1033-92-6 **Suzanne Lenhart*** (`lenhart@math.utk.edu`), University of Tennessee, Math. Dept., Knoxville, TN 37996-1300, and **Wandi Ding**, **Louis Gross**, **Keith Langston** and **Leslie Real**. *Rabies in Raccoons: Optimal Control for a Discrete Time Model on a Spatial Grid.*

An epidemic model for rabies in raccoons is formulated with discrete time and spatial features. The goal is to analyze the strategies for optimal distribution of vaccine baits to minimize the spread of the disease and the cost of implementing the control. Discrete optimal control techniques are used to derive the optimality system, which is then solved numerically to illustrate various scenarios. (Received May 31, 2007)