Shahzad, F.; Kadyampakeni, D.M.; Vashisth, T. 2021. Effect of Growing Media pH on Performance of Huanglongbing-Affected Young Citrus Trees. Agronomy, 11, 439. <https://doi.org/10.3390/agronomy11030439>

*Trade Journal Articles*

* Ferrarezi, R.S., W. Shafqat, H. Soto, M. Ritenour, L. Rossi, D. Kadyampakeni, E. Johnson, and K. Morgan. 2021. Impact of high-density planting and enhanced nutrition on HLB-affected grapefruit. Citrus Industry 102(9):14-17.
* Vashisth, T. and D. Kadyampakeni. 2021. Regular leaf nutrient analysis improves HLB-affected trees. Citrus Industry 102(9):18-21.
* Kadyampakeni D., E. Johnson, K. Morgan and A. Atta. 2021. Lessons on yield and root health from modified nutrition. Citrus Industry 102(9):22-25.
* Kadyampakeni, D. 2021. Optimizing Macronutrients and Micronutrients. Citrus Industry, <https://citrusindustry.net/2021/08/17/optimizing-macronutrients-and-micronutrients/>
* Kadyampakeni. D., T. Chinyukwi, A. Wright and R. Ferrarezi. 2021. Effect of Nutrients on canopy response and yield. Citrus Industry 102(6):19-21.
* Johnson, E., T. Chinyukwi, L. Rossi, and D. Kadyampakeni. 2021. Root depth isn’t what it used to be. Citrus Industry 102(6):22-23.

*Extension Bulletins*

* Kadyampakeni, D. and S. Guzman. 2021. Optimizing Irrigation and Young Tree Management. Fact Sheet SL488, Gainesville, FL
* Johnson, E.G., S. Strauss, D. Kadyampakeni and K.T. Morgan. 2021. 2021–2022 Florida Citrus Production Guide: Root Health Management. pp. 93-96. CMG15, doi.org/10.32473/edis-cg094-2021
* Kadyampakeni DM, Duncan LW. 2021. 2021–2022 Florida Citrus Production Guide: Best Management Practices for Soil-Applied Agricultural Chemicals1. HS-185. pp21-24.
* Zekri M., A. Schumann, T. Vashisth, R. Ferrarezi, D. Kadyampakeni, K. Morgan, B. Boman, and T. Obreza. 2021. Fertilizer Application Methods. In: L.M. Diepenbrock, M.M. Dewdney and T. Vashisth (Eds) 2021-2022 Florida Citrus Production Guide. pp 89-91.
* Kadyampakeni D.M., K.T. Morgan, M. Zekri, R.S. Ferrarezi, A.W. Schumann and T.A. Obreza. 2021. Irrigation Management of Citrus Trees. In: L.M. Diepenbrock, M.M. Dewdney and T. Vashisth (Eds) 2021-2022 Florida Citrus Production Guide. p. 73-77.
* Morgan K.T., D.M. Kadyampakeni, M. Zekri, A.W. Schumann, T. Vashisth and T.A. Obreza. 2021. Nutrition Management for Citrus Trees. In: L.M. Diepenbrock, M.M. Dewdney and T. Vashisth (Eds) 2018-2019 Florida Citrus Production Guide. p. 79-88.

1. Increase awareness to water quantity threats and changes in water supplies, both in and outside the humid southern region.

* A series of Extension factsheets were developed to increase knowledge and awareness for utilizing irrigation water management practices in Mississippi.
  + Irrometer Watermark Series. Mississippi State University Extension Service Publication M2400.
  + Irrometer Watermark Series: Scientific Background. Mississippi State University Extension Service Publication 3536. <http://extension.msstate.edu/publications/irrometer-watermark-series-scientific-background>
  + Irrometer Watermark Series: Measurement Devices. Mississippi State University Extension Service Publication 3537. <http://extension.msstate.edu/publications/irrometer-watermark-series-measurement-devices>
  + Irrometer Watermark Series: Installation Procedures. Mississippi State University Extension Service Publication 3540. <http://extension.msstate.edu/publications/irrometer-watermark-series-installation-procedures>
  + Irrometer Watermark Series: Construction Guide. Mississippi State University Extension Service Publication 3538. <http://extension.msstate.edu/publications/irrometer-watermark-series-construction-guide>
  + Irrometer Watermark Series: Location Selection. Mississippi State University Extension Service Publication 3539. <http://extension.msstate.edu/publications/irrometer-watermark-series-location-selection>
  + Irrometer Watermark Series: Irrigation Triggers. Mississippi State University Extension Service Publication 3541. <https://extension.msstate.edu/publications/irrometer-watermark-series-irrigation-triggers>
  + Surge Irrigation. Mississippi State University Extension Service Publication P3509. <http://extension.msstate.edu/publications/surge-irrigation>
* Advancing Adoption of Soil Moisture Sensors Through On-Farm Training and Demonstration

