

RHIANNON MACOM AND JOSEPH HORZEMPA, Dept of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074. Anti-Bioterror Vaccine: Utilization of *Francisella tularensis* LVS to Generate a Plague/ Tularemia Vaccine

*Francisella tularensis* and *Yersinia pestis* are bacteria that are classified as potential bioterrorism agents by the Centers for Disease Control and Prevention. A vaccine that is capable of producing protective immunity against multiple bioterror agents would be especially desirable. Therefore, the goal of this research is to create a vaccine that will produce immunity to both *F. tularensis* and *Y. pestis*. We are generating a construct in which the coding region for Tul4 (an immunodominant protein of *F. tularensis*) is linked to OmpA (a protective antigen of *Y. pestis*) under the control of a robust *F. tularensis* promoter. This construct will be expressed in *F. tularensis* Live Vaccine Strain. Patients who have been immunized with this strain show robust immunological memory (over three decades post-vaccination). After confirming expression of the chimeric Tul4-OmpA protein, mice will be immunized with the recombinant LVS strain and then subsequently challenged with both *F. tularensis* and *Y. pestis* to determine the efficacy of the vaccine strain. This research could lead to the generation and utilization of a bivalent vaccine targeting two possible bioterror agents; the strategy for vaccine construction could potentially be applied toward protection against other pathogens.