

JENNIFER MYERS and JOSEPH HORZEMPA, Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. The Role of FTL_1229 during Infection and Erythrocyte Invasion by *Francisella tularensis*.

Francisella tularensis is a gram-negative bacterium that causes the disease, tularemia. Due to the highly infectious nature of *F. tularensis*, the Centers for Disease Control and Prevention classified this bacterium as a category A bioterrorism agent. To combat this threat, understanding the pathogenesis of *F. tularensis* is necessary. FTL_1229 encodes a protein homologous to the ATP binding protein portion of an ABC transporter. This gene is of interest because its expression is induced in the presence of human red blood cells. Therefore, we hypothesized that FTL_1229 may be involved during invasion of these host cells. However, we and others have produced evidence that this gene is essential which means that producing a null mutation is unfeasible. Therefore, we utilized a Tet-responsive promoter system to control expression of FTL_1229 in trans and are attempting to delete the chromosomal copy of this gene. By modulating expression of FTL_1229, we will be able to evaluate the role of this gene in erythrocyte invasion and during infection. (Supported by NIH Grant P20GM103434 to the West Virginia IDeA Network for Biomedical Research Excellence and funding from the WV Research Challenge Fund [HEPC.dsr.14.13] and NIH grant 1R15HL147135-01 and This research was made possible by NASA West Virginia Space Grant Consortium, Training Grant # NNX15AI01H.).