

LAURA ROBERTSON, Dept of Biology, Shepherd University, Shepherdstown, WV, 25443, MICROBIAL ECOLOGY CLASS, Shepherd University, Shepherdstown, WV, 25443 and JESSICA JOYNER, CUNY - Brooklyn College, Brooklyn, NY, 11210 Preliminary investigation of soil bacterial communities from sites experiencing diverse human activity.

Students in the Microbial Ecology class at Shepherd University investigated the bacterial communities present in soil samples collected from four sites across Shepherd University that experience different vegetation and distinct human activities: a wooded site, a perennial garden, an organic garden at the Campus Sustainability Site, and a grass lawn that experiences heavy student traffic. To identify bacterial species present in the soil samples, DNA was extracted from the soil and sent to Molecular Research Labs for 16S rRNA microbiome sequencing. The resulting sequences were then organized into operational taxonomic units for each site and biodiversity estimated for each site. Principal coordinate analysis revealed that the bacterial community in soil from the heavily trafficked lawn site was distinct from the bacterial communities found in soils collected from the other three sites. This initial research provides a basis for a longitudinal study investigating the effect of human activity on microbial communities in soil at Shepherd University. This course-based research project was supported by a West Virginia Space Grant Consortium College Course Development Grant, Authentic Research Experience in Microbiology (NSF-TUES #1323225), and the Shepherd University Biology Department.