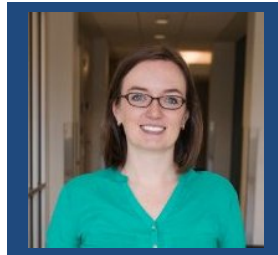


2017  
University of Kentucky Superfund Research Program &  
Kentucky Department of Environmental Protection  
Division of Waste Management  
Research Translation Seminar

September 13 (Wednesday) 1:00 pm  
300 Sower Blvd., Frankfort

## Advanced Composites for In Situ Remediation of Groundwater and Surface Waters

Featured Speaker: Dr. Alexis Wells Carpenter, Principle Investigator at AxNano



AxNano is developing a range of composite materials for remediation of contaminated water with a focus on tunability, low-cost, ease of use, and environmentally friendly materials. This seminar will focus on two amendments AxNano is developing in their RemRx™ platform for in situ chemical remediation. RemRx™ CRP is a controlled release material for ISCO that AxNano is developing in collaboration with Professor Stephanie Luster-Teasley at North Carolina A&T. The highly tunable polymeric pellets can provide sustained levels of oxidant delivery into the subsurface with a single application, eliminating the occurrence of rebounding. Permanganate and persulfate-based CRPs are available for pilot scale field testing. AxNano is also developing RemRx™ CSI, a zero valent iron-based composite with functionalities to improve both reactivity and transport compared to current ZVI formulations on the market. The ZVI technology is being developed in collaboration with University of Arkansas Professor Lauren Greenlee.

AxNano has received federal funding through the Small Business Innovative Research programs of the National Science Foundation, the National Institutes of Environmental Health Sciences' Superfund Research Program, and the National Institute of Standards and Technology in support of developing these remediation technologies. We are currently looking for pilot testing sites for both the controlled release CRPs for ISCO and the zero valent iron CSIs for ISCR.

**Bio:** Alexis Wells Carpenter PhD is Principal Investigator at AxNano, a small business entity with over 30 years' experience developing early stage technologies to address specific market needs. Dr. Carpenter's expertise is in the design and application of multifunctional nanomaterials for use in environmental and biomedical markets. Dr. Carpenter has a PhD in Inorganic Chemistry from UNC-Chapel Hill where her dissertation focused on manipulating particle formulations for controlled drug delivery and antimicrobial applications, under the advisement of Professor Mark Schoenfisch. She subsequently worked with Dr. Mark Wiesner in the Superfund Research Center and Center for Environmental Implications of Nanotechnology at Duke University developing zero-valent iron technologies for in situ sediment remediation and enhanced wastewater treatment. AxNano is a sub-entity underneath Triad Growth Partners, LLC (TGP), which connects entrepreneurs and scientists to launch or enhance existing technologies and build profitable businesses.

