

1135-93-2338

Marisa C Eisenberg* (marisae@umich.edu). *Model and Parameter Uncertainty in Environmentally Driven Disease Models.*

Environmentally-driven diseases such as cholera vary widely in their structures, in terms of transmission pathways, loss of immunity, and a range of other features. These differences can affect model dynamics, with different models potentially yielding different predictions and parameter estimates from the same data. Given the increasing use of mathematical models to inform public health decision-making, it is important to assess uncertainty both in parameter estimates and in model structure. In this talk, we will examine how alternative model structures can affect forecasting and parameter identifiability, evaluating whether the parameter values, model behavior, and forecasting ability can accurately be inferred from data. We will also examine how parameter estimation of environmentally driven disease models using alternative data sources, such as environmental surveillance. (Received September 26, 2017)