“Evaluating 4R Nutrient Stewardship in the Lake Erie Watershed.”

Comments on the value of the multidisciplinary approach

Collaborating scientists were asked "How have you as a professional benefitted from the people representing one or more of the other disciplines in this multidisciplinary group?"

Laura Johnson

“This project has benefited me professionally by solidifying a working collaboration with Kevin King allowing us to maintain frequent contact and share data easily. We have already been working on manuscripts to combine our datasets to tell more complete stories of environmental runoff. In addition, this project has helped me better understand the dynamics of farmer decision making regarding practices, which has helped me better communicate and show empathy when discussing the issues of Lake Erie algal blooms.”

Kevin King

“I have benefited from this multidisciplinary approach by gaining a better appreciation of just how integrated producer decisions are across disciplines (social, economic, environment; the three Ps).”

Brian Roe

“Working in an interdisciplinary setting allows me to learn the jargon and embedded assumptions that those from other disciplines employ in their analyses. An improved understanding of these accomplishes several things. First, it forces me to adapt and/or avoid my own disciplinary jargon in those settings. Second, it makes me revisit the assumptions embedded in my own thinking. Together these help me look for ways to better understand the linkages and feedbacks between the models I use and the models employed by others…”

Robyn Wilson

Increased understanding of the “big picture” around complex socio-environmental problems, and an appreciation for the importance of systems thinking and multidisciplinary collaboration. These types of efforts are needed to ensure that each of our efforts at carving out a piece of the problem are informed by the insights of folks in other disciplines with other sets of expertise.

Stan Livingston

“I greatly benefitted from the social surveys (Robyn Wilson) and the insight that that group provided. It was quite revealing and surprising regarding the different questions that could be answered based on different classifications and grouping of answers provided by the survey respondents.”

Carrie Vollmer-Sanders

When I think about this rock star group we have on this research project, I get so excited. Not only are these researchers experts in their field, they work together well, almost feeding off of each other to make the end product something that will be accurate and valuable for years to come. Just from our brief time on the project, I think conservation and agriculture would be further ahead if social and soil scientists worked together more. Below are a few sentences about how I’ve benefited.

Because there are a wide variety of disciplines and interrelated research connected to this one project, I’ve been able to think more holistically about the connection between the 4R Certification Program and change in behavior and what science the 4R Advisory Committee will need to discuss concerns like subsurface tile drainage. The 5 year timeframe also allows for more robust discussions and learning from the various disciplines. For example, the farmer and agribusiness survey questions are better informed because economists, soil scientists, and modelers identify data gaps and correlations and the surveys are altered accordingly.

Todd Redder

The modeling we are pursuing on this project, as well as for other related projects, is all about integrating the best science to develop the best predictive tools – and then also understanding and characterizing the overall uncertainty and the sensitivity of simulation results to specific assumptions. Working with those involved in field studies (such as Kevin and Mark Williams) has already been very beneficial in terms of developing a better working understanding of processes (such as P delivery through tile drains) for which research had been extremely limited until now - and therefore have been very difficult to represent in watershed models. The willingness of those folks to share data early and often is refreshing compared to other project settings we have worked within.

On the socioeconomic side, I am seeing a lot of potential benefit in terms of coordination with OSU folks regarding designing surveys and specific questions that can effectively help fill in some of the “gaps” in our collective understanding of current cropland management practices and the distribution of those practices around the WLEB. Making appropriate assumptions in the watershed models concerning “current conditions” is crucial to properly characterizing the benefit of 4R and other candidate BMPs, and the surveys that Robyn and Brian are pursuing will be a significant aid in confirming or revising the rough assumptions we have been working with to date.

Rem Confesor

Working with topnotch researchers in this multi-disciplinary Lake Erie watershed study motivates me to perform and achieve quality research work and at the same time helped me understand the 'big picture' in finding and implementing solutions to the very complex Lake Erie problem that we are facing.