1116-35-772 **Suzanne Lenhart*** (lenhat@math.utk.edu) and **Kokum DeSilva**. *Optimal control of parabolic PDE systems modeling competitive populations.*

We discuss an important ecological issue of population movement and its distribution in reaction to resources and to competition. We present the choices of directed movement through controlling the advective coefficients in a system of parabolic partial differential equations, modeling two competing species. We seek to maximize population levels while minimizing the cost of controls. In addition to presenting the optimal control analysis, different resource functions and corresponding directed movement choices are shown numerically. (Received September 12, 2015)