



Michele L. Reba, PE

Michele L. Reba, PE, is the recipient of the 2022 Award for the Advancement of Surface Irrigation for her outstanding contributions in field-scale surface water research that includes water quantity, water quality, and greenhouse gas research.

Reba is a research hydrologist, lead scientist, and acting research leader at the USDA-Agricultural Research Service, Delta Water Management research unit located on the campus of Arkansas State University. This research unit executes research related to agricultural water resources management at the plot, field, farm, and watershed scales to further the knowledge base, evaluate technological solutions, and inform crop production practices.

Reba has established a research program focused on solving regional water resource issues through applied research and collaboration with local producers, private companies, universities, and government organizations. She led the effort to test alternate wetting and drying at the field scale in Arkansas which has been shown to reduce water use and greenhouse gas emissions. She led a 16-field, large-scale research study that focused on understanding how irrigation impacted water use, water quality, greenhouse gas emissions, yield, grain quality, and the presence of heavy metals in grain. She was integral in the world's first carbon offset protocol developed to measure, monitor, report and verify GHG emission reductions from rice production. Reba has employed sophisticated

and novel field techniques to establish an extensive edge-of-field network and in-stream network as part of the Conservation Effects Assessment Project to quantify the impact of production practices on water quality. This work allows for testing of practices at the field and farm scale by commercial farmers. Reba co-leads the Delta Flux Network, a consortium of researchers in the Lower Mississippi River Basin using eddy covariance to measure trace gasses of interest. Reba has investigated the potential for artificially adding water to the declining aquifer used for irrigation in the region. Unlike previous efforts, she is researching the potential of recently developed surface water storage systems as source water.

A 10-year member of ASABE, Reba has contributed as a member and leader on a number of ASABE committees. She is currently a member of the Natural Resources and Environmental Systems Surface Irrigation and Water Supply committee and the Irrigation Group.

Reba is coauthor of 67 peer-reviewed articles. Throughout her career, Reba has received a number of awards. Most recently, she was named Rice Researcher of the Year at the 25th Annual National Conservation Systems Cotton and Rice Conference.

