1125-VC-1578 **Suzanne M. O'Regan*** (smoregan@ncat.edu) and **Danielle L. Burton**. *Leading indicators of bifurcations in ecological systems.* Preliminary report.

Many ecological systems exhibit bifurcations. The bifurcation may be anticipated because prior to reaching the dynamical threshold, the system gradually loses stability ('critical slowing down'). Signatures of critical slowing down may be detectable through summary statistics, but the influence of environmental and demographic stochasticity on statistical patterns is unclear. Here, we consider the simplest possible models that exhibit transcritical, saddle-node and pitchfork bifurcations. Noise was assumed to be either additive, multiplicative or demographic in nature. In each case, linearization of the resulting stochastic differential equation leads to an Ornstein-Uhlenbeck process for the fluctuations around equilibrium. We derived expressions for leading indicator statistics, including variance, autocorrelation and power spectrum. Trends in leading indicators of each bifurcation depend on noise type. The ability to classify trends of summary statistics for a broad class of ecological models enhances our understanding of how critical slowing down manifests in systems approaching a transition. (Received September 18, 2016)