1086-92-2056 **Matthew Cattivera***, mcattivera@sandiego.edu, **Seth Haney**, shaney@sandiego.edu, and **Adam Siepielski**, adamsiepielski@sandiego.edu. *Stochastic Effects on the Outcome of Species in Competition.* Preliminary report.

The vast biological diversity of the Earth cannot be overstated, however, the mechanisms that promote this diversity are still hotly debated. It is well known in community ecology that stochasticity can change the fate of a system of competing species. For example, systems that lead to coexistence in deterministic models may result in competitive exclusion in a stochastic model. Here we study a system of competing species with both stochastic and deterministic models to evaluate the impact of environmental variation and stochastic effects on coexistence. Using a deterministic model we can obtain analytical solutions in the autonomous case and use a perturbation method to extend this to approximate solutions where environmental variation is present. We compare this to a discrete stochastic model and find that, while the stochastic model predicts competitive exclusion, no such environmental variation can reproduce this behavior in the deterministic case. (Received September 24, 2012)