

1116-T1-1248 **Timothy D Comar*** (tcomar@ben.edu), Department of Mathematics, Benedictine University,
5700 College RD, Lisle, IL 60532. *Pulse Vaccination Models: Dynamics and Sensitivity Analysis.*

This particular talk with focus on results we have obtained with undergraduate students researchers on the dynamics of epidemic models. The models are pulse vaccination models using impulsive differential equations. A pulse vaccination strategy periodically provides a fraction of the population with vaccination against a particular disease. One of the models incorporates a time delay for the period of time required for an exposed individual to become infective. Conditions for disease free period solutions and endemic solutions are provided. We also perform sensitivity analysis of model parameters and show how these models can be used to study the spread of diseases such as malaria and polio. We also discuss some avenues for future work by considering the introduction of stochastic behavior into these models and agent based versions of some of these models. (Received September 18, 2015)