To empower farmers to take the big step of adopting sensors, we launched an agent-led and multi-year on-farm education program. The National Center for Alluvial Aquifer Research (NCAAR) gives equipment and support to county Extension agents interested. Agents recruit farmer-participants from their respective counties and provide critical hands-on training in the field to give the producer the best user experience. NCAAR’s mission for this second-year project is to allow the producers to independently use the soil moisture sensors. More than 20 farmers across Mississippi participated, and the crops at the sensor locations included soybean, corn, cotton, and rice. Four of the sensor sites were under sprinkler irrigation while the remainder were surface irrigated. In the first two years, the sensor type used was Irrometer Watermark 200SS sensors.

* Dr. Tagert received an ASABE Educational Aids Blue Ribbon award for video ‘Soil Sensor Installation’ (electronic category), authored by Mary Love Tagert, Michaela Parker, and Blade Hodges. <https://www.youtube.com/watch?v=wx5FhYMusj4&t=4s> The video was also posted on the MS Soybean Promotion Board website and the national Soybean Research and Information Network website. 315 views as of 4/6/22.
* Drs. Joel O. Paz and Mary Love Tagert were authors on the peer reviewed paper: Guzmán, S., J.O. Paz, M.L. Tagert, A.E. Mercer. 2019. Evaluation of Seasonally Classified Inputs for the Prediction of Daily Groundwater Levels: NARX Networks vs Support Vector Machines. *Environmental Modeling and Assessment*. 24(2): 223-234.

**Ecosystem Services**

* + - 1. Assess and communicate how human-altered hydrologic flows affect aquatic biota, habitats, and the ecological services they provide.
* Dr. Cal Sawyer is principal investigator on the Hunnicutt Creek project being implemented on the campus of Clemson University. Real time awareness of water quality and quantity can inform communities against harmful pollutant levels and aid in the prediction of damaging flood events. An extensive network of 24 monitoring sites has been installed to monitor water quality, water levels, and discharge throughout the stream network of Hunnicutt Creek. Because of the highly developed areas and extent of impervious surfaces, this stream behaves similarly to other urban streams with low baseflow and high-volume flow during storm events and is impacted by stormwater discharges. Four (4) education events and field trips have been conducted during the interim reporting period. In addition, a PhD student has been brought on board to develop a site-specific model to include topography, land use, hydrology, and real-time instream and weather sensing to forecast streamflow and water quality. The model will integrate real-time data and visualization capabilities to understand emerging water resources challenges.
  + - 1. Examine how agricultural and urban water demands can be most efficiently managed to protect and sustain essential ecosystem services.

The project’s objectives are as follows:

1. *Foster multi-state, multi-disciplinary collaboration to address high priority water resource issues by: a. Developing more effective linkages between extension and research personnel at LGUs and with external partners, b. Establishing priorities for LGU work on southern water resource issues, and c. Facilitating collaborative, multi-state proposals and programs to address identified issues, and where appropriate, coordinate use of internal funding on priority projects.*

Substantial progress is being made on this objective, as specific project accomplishments show. Individual accomplishments reported by participants show that Extension faculty are working closely with research faculty at LGUs and with external partners, both from a funding perspective and a programmatic perspective. While there are many individual accomplishments, participants are moving towards more collaborative efforts. Most collaboration to date has centered around the priority southern resource issues of agricultural water use (conservation and increasing efficiency) and protection of private well water. It has been difficult to collaborate outside of our own states for the past two years, but plans are in place to increase opportunities for participants to interact. Specifically, in-person conferences are being targeted for an upcoming SERA 43 participant meeting, and requests for proposals are being identified for the group to consider. Discussions were started amongst potential collaborators, including SERA43 members, at the ASABE Decennial Irrigation Symposium held in December 2021.

