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Suzanne Lenhart* (1lenhart@math.utk.edu), University of Tennessee, Mathematics Department, Knoxville, TN 37996-1320. *Using optimal control of PDEs to investigate population questions.*

Optimal control of partial differential equations can be used to investigate questions in diffusive population models. Managing resources is a crucial issue. One example is how to allocate limited resources to increase the population size. A second example considers this question: Given a resource function, what direction would the population choose to move to increase its size. Movement may cause costs due to the risks in movement. (Received August 07, 2013)