1067-49-1915   **Michele L Joyner*** (`joynerm@etsu.edu`), PO Box 70663, Johnson City, TN 37614. *Optimization Strategy for Single and Dual Resistance of Antibiotics in Hospitals.* Preliminary report.

Antibiotic resistance is a growing threat to public health and much effort is being made to reduce its overall spread. Toward this end, mathematical models have been designed to describe the transmission of resistant strains of bacteria within hospitals to better understand the effects of a variety of prevention techniques, including drug cycle times, drug mixing, and patient isolation. The models also take into account the potential presence of both single-resistance and/or multiple-antibiotic resistant strains of bacteria in the hospital setting. In this talk, I examine the problem of finding an optimal treatment regime which minimizes both single and dual antibiotic resistance within an inverse problem framework. (Received September 22, 2010)