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**Necibe Tuncer\*** (ntuncer@fau.edu), **Hayriye Gulbudak**, **Vincent Cannataro** and **Maia Martcheva**. *Identifiability Issues In A Nested Model Of Immuno-Epidemiological Model: The case of Rift Valley Fever Virus.*

In this talk, I will present a mathematical model that links immunological model and epidemiological model. This model allows us to understand dynamical interplay of infectious diseases at two different scales; immunological response of the host at individual scale and the disease dynamics at population scale. Once the host is infected, it triggers the immune response which produces antigen-specific antibodies to clear the pathogen. The pathogen and antibody levels are often monitored in laboratory experiments. But how can we use the data generated in the laboratory experiments to estimate the parameters of the immunological model. Clearly, the parameters of the within-host immunological model has an effect of the epidemiological characteristics of disease such as reproduction number and prevalence. I will present the identifiability issues in parameter estimation of the immunological model. (Received January 28, 2015)