1154-92-750 **Marissa Renardy*** (renardy@umich.edu), **Denise Kirschner** and **Marisa Eisenberg**.
Structural parameter identifiability in age-structured epidemic models. Preliminary report.

Identifiability analysis addresses the question of whether the input parameters of a mathematical model can be uniquely identified, given observed data. This analysis is crucial in interpreting biologically relevant predictions from computational and mathematical models that rely on parameter values that are estimated from experimental datasets. In the context of epidemic models, parameter identifiability gives increased confidence in model predictions that are based on estimated parameters. While structural identifiability analysis has been extensively applied in the context of ODE epidemic models, it has not yet been widely explored for age-structured PDE models. These models present additional difficulties due to increased number of variables and derivatives as well as the presence of boundary conditions. In this work, we derive analytical identifiability results for age-structured epidemic models using a differential algebra framework. We focus on an SEIR model and explore the effects of age-dependent parameters on identifiability, as well as compare identifiability results to the corresponding ODE systems. (Received September 16, 2019)