Vaccine development for protection against both Tularemia and Ebola: Gage Pyles and Joseph Horzempa. Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV

The Ebola Virus (EBOV) and Francisella tularensis (the causative agent of tularemia) are classified by the Centers for Disease Control and Prevention as Category A select agents because of their potential for use in bioterrorism. The development of a vaccine against both pathogens could therefore substantially increase our preparedness against bioterror. The overall goal of this research is to develop a vaccine that could combat both EBOV and F. tularensis. We are in the process of generating a fusion protein consisting of GP (the glycoprotein of EBOV) and Tul4 (an immunodominant outer-membrane lipoprotein of F. tularensis). This newly generated chimeric protein (Tul4-GP) will ultimately be expressed in F. tularensis LVS (Live Vaccine Strain). Patients previously immunized with this strain show an immunological memory of over 30 years after being vaccinated. Following transfer into F. tularensis LVS, expression of Tul4-GP will be confirmed and the efficacy of this strain as a vaccine against both pathogens will be determined.