

# Modeling Epidemic Spread: Multi-strain interactions and adaptive social networks

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**Abstract:** Most diseases that are endemic in nature have co-existing multiple strains. Examples are influenza, malaria, SARS and dengue fever. The first part of my talk will be on modeling and analyzing multi-strain diseases which spread through a mechanism called antibody enhancement. Although the