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**Vinodh kumar Chellamuthu\*** (vinodh.chellamuthu@dixie.edu), 225 South University Avenue, St. George,, UT 84770, and **Jisun Otterson**. *Modeling the Effects of Wolbachia Transinfection and the Importance of Temperature in Dengue Epidemics*. Preliminary report.

Dengue is a mosquito-borne viral infection that is usually found in tropical and subtropical regions around the world. The cycle of dengue transmission can be broken by infecting mosquitoes with Wolbachia bacterium, which reduce the level of dengue virus in the mosquito and shorten the host mosquito's lifespan. Several studies have shown that infecting mosquitos with Wolbachia and releasing them (a process called Transinfection) can spread this bacterium to the local mosquito population and mitigate the impact of the disease. A mathematical model is developed to investigate how the strategy of using Wolbachia could reduce the spread of the Dengue virus in human populations. The model also incorporates the local temperature data, which can affect the procreation and growth of mosquitos. The model simulation results suggest that the Dengue fever outbreak can be diminished by releasing a small number of Wolbachia-carrying mosquitos at the right time. (Received September 24, 2018)