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**Anna Mummert\*** (mummerta@marshall.edu), **Roger Estep** (estep102@marshall.edu),  
**Robert Hughes** (robhghes@gmail.com) and **Jessica Shiltz** (jessica.l.shiltz@wv.gov). *Two  
Waves of Pandemic Influenza: An Agent-based Exploration*. Preliminary report.

In the United States, the past four pandemic influenza outbreaks have shown two waves of infection – one in the summer and one in the winter. This contrasts with seasonal influenza which has only one wave during the winter. The exact mechanisms leading to one wave or two are not known. In this talk I will describe an agent-based Susceptible-Exposed-Infectious-Recovered disease model for a closed population. The model is parameterized using values for seasonal influenza spread in the United States. Remarkably, though rarely, the seasonal influenza model can show two waves of infection, matching that of a pandemic influenza outbreak. The agent-based model is modified using several intervention strategies, such as vaccination and quarantine. The each modified model is explored for conditions leading to two waves of infection. (Received September 25, 2018)