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Buddhi R Pantha* (bpantha@abac.edu), Department of Science and Mathematics, Abraham Baldwin Agricultural College, Tifton, GA 31794, and **Suzanne Lenhart** and **Judy Day**. *Optimal control applied to a differential equation model for an anthrax epizootic.*

Anthrax is a fatal disease caused by a gram positive, spore forming bacteria called Bacillus anthracis. The disease is endemic to several national parks and one of the main causes of herbivore decline. Most anthrax infected animals face inevitable death and each infected carcass deposits massive number of spores into the surrounding environment. Thus, controlling new infections through vaccination and eliminating spread through proper carcass disposal are the only feasible ways to effectively control the disease when an outbreak occurs. In this talk, a system made up of parabolic partial differential equations together with ordinary differential equations will be presented and effect of the two most commonly used controls of vaccination and carcass disposal on disease transmission will be investigated. Some numerical results will also be presented. (Received August 21, 2016)