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Richard H. Elderkin* (relderkin@pomona.edu), Richard Elderkin, Department of Mathematics, Pomona College, Claremont, CA 91711, and **Kenneth L. Cooke** and **Wenzhang Huang**. *Maturation Delays and Oscillation in Predator-Prey Models*.

Predator-prey interactions are fundamental to biomass and energy flow in food webs. When maturation of juveniles (either predator or prey) is taken into account, standard ODE models must be modified to accommodate resulting delays in recruitment to the active adult classes. We examine this mechanism for a broad class of prey recruitment mechanisms, and show that (1.) when the delay is reflected in invulnerability of juvenile prey to predation, the results are fairly similar to the ODE case; yet (2.) when the delay reflects juvenile predators that are inactive in the predation process, Hopf bifurcation to stable oscillation can result. (Received March 05, 2008)