Report of NIMBioS short-term visit (July 23-27, 2014) to Cristina Lanzas and Shi Chen
By Chihoon Lee

Our *objective* is to quantify the transmission of STEC (Shiga toxin-producing *Escherichia coli*) serotypes by analyzing the cross-sectional data on STEC prevalence. This is an important problem that lies at the math/statistics/ecology interface. We consider a family of stochastic transmission models to estimate the transmissibility parameters of the different STEC serotypes. Our discussion was focused on how to: a) estimate transmission coefficient (β) and recovery rate (γ) through a single cross-sectional dataset for *E. coli* O157 serotype; b) estimate basic reproduction number (R_0) for all the other seven *E. coli* serotypes; and c) investigate uncertainty (i.e. type I and type II errors) in the transmission of different *E. coli* serotypes.

The participants were:
Chihoon Lee, Associate Professor of Statistics, Colorado State University
Cristina Lanzas, Assistant Professor of Epidemiology and NIMBioS Senior Personnel, University of Tennessee
Shi Chen, Post-doctoral Research Associate, University of Tennessee