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Armando Arciniega* (armando.arciniega@utsa.edu), **Michael Broome** and **Gaby Prieto**.
Stochastic Modeling of Parasites in Host Populations.

The complexity of the host-parasite relationship, and its depression of host populations has been investigated and successfully modeled for large populations using deterministic methods. These models fail to accurately predict interactions within smaller populations, and require a statistical component to reclaim some degree of accuracy. This research employs stochastic differential equations to better forecast changes in small populations, and, in a practical setting, seeks to write software that will automate this procedure. (Received January 18, 2012)