LORELEI EAGLE & NICOLE GARRISON, Department of Biological Sciences, West Liberty University, West Liberty, WV, 26074. Utility of the Mitochondrial D-loop to Understand Variation in Prairie Chickens (*Tympanuchus*)

The North American prairie chickens (genus *Tympanuchus*) consist of three species of galliform bird found within the middle USA and Canada. The mitochondrial d-loop is a non-coding protein section located in the replication region of DNA. This gene has become popular within evolutionary analysis due to its ability to detect highly variable regions within sequences to a base pair difference. Previous studies show lack of major genetic differentiation within *Tympanuchus* using mitochondrial d-loop. These studies typically contain low sequence counts or are species specific, leaving a gap in research on large scale variation analysis across the genus. We used all publicly available sequences to analyze variation of *Tympanuchus* on a species and subspecies level. Consistent with past research, no major genetic differentiation among species and subspecies was found despite our large sample size either phylogenetically or through mtDNA haplotypes. One distinct population (*T. cupido cupido*) was detected, likely due to their geographical isolation to other subspecies. This gene is likely not informative at a species level for *Tympanuchus* but may have limited utility as a population genetic marker. Understanding single nucleotide divergences provides useful information when conserving declining populations of this genus like *T. cupido attwateri*.