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Sebastian Schreiber* (sschreiber@ucdavis.edu), Department of Evolution and Ecology, One Shields Avenue, University of California, Davis, CA 95616. *Persistence of interacting populations in fluctuating environments.*

Understanding under what conditions interacting populations, whether they be plants, animals, or viral particles, persist is a question of theoretical and practical importance in population biology. Both biotic interactions and environmental fluctuations are key factors that can facilitate or disrupt persistence. To better understand this interplay between these deterministic and stochastic forces, I will present a mathematical theory extending the theory of persistence for deterministic systems to stochastic difference and differential equations. Using this theory, I will illustrate how (i) an arbitrary number of species competing for a single limiting resource can coexist and (ii) environmental noise enhances or inhibits coexistence in communities with rock-paper-scissor dynamics. Much of this work was done in collaboration with Michael Benaïm and Kolawolé A. S. Atchadé (Université de Neuchâtel). (Received September 13, 2010)