1125-92-2475 **Anna Mummert*** (mummerta@marshall.edu) and **Howard Weiss**. *Controlling Viral Outbreaks: Quantitative Strategies.* Preliminary report.

Infectiousness, transmissibility, and death rate of individuals for a viral infectious disease commonly depends on their viral load. We develop and analyze a viral titer structured transmission model that classifies infected individuals by viral load. The model allows for both direct transmission from infectious individuals and indirect transmission from an environmental reservoir. We incorporate a large variety of control measures onto the backbone of our basic viral titer structured transmission model, including vaccination, antivirals, isolation, and environmental disinfection. Mass culling remains the primary strategy for controlling livestock epidemics. The collective information presented here provides the ability to test the efficacy of many combinations of control strategies to end an outbreak, including forms of less indiscriminate culling. (Received September 20, 2016)