**TITLE**

**Contaminant remediation potential of *Lespedeza cuneata***

Ty Foster\* & Nilesh Sharma

Department of Biology, Western Kentucky University, Bowling Green, KY 42101

*Lespedeza* was introduced in the US to reduce soil erosion and its conservation quality was found to be exceptional. As a forage legume crop, it has many desirable attributes. It persists under a wide range of soil conditions including ravaged mine sites. In the present study, we are examining element and heavy metal accumulation potentials of *Lespedeza* growing on the Butler County landfill site. Landfill leachate is known to carry various amounts of dissolved organic matter, inorganic macro components (common cations and anions including sulfate, chloride, iron, aluminum, zinc and ammonia), heavy metals (Pb, Ni, Cu, Hg), and xenobiotic organic compounds but no study has been conducted on this specific site. Here we hypothesize that *Lespedeza* plants growing on such a site will accumulate a number of elements and heavy metals. The ICP-OES analysis of landfill soils shows high concentrations of Fe, Al, Ca, P and other elements. Root and shoot of harvested plants are being analyzed particularly for their accumulation potential of heavy metals. Scanning micrographs of plant samples are being examined for anatomical alterations. Photosynthetic effectiveness of plant specimens is being analyzed *in situ* via a Photosynthesis Efficiency Analyzer. In the end, we will identify the rhizospheric microbiome involved in nitrogen fixation using nitrogenase *nifH* gene amplification by PCR. All analyses will be statistically compared to a control site located at the WKU Upper Green River Biological Preserve.