1096-VL-2685 **Jessica Ginepro**, **Emma Hartman**, **Ryo Kimura**, **Matthew McDermott*** (mattmcdermott8@gmail.com), **Colin Pawlowski** and **Dylan Shepardson**. *Agent-Based Models for Analyzing Complex Disease Dynamics and Tuberculosis Intervention Cost Effectiveness in the US.*

Mathematical modeling has proven to be a powerful tool when analyzing disease dynamics and assessing various intervention strategies. The most widely used epidemiological models are compartmental differential equation models, variants of the common SIR model. In this work, we investigate the feasibility of modeling real-world disease dynamics with a stochastic, agent-based model. Models of this type more closely mirror real disease dynamics by capturing granularity, population heterogeneity, and stochasticity lost by deterministic compartmental models, but are often thought to be too complex to implement at the population level. Using a previously published 10-compartment differential equation model for validation, we develop an agent-based model of tuberculosis in the United States. To our knowledge, this is the first agent-based model of tuberculosis in the U.S. population, and the only population-level, dynamic model to examine economic implications of tuberculosis. (Received September 17, 2013)