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**Roger M. Nisbet\*** ([nisbet@lifesci.ucsb.edu](mailto:nisbet@lifesci.ucsb.edu)), Dept. Ecology, Evolution and Marine Biology, UCSB, Santa Barbara, CA 93106. *Population dynamics in systems with unidirectional flow*. Preliminary report.

I shall present models of the spatio-temporal dynamics of populations in media with strong unidirectional flow (e.g. aquatic organisms in streams and rivers). For many models, there is a "response length" that characterizes the distance downstream over which the impact of a point source disturbance is felt. The response length is also an important parameter for characterizing the spatial and temporal response to non-point source disturbances at different spatial scales. Transient dynamics are frequently of great importance in rivers and streams, and I shall present some preliminary results (obtained in collaboration with K.E. Anderson and E. McCauley) on "reactivity" in advective systems. (Received August 26, 2005)