1. *Regularly convene to communicate ideas, projects, and proposals to establish and improve collaborative relationships built to address complex transdisciplinary water issues. Also, a regional conference will be planned to share research, extension, and education resources, and to facilitate broader interaction among faculties and external partners.*

It has not been possible to meet this project objective due to the ongoing impacts of the Covid-19 pandemic. Even in 2021, travel restrictions were still in place for many institutions, and even if participants could travel, there were very few in-person conferences. With the situation improving, there are currently an increasing number of in-person conferences planned for 2022. The group has a video meeting planned for April 21, 2022, and an agenda is currently being developed. One agenda item will be to identify a conference for 2022 and/or 2023 to plan for an in-person SERA 43 participant meeting. We will select a conference which has the highest likelihood of attendance from participants.

1. *Update and add to a web-based portal for LGU water programs, curricula, and resources to enhance technology transfer among institutions and to external partners and clientele.*

This objective is in progress. Clemson University is leading the development of the newly revised SERA 43 website ([https://www.clemson.edu/extension/sera43/index.html](https://secure-web.cisco.com/1wsz9GAVREk1_BoI8RykF9kkDHxtZK56eJOMCvCOmTodhVTDa1E2jof0gEn7cFree5k731PrDoczmqqtcnFFlXD9YUaOVytSkSt-AqIO6WoLCnTGJ99PZ4SX7vQUOJHYEsGS-se4qfaUMTPPKt7-2DHZMPmafVhwcjY5RyzlSH-oYK2kbK4unLBa4V31LB7X6rLwp6MFX1cwgqKxwYQEHGdehcgIj4SdevDG21Jm_48SmHU0zlqB686QYgxQV5NrD22XKIRzngBjOntqDNZW_vh2WrjxvdCFj1uJsYaUFghj655Z5O4KVV663n4tA5CL3/https%3A%2F%2Furldefense.com%2Fv3%2F__https%3A%2Fsecure-web.cisco.com%2F1GzYAVEc9IJbddsR2vZJHvKePJB4BOy2qskRUpRyH24hKNNPzB4BdCTbpYGQdlA68C_dQgWiBieBgh_IcAu4n-3ycD-4ZVrtcy2VZvZNldz1p14XY2VyOwJQZH7YVtzxiU7WUCRbTcFXmIRmPBDUJS8TozaEWhcoDhRLVMwwHz0acVMBMwsXqJGGCzVIETmbVYHWFJvs15kYZ1ph8jyazflFAwXDwfPJNJhovr2pWGROAOtvLxHgTIftFnTj6vw5d_tpzkur-ZM2ykdi0VmFsAyAjL_NDuZgAniHbYrPqSVl6DYY2qD-PYd3lWnJZjCdQ%2Fhttps%2A3A%2A2F%2A2Fwww.clemson.edu%2A2Fextension%2A2Fsera43%2A2Findex.html__%3BJSUlJSUl%21%21PTd7Sdtyuw%21GVEPCdeO6YesVnVZ2TY7GlJYGUocj6k0-tX2mD8t0aHACeMK7rx1nRLseWn4p2VGvQ%24)), which will serve as a clearinghouse for products created from participants of this group. The website shell has been established, and the group is working on providing more content and increasing the aesthetics of the website.

1. Coordination/Linkages: Coordination/Linkages: Is there evidence of the interaction among committee participants and with other projects/agencies? Please list relevant examples. Is there evidence of delivering accomplishments to peer groups, stakeholders, clientele, and other multistate activities? How well is the committee working together? Has the committee moved beyond a collection of individual activities and ideas to some collective, integrated activity? Provide evidence of synergy, collaborative output via joint publicity, specific coordinated activity, etc. Rate this project on linkages.

