

ABIGAIL O'CONNOR, Dept of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV, 26074, and DR. JAMES WOOD, Dept of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. Microbial source tracking of a mixed land use tributary in the Upper Ohio River Basin.

Wheeling Creek contributes high levels of the fecal indicator bacterium *Escherichia coli* (*E. coli*) to the Ohio river. Since Wheeling Creek is used recreationally, elevated fecal coliform levels pose potential health risks including gastrointestinal or respiratory illness to humans who have direct contact with this stream. In collaboration with the Wheeling Water Pollution Control Division, we are conducting a longitudinal study of 12 sites spanning 25 stream miles encompassing rural and urban land uses. For each site, we are collecting weekly bacteria samples from the water column and recording water chemistry data. We are analyzing seasonal trends in bacterial contamination and correlations with site parameters including rainfall, water chemistry, and land use to develop a baseline data set and identify the greatest contributors to *E. coli* levels in the creek.

In addition to quantification of coliform bacteria and *E. coli* concentrations, we are conducting strain analysis of fecal bacteria using a genetic sequencing tool to indicate the primary source of contamination for each site. Since *E. coli* contamination could originate from human sewage, wildlife, or agriculture, microbial source tracking can help to indicate the health risk of bacterial contamination in Wheeling Creek and inform remediation efforts.