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**J. M. Cushing\*** ([cushing@math.arizona.edu](mailto:cushing@math.arizona.edu)), Department of Mathematics, 617 N Santa Rita,  
University of Arizona, Tucson, AZ 85721. *A Juvenile-Adult Model with Periodic Vital Rates.*

A global branch of positive cycles is shown to exist for a general discrete time, juvenile-adult model with periodically varying coefficients. The branch bifurcates from the extinction state at a critical value of the mean, inherent fertility rate. In comparison to the autonomous system with the same mean fertility rate, the critical bifurcation value can either increase or decrease with the introduction of periodicities. Thus, periodic oscillations in vital parameter can be either advantageous or deleterious. A determining factor is the phase relationship among the oscillations in the inherent fertility and survival rates. (Received September 19, 2005)