* Meetings were held between University of Florida and Mississippi State University to plan a proposal for a SERA-43 - Southern Region Water Conference. The submitted proposal:

Kadyampakeni, D., D.M. Gholson, R. Awal, D. Boellstorff, A. Gumbert and K. Wagner. 04/01/2021 – 03/31/2024. Farmer-Driven Water Needs Assessment in the Southern US to Increase Grower Adoption of Sustainable Practices. USDA-Southern SARE. $393,693. Denied.

* Dr. Amanda Gumbert (University of Kentucky) collaborated with Dr. Beth Baker (Mississippi State University) on an EPA-funded Farmer to Farmer project in the Mississippi-Atchafalaya River Basin (delivered one in-person farmer exchange, four virtual farmer shop talks, and one virtual field day – bringing together farmers from across the basin to discuss soil and water conservation).
* The Auburn University Water Resources Center (AU WRC) plays an intentional role in facilitating connections with research and Extension faculty through virtual and in-person events and direct planned meetings. The AU WRC holds monthly webinars to connect water faculty and Extension professionals on collaboration opportunities. Water researchers often contact the AU WRC with requests for assistance in locating Extension partnerships for extramural funding. The AU WRC has participated in multi-state, multi-institution collaborative meetings to identify common resource concerns, share research and technology innovation interests, and evaluate funding for projects, especially related to agriculture water use. In addition, the AU WRC has participated in several multi-state and regional proposals in collaboration with North Carolina, South Carolina, Georgia, Florida, Mississippi, and Virginia.
* The AU WRC is the home of the USGS Water Resources Research Institute. In this role, the AU WRC assists in seed funding, especially of new faculty, for projects that are of benefit to Alabama as determined by a review panel of local, state and federal agencies and non-governmental organizations. Funded projects are strongly encouraged to include an impactful Extension and outreach component that includes participation in the annual Alabama Water Resources Conference. The Alabama Water Resources Conference provides a forum to share water resources research, education, Extension and outreach to stakeholder throughout Alabama and the region. Typical registration numbers exceed 275 and the attendees have diverse professional and geographic backgrounds.
* The AU WRC has formed close collaborations with Mississippi State University, University of Georgia, Clemson University, and Virginia Tech University to enhance our programs and offer lessons learned and success strategies to others. Examples include the partnership with Mississippi State University and AU WRC in the development of a citizen science program in Mississippi in partnership with the established Alabama program. This partnership successfully secured extramural funding from EPA. The AU WRC received mentorship and resources from Mississippi State University, Virginia Tech University, and the University of Georgia in the development of a private well water program for Alabama. We were awarded internal Extension support for this program and have worked across campus and sister institutions with researchers on extramural funding.
* In the 2019-2020 cycle, Dr. Mary Love Tagert was awarded an SEC Faculty Travel Grant to visit with colleagues at Auburn University. She was a seminar speaker in the Biosystems Engineering department and a guest lecturer at Auburn University with a presentation titled “Irrigation Water Use in Mississippi.”
* Dr. Stacie Davis Conger at Louisiana State University has collaborated with several multi-state Extension and research personnel:
  + Dr. Joel Paz (SERA43 Member) on an unfunded modeling project to recover field research damaged by dicamba volatilization,
  + Dr. Beth Baker (SERA43 Member) on a Best Management Practices manual related to water management on golf courses,
  + Dr. Wes Porter on using a newly released irrigation scheduling app in a different production system and environment, and
  + Multi-disciplinary colleagues from thirteen states to develop a proposal on management of climate smart agriculture and forestry.

1. Information exchange: Document information exchange and technology transfer. Rate this project on plans or accomplishments for delivering the results to users.
   * Dr. Kadyampakeni’s efforts help to train more than 300 certified crop advisors (CCAs) and provided continuing education units (CEUs) to training participants on water and nutrient management, water savings and best management practices. Results were disseminated through social media, podcasts, virtual presentations, refereed journal articles, bulletins and trade journal articles.
   * The AU WRC has not yet contributed to a web-based portal for LGU water programs but has worked closely with sister LGUs to share resources and request assistance in the building of new programs for Alabama such as the Drought Condition Monitoring and Assessment Program for Extension.
   * Different forms of information exchange are also shown under the list of accomplishments, including how many participants were reached at specific Extension-related events, publications, and videos.
   * Clemson University is leading the development of the newly revised SERA 43 website ([https://www.clemson.edu/extension/sera43/index.html](https://secure-web.cisco.com/1wsz9GAVREk1_BoI8RykF9kkDHxtZK56eJOMCvCOmTodhVTDa1E2jof0gEn7cFree5k731PrDoczmqqtcnFFlXD9YUaOVytSkSt-AqIO6WoLCnTGJ99PZ4SX7vQUOJHYEsGS-se4qfaUMTPPKt7-2DHZMPmafVhwcjY5RyzlSH-oYK2kbK4unLBa4V31LB7X6rLwp6MFX1cwgqKxwYQEHGdehcgIj4SdevDG21Jm_48SmHU0zlqB686QYgxQV5NrD22XKIRzngBjOntqDNZW_vh2WrjxvdCFj1uJsYaUFghj655Z5O4KVV663n4tA5CL3/https%3A%2F%2Furldefense.com%2Fv3%2F__https%3A%2Fsecure-web.cisco.com%2F1GzYAVEc9IJbddsR2vZJHvKePJB4BOy2qskRUpRyH24hKNNPzB4BdCTbpYGQdlA68C_dQgWiBieBgh_IcAu4n-3ycD-4ZVrtcy2VZvZNldz1p14XY2VyOwJQZH7YVtzxiU7WUCRbTcFXmIRmPBDUJS8TozaEWhcoDhRLVMwwHz0acVMBMwsXqJGGCzVIETmbVYHWFJvs15kYZ1ph8jyazflFAwXDwfPJNJhovr2pWGROAOtvLxHgTIftFnTj6vw5d_tpzkur-ZM2ykdi0VmFsAyAjL_NDuZgAniHbYrPqSVl6DYY2qD-PYd3lWnJZjCdQ%2Fhttps%2A3A%2A2F%2A2Fwww.clemson.edu%2A2Fextension%2A2Fsera43%2A2Findex.html__%3BJSUlJSUl%21%21PTd7Sdtyuw%21GVEPCdeO6YesVnVZ2TY7GlJYGUocj6k0-tX2mD8t0aHACeMK7rx1nRLseWn4p2VGvQ%24)), which will serve as a clearinghouse for products created from participants of this group. This will help promote exchange of information among and between the LGUs and different states. Clemson University has ample server space to improve the site and a technical person to add content received by SERA 43 participants. An agenda item for our planned April 21, 2022 meeting is to solicit content for the website.
   * Mississippi State University has presented information on irrigation water management practices at over 50 grower and consultant meetings, developed 11 YouTube training videos, 20 blog posts, 4 podcasts, 14 popular press articles, and 4 county extension agent train the trainer workshops.
   * Dr. Wes Porter provided Dr. Stacia Davis Conger access to a new irrigation scheduling application for corn to test its effectiveness when used for mid-South irrigation systems. Irrigation was not necessary for corn in 2020 or 2021, resulting in a delay of field testing.
   * Dr. Cal Sawyer and Derrick Phinney organized and conducted training sessions in response to new regulatory requirements for agricultural withdrawals from groundwater sources. In 2019, the SC Department of Health and Environmental Control Board unanimously approved the Western Capacity Use Area designation for the following 7 counties. Sawyer and Phinney led the newly established educational partnership with DHEC. An In-Service Training was held on Jan 7, 2019 for Clemson Extension agents, and three educational workshops were conducted across the affected counties in mid-January and February 2019.
2. Attendance/participation: Attendance and participation at committee meetings are imperative for the committee to be successful. Rate this committee for attendance/participation.
   * During both 2020 and 2021, participants could not attend most of the professional society meetings in person due to COVID-19 travel limitations. This limited one-on-one interaction with colleagues. We are starting to see travel restrictions lifted and anticipate more in-person meetings and interactions in 2022. Participants agree that it is important for members to gather in person, as it is these interactions that serve as catalysts for developing grant proposals. While we haven’t been able to meet in person for the past two years, there is interest among participants in continuing this group. To that end, we have a Webex meeting scheduled for April 21, and we will discuss at that time requests for proposals for the group to target as well as upcoming meetings to consider for in-person SERA 43 meeting.