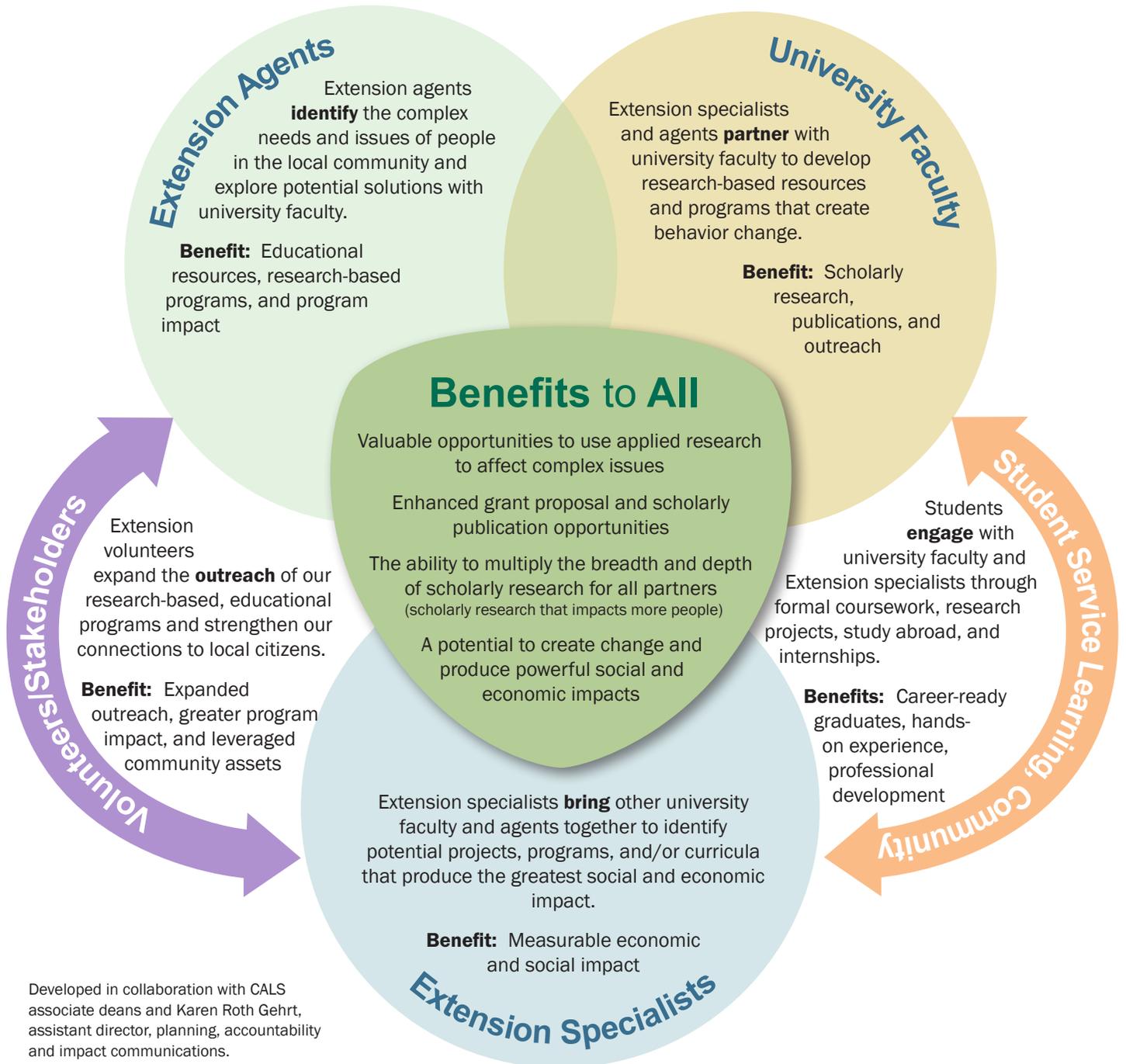


Common Ground: Why Should University Faculty Partner with Virginia Cooperative Extension?



Developed in collaboration with CALS associate deans and Karen Roth Gehrt, assistant director, planning, accountability and impact communications.

Nothing is more impactful than university faculty using the tripartite mission of discovery, learning, and outreach to impact people and their communities. University and Extension faculty, volunteers, associations, and students have wonderful opportunities to partner through applied research projects and educational programs that foster positive changes in the lives of Virginians. Let's work together for the benefit of everyone!

University
Faculty



Extension Agents
and Specialists



A powerful
potential to
change the
lives of people

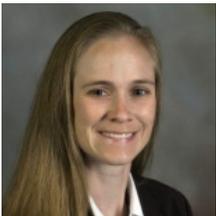
through research, behavior
change, and economic and
social impact.

Here's an example of how community—university—Extension partnerships benefit everyone involved...

The Virginia Household Water Quality Program (VAHWQP) works to improve the health and safety of the 1.7 million Virginians who rely on private water systems (wells, springs, and cisterns) for their household water. In the U.S., public water supplies are regulated under the Safe Drinking Water Act, which mandates regular testing and treatment for many contaminants. Homeowners who rely on private water supplies are completely responsible for routine testing of their water quality, maintaining their systems, and making decisions about water treatment.

Erin Ling and Brian Benham, on-campus Virginia Cooperative Extension faculty from the Biological Systems Engineering Department (BSE), work with trained Extension agents and volunteers who are part of the Virginia Master Well Owner Network to offer drinking water clinics in 25-30 counties each year. Homeowners collect water samples from their taps, which are sent to Virginia Tech to be analyzed for 14 water quality parameters, including bacteria, nitrate, lead, hardness, and copper. Test results are returned to participants at an Interpretation Meeting, where water test results are explained, and attendees are educated about private water system care and maintenance, and options for solving any water problems are identified.

About 45 million Americans rely on private water systems, but there is relatively little research on the water quality, system maintenance (or lack thereof), and resulting impacts on the health of families that use wells, springs, and cisterns. Since 2011, the VAHWQP has partnered with faculty and graduate students in BSE to better understand sources of contamination affecting private water supplies and their potential human health effects. Ultimately, Extension faculty will use information generated from this research to improve programming and benefit stakeholders.



Leigh-Anne Krometis

“Partnering with VAHWQP has allowed my research group to take advantage of existing relationships and social networks built through decades of Virginia Cooperative Extension programming to better study relationships between water quality and environmental factors. More importantly, it provides my students with an opportunity to meet and listen to the stakeholders potentially affected by their research and to immerse themselves in Extension programs, which is a great example of a grassroots public health intervention.”

– Leigh-Anne Krometis, Assistant Professor, BSE



Rich Allevi

Rich Allevi (BSE, MS 2012) examined water quality data and survey information to determine if private drinking water system characteristics (e.g. age of system, type of plumbing materials) could be used to predict bacteria contamination. Identifying common construction or maintenance issues that are associated with bacterial contamination enables Extension faculty to provide more helpful recommendations to private water supply users. Rich's work confirmed a statistical relationship between the depth of the well, the presence of in-home treatment devices, and increased risk of bacterial contamination.



Tammy Smith

Tammy Smith (BSE, MS 2013). While coliform bacteria found in household water samples suggests a possible health risk, detection alone does not provide information on the source of contamination. Tammy's research applied “source-tracking” techniques common in surface water management to samples collected by VAHWQP. These tests detect microbial or chemical markers typically found only in human waste to identify samples likely contaminated by septic drainfields. Detection of these markers could be used to inform homeowners of the sources of bacteria in order to assist them in determining the best management strategy to protect their water quality.



Kelsey Pieper

Kelsey Pieper (BSE, PhD student). When VAHWQP added lead to its suite of tests in 2012, levels above the EPA health action level of 15 parts per billion were found in 20% of first draw samples from participant homes. As part of her doctoral work, Kelsey is analyzing samples collected by VAHWQP for dissolved and particulate lead. The objective of this research is to better understand possible sources of lead within the home, such as solder in pipes or brass fixtures. Her findings will help the Extension team improve recommendations for fixes for homeowners who have undesirable lead levels in their water supplies.