1077-35-987 **Heather Finotti**, Department of Mathematics, University of Tennessee, 227 Ayres Hall, 1403 Circle Drive, Knoxville, TN 37996, **Suzanne Lenhart** (lenhart@math.utk.edu), Department of Mathematics, University of Tennessee, 227 Ayres Hall, 1403 Circle Drive, Knoxville, TN 37996, and **Tuoc Van Phan*** (phan@math.utk.edu), Department of Mathematics, University of Tennessee, 227 Ayres Hall, 1403 Circle Drive, Knoxville, TN 37996. *Optimal Control of Advection Direction on Reaction-Diffusion Population Models.*

We investigate optimal control of the convective coefficient in a class of non-linear parabolic partial differential equations, modeling a population with non-linear growth. This work is motivated by the question: Does movement toward a better resource environment benefit a population? Results on existence, uniqueness, and characterization of the optimal control will be presented along with numerical illustrations.

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