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**Adnan A Khan\*** (adnan.khan@lums.edu.pk), 149 SSE Building, Opposite Sector U, DHA, Lahore, 54792, Pakistan, and **Mudassar Imran** (mimran@asu.edu). *Modeling the transmission dynamics of Congo Virus Disease with Control Strategies.*

Congo Virus Disease (CVD) is a, highly contagious, tick borne disease with a high mortality rate. Due to this even suspected cases should be dealt with cautiously and control measures be taken with no delay. The people who are most at risk the include farmers, livestock owners, butchers, and medical staff. In this talk, we model the transmission dynamics of CVD based on a three-fold SIR model that includes three different population groups (humans, cattle and ticks). Dynamical systems analysis of the model is performed, and it is consequently the stability of the disease free steady states are determined when the basic reproduction number,  $R_0 < 1$ , it is also shown that there exists an endemic equilibrium when  $R_0 > 1$ . Sensitivity analysis is performed in order to determine the most ‘important’ parameters that are primarily responsible for the transmission of the disease. Finally, using optimal control theory, we propose control strategies, which if adopted will help eliminate the disease. (Received September 18, 2016)