

## ***Coupled Hydrological, Biogeochemical, and Anthropogenic Processes in Watersheds***

Dr. Beth Boyer, Professor, Department of Ecosystem Science & Management and Director, Pennsylvania Water Resources Research Center, Penn State University

In this seminar, I will present examples of observational and modeling studies that link processes across watershed scales, toward: 1) exploring linkages between landscapes and stream water; 2) identifying principal controls on water and water quality at multiple watershed scales; and 3) quantifying cumulative watershed effects on downstream waters. I will describe the use of statistical models to identify major terrestrial and aquatic properties that control streamflow and nutrient loadings across a range of watershed sizes, using the Spatially Referenced Regression on Watershed Attributes (SPARROW) approach. Interdisciplinary research in the hydrological sciences provides an important basis for policies and management strategies to mitigate the effects of water pollution - toward protecting, conserving, and restoring surface waters.