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James C Cameron* (j_cameron@utexas.edu), **Luis Diego Granera**, **Peter Jaworski** and **Loren Santana**. *Discrete Models with Proportional Harvesting*.

Difference equations used to model populations are analyzed, and we show how to control stability and induce chaos using proportional harvesting. In particular, we use the Beverton-Holt and Ricker models with proportional harvesting to demonstrate that a harvested system can be more stable than its unharvested counterpart. We also use digraphs to analyze the periodic structure of continuous functions, and we provide necessary and sufficient conditions for a digraph to support a continuous or piecewise monotone function. (Received July 27, 2011)