1100-92-210 **Curtis Lawrence Wesley*** (curtiswesley@letu.edu), 1711 Tulip Ln, Longview, TX 75601. *A Model of the Spread of West Nile Virus with Varying Mosquito Populations.* Preliminary report.

In this paper, a model for the spread of West Nile Virus is presented that incorporates seasonal weather patterns. Climate change can be a key factor in the increase or decrease of mosquito populations, the main disease vector for West Nile Virus. This can have a huge impact on the spread of disease through the human and bird populations. I develop a human-bird-mosquito SI model with seasonal effects. Numerical simulations are presented and the basic reproduction number is considered for the more basic cases. (Received February 08, 2014)