

MARIAH CASHBAUGH & JOSEPH HORZEMPA Dept of Biomedical Sciences, West Liberty University, West Liberty, WV, 26074. The role of three putative transcriptional regulators of *Francisella tularensis* during replication within host cells.

Francisella tularensis is a pathogenic bacterium capable of replication within host monocytes and macrophages and is the causative agent of Tularemia. We utilized the attenuated live vaccine strain to model the infection and replication of *F. tularensis* in the mouse macrophage RAW 264.7 cell line. Our lab has previously identified three genes predicted to encode transcriptional regulators that are upregulated in the presence of human blood cells: FTL_0671, FTL_1199, and FTL_1665. The objective of this project is to determine if these genes play a role in the pathogenesis of *F. tularensis*.

Wild type *F. tularensis* LVS and mutant bacteria with FTL_0671, FTL_1199, and FTL_1665 gene deletions were constructed and engineered to express an extremely bright variant of Emerald Green Fluorescent Protein (encoded in the plasmid, pKHEG). These strains were used to infect RAW 264.7 macrophages and fluorescence was monitored over time using a plate reader. Our results suggest that FTL_1199 and FTL_1665 are attenuated for intracellular replication indicating that the products of the mutated genes may be important for pathogenesis.