RHIANNON MACOM AND JOSEPH HORZEMPA, Department 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 can produce a protective immunity against multiple agents of bioterror would be especially desirable. Therefore, the overall goal of this research is to create a vaccine that will produce immunity to both *Y. pestis* and *F. tularensis*. We generated 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 was constructed in *E. coli* and was subsequently mobilized to *F. tularensis* LVS (Live Vaccine Strain). Patients who have been immunized with LVS show an immunological memory of over three decades post-vaccination, so we predict that a similarly lengthy response will be exhibited against the *Y. pestis* antigen. The expression of the chimeric Tul4-OmpA protein is currently being verified through western blotting. After confirmation, mice will be immunized with this recombinant LVS strain then subsequently challenged with both *F. tularensis* and *Y. pestis* to determine the efficacy of the recombinant vaccine. This research will provide information on how to protect against two possible bioterror agents and may even be applied to other bacteria. ***(Supported by NIH Grant P20GM103434 to the West Virginia IDeA Network for Biomedical Research Excellence and a grant from the NASA WV Space Grant Consortium [NNX10AK62H])***