Texas Tech University. Applied Mathematics Seminar.

# A DISCRETE-TIME WEST NILE VIRUS EPIDEMIC MODEL

Sophia Jang, Texas Tech University

October 8, 2008

Room: MA 112, Time: 4:00pm

ABSTRACT.We present a discrete-time West Nile virus model, consisting of two interacting populations, the vector and the avian populations. The avian population is classified into susceptible, infective, and recovered classes while an individual vector is either susceptible or infective. The transmission of the disease is assumed to be only by mosquitoes bites and vertical transmission in the vector population. The model behavior depends on a lumped parameter $R_0$. The disease will die out if $R_0 < 1$ and can persist if $R_0 > 1$.