Kristina B. Hilton* (khilton@mail.usf.edu), Department of Mathematics and Statistics, University of South Florida, 4202 E. Fowler Ave., CMC 342, Tampa, FL 33620-5700, and G. S. Ladde (gladde@usf.edu), Department of Mathematics and Statistics, University of South Florida, 4202 E. Fowler Ave., CMC 342, Tampa, FL 33620-5700. Multi-Cultural Networks Under Internal and External Stochastic Perturbations. Preliminary report.

Using Lyapunov type functions and comparison theorems, we explore the dynamics of a multi-cultural network under random environmental and structural perturbations. We examine the long-term behavior of members of the network. Moreover, we characterize various cultural state invariant sets within the network. Further, we present numerical models as a means of comparison between simulation results and various type of computational bounds. (Received September 14, 2016)