

# Center for Agricultural and Rural Sustainability

## Faculty Spotlight

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### Mike Daniels, PhD

Extension Specialist for Water Quality and Nutrition Mgt &  
Co-director for the Arkansas Discovery Farm Program

**Project Title:** Arkansas Discovery Farm Program

**Project Description and Goals:** The Arkansas Discovery Farm Program is a public-private partnership between the University of Arkansas System Division of Agriculture and private landowners. The goal of the Arkansas Discovery Farm program is to work with farmers to address issues in natural resources sustainability, conservation and stewardship in a cost effective manner. The program engages farmers, works with them on-farm and within their management system to develop solutions to the big issues in Arkansas agriculture. Since water issues are of primary importance in eastern Arkansas, most of the demonstrations and research on these farms are focused on water issues. Dr. Daniels co-directs the program with Dr. Andrew Sharpley.



Each Discovery Farm is different in its research, management practices and data collection but all are farmer lead and stakeholder driven. Daniels and colleagues work with the farmers to determine which data points are of most interest. Data is collected and verified to document the impact the farms have on the natural resources involved in farming, as well as evaluating the economic sustainability.

The program has been successful on multiple levels. There are many partnering organizations involved with the Discovery Farms that take ownership in ensuring the program is successful. The advisory board has members from Arkansas Association of Conservation Districts, Arkansas Game and Fish, U.S. Geological Survey, NRCS and several other organizations with interest in agriculture and natural resource conservation. The program is appealing to many funding sources, which has allowed them to pull funding from 15 to 16 different sources. This is important because each site has \$12,000-15,000 in infrastructure plus the cost of sample analysis.

The program has generated significant interest from farmers and policy makers. The Discovery Farms are a good platform to showcase Arkansas agriculture to those not involved in agriculture, such as policymakers. The program is an avenue to introduce them to farmers and to present approaches that farmers are using to address

conservation, stewardship and natural resource management. Because of this, the Discovery Farms have been featured in national and state tours including a tour highlighted by Ann Mills in the USDA blog post titled "[Conservation Work in Arkansas Makes Positive Impact Downstream](#)".

Another important success of the program is that farmers have become advocates of the program and the practices that are being researched. It has allowed them to recognize that they can play a role in solving important agriculture issues. Often the farmers collaborating with the Discovery Farm Program are recruited for speaking engagements to share their experiences and project results with other farmers. Daniels says that these types of opportunities for farmer-to-farmer teaching are some of the most effective methods to change or improve the production practices of other farmers.

An important outcome of the program activities is that it has verified farmer assumptions that nutrient losses through runoff are quite small. This was something that farmers anticipated because they were not seeing reductions in yield.

**Other Collaborators:** As co-Directors of the Arkansas Discovery program Dr. Daniels welcomes other scientists to bring their expertise to the program. Because the program is stakeholder driven, the Discovery Farms may be an ideal component of USDA grant-funded research, or other agency research, by serving as an on-farm research site. Other scientists that are or have been involved include Chris Henry, Bill Robertson, Ben Runkle, Trent Roberts, Thad Scott, Brian Haggard and Jennie Popp.

**Project Timeline:** The program started in 2011 and will continue indefinitely. Data will be collected on each site for at least 4-5 years, then moving on to other farms.

**Tools used:** Each Discovery Farm is different but much of the equipment and tools used are for monitoring water quality and quantity. Flow meters measure irrigation applications, run-off samplers and edge of field samplers collect information on water quantity and quality, and automated samplers collect information on water flow rates. From these tools and systems, information is collected on water that is used, run off and recycled.

**For more information:** <http://discoveryfarms.uark.edu/>