1086-37-2592          **Ana Vivas-Barber\*** (`avbarber@adams.edu`), 180 Curtis Lane, Alamosa, CO 81101, and **Sunmi Lee** (`mathever@gmail.com`). *A mathematical Model for the Spread of the West Nile Virus in Colorado.* Preliminary report.

West Nile Virus (WNV) is a mosquito-borne disease: birds are the natural reservoir and the most common hosts are humans and horses; It was detected for the first time in the US in 1999 in New York City (CDC, 1999). Since then the spread of the virus has been tremendously increased among all the states (CDC, 2001) resulting in numerous human infectious and deaths. In 2012, there has been a considerable increase in infectious cases in Colorado (CDC, August 2012). The purpose of the present work is to develop a mathematical model for the transmission dynamics of the West Nile Virus (WNV) in Colorado. A system of nonlinear ordinary differential equations is formulated by incorporating the vital dynamics of vectors (mosquitos) as a function of temperature in order to capture the effect of the Global warming on a significant increase in the vector population. We find the equilibrium points of the model and the stability of the equilibrium points for a certain threshold quantity (Ro). This will help us understand the WNV transmission dynamics so that we can propose a better control strategy for the mosquito's population and preventive strategies for the human and horse's population. (Received September 25, 2012)