1116-VM-2209 **Bruce Pell*** (bepell@asu.edu), **Javier Baez**, **Gerardo Chowell**, **Yang Kuang**, **Daozhou Gao** and **Tin Phan**. *Implications of Logistic Equation Based Spatial and Behavioral Ebola Forecasting Models.*

Mathematical models are essential in the efforts to forecast the course of the West Africa Zaire ebola virus (EBOV) epidemic that started in December 2013. Here, we validate a family of logistic patch models for use in disease modelling and forecasting. In particular, we derive the well known logistic equation in an infectious disease context and forecast the trajectories of the EBOV epidemic in parts of West Africa. We also derive the basic reproduction number in this context. We then extend the logistic model by fitting the total reported case numbers at different geographical scales using multi-patch models that incorporate migration and logistic growth. The patch models show an improvement over the logistic model in short term forecasting, but produce erratic behavior for long term forecasting due to too many parameters. To circumvent this issue, we provide preliminary results of a continuous modeling effort using a partial differential equation model. This work contributes to the mathematical forecasting of disease outbreaks and extends a recent modeling effort reported in the PLoS Currents Outbreaks in 2014 by including spatial heterogeneity. (Received September 22, 2015)