Hsuan-Wei Lee (waynelee1217@gmail.com), Anzhelika Lyubenko* (anzhelika.lyubenko@ucdenver.edu), Yuhang Ma (ym367@cornell.edu), Emily Meissen (emilymeissen@gmail.com), Daniela Velez-Rendon (dvelez3@uic.edu), Nara Yoon (nxy47@case.edu), John Peach (jpeach@ll.mit.edu), Cammey Cole Manning (manningc@meredith.edu) and Christian Gunning (cegunnin@ncsu.edu). *Modeling Ebola: Three Distinct Models with Similar Predictions.

We present and compare three models of the Ebola outbreak in Liberia during 2014-2015 and examine the effect of international intervention. We utilize both system dynamics and agent-based approaches. We show that the basic reproduction number of the disease is greater than one before intervention and decreases to less than one after intervention, implying eventual eradication of the disease. We demonstrate that the probability of an outbreak varies depending on the population size and that even for large populations there is a 70% chance of an outbreak if only one person gets exposed to the disease. In addition, if an outbreak is not contained in the early stages and the individuals do not change their behavior as the virus prevails, over 90% of population contracts the disease and about 50% of the population dies because of it. Effective intervention may decrease both figures to be less than 1%. When including spatial movement in the agent-based setting, we conclude that outbreaks can be less severe due to the population not being well-mixed. (Received August 12, 2015)