1096-60-1231 **Octavious Talbot*** (octavioustalbot@gmail.com), **Valerie Cheathon**, **Agustin Flores** and **Victor Suriel**. *Dynamics and Control of an Invasive Species: The Case of the Rasberry crazy ant Colonies.*

This project is motivated by the costs related with the documented risks of the introduction of non-native invasive species of plants, animals, or pathogens associated with travel and international trade. Such invasive species often have no natural enemies in their new regions. The spatiotemporal dynamics related to the invasion/spread of *Nylanderia fulva*, commonly known as the Rasberry crazy ant, are explored via the use of models that focus on the reproduction of ant colonies. A Cellular Automaton (CA) simulates the spatially explicit spread of ants on a grid. The impact of local spatial correlations on the dynamics of invasion is investigated numerically and analytically with the aid of a Mean Field (MF) model and a Pair Approximation (PA) model, the latter of which accounts for adjacent cell level effects. The PA model approach considers the limited mobility range of *N. fulva*, that is, the grid cell dynamics are not strongly influenced by non-adjacent cells. The model determines the rate of growth of colonies of *N. fulva* under distinct cell spatial architecture. Numerical results and qualitative conclusions on the spread and control of this invasive ant species are discussed. (Received September 13, 2013)