1077-92-2701   **Richard Schugart*** (`richard.schugart@wku.edu`) and **Tennesse Tucker Joyce**. *Using a Mathematical Model to Analyze the Treatment of a Wound Infection with Oxygen Therapy.* Preliminary report.

A mathematical model was developed to treat a wound with a bacterial infection using oxygen therapy. The model describes the relationship among neutrophils, bacteria, oxygen, cytokines, and reactive oxygen species. A quasi-steady-state assumption was introduced to reduce the model down systems of two and three equations. A mathematical analysis on the reduced model and simulation results will be presented in this talk. (Received September 22, 2011)