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Sebastian J. Schreiber* (sschreiber@ucdavis.edu), Department of Evolution and Ecology,
One Shields Avenue, University of California, Davis, CA 95616. *Should I stay or should I go? On
the evolution of dispersal.*

Plants and animals often live in landscapes where environmental conditions vary from patch to patch and moment to moment. Since the fecundity and survivorship of an individual depends on these factors, an organism may decrease or increase its fitness by dispersing across the environment. Consequently, a fundamental question in evolutionary ecology is "how do dispersal patterns evolve in spatially and temporally heterogeneous environments?" To address this question, analytical results will be presented about periodically forced models of competing species that only differ in their dispersal strategies. The analysis combines standard techniques from monotone maps with new results about one-parameter families of non-negative matrices. Several challenging problems in dynamical systems and matrix analysis will be posed. This work is in collaboration with Chi-Kwong Li (College of William and Mary) and Steve Kirkland (University of Regina) (Received September 02, 2008)