Meeting: 1006, Lubbock, Texas, SS 14A, Special Session on Undergraduate and Graduate Student Research (and Related Poster Session organized by Ali Khoujmane and Mara D. Neusal, Texas Tech)

1006-92-99 **Jody Zuehlke*** (`ProfJody@yahoo.com`), Department of Mathematics, Physics, and Engin, Tarleton State University, Box T-0470, Stephenville, TX 76402, and **Keith E. Emmert**, Department of Mathematics, Physics, and Engin, Tarleton State University, Box T-0470, Stephenville, TX 76402. *Deterministic Modeling of the Effect of Reservoir Hosts on the Spread of Chytrid Fungus within the Barred Tiger Salamander Population.* Preliminary report.

A discrete-time model is formulated for the spread of Chitridiomycosis in a structured host population. The host population is assumed to be the barred tiger salamander, Abystoma Tigrinum Mavortium. The host population is subdivided into several developmental stages, terrestrial adult, neotenic adult, juvenile, and larval. The larval stage is further subdivided into a typical larval stage and an extended larval stage. Several different sub-models of the full structured epidemic model are studied and conditions derived for the stability of the extinction equilibrium, as well as stability of the disease free equilibrium. Numerical simulations are used to investigate features of various aspects of these models. (Received February 09, 2005)