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Jerome Goddard II* (jgoddard@aum.edu), **A. Barnett**, **D. Harrell** and **R. Shivaji** (shivaji@uncg.edu). *Modeling habitat fragmentation at the landscape level via reaction diffusion equations.*

Habitat fragmentation affects a population in two key aspects, namely, the size of fragmented patches of habitat and the quality of inferior habitat surrounding the patches, called the matrix. Ecologists have confirmed that an organism's survival in a system is often linked to the size of the patches, quality of its surrounding matrix, and distance between patches. In this talk, we will model the effects of habitat fragmentation at the landscape level using a reaction diffusion system. We will explore dynamics of the model via study of the model's positive steady state solutions. Our results are obtained through a time map analysis (quadrature method) and Mathematica computations. We will briefly explore the biological implications of these results. (Received September 20, 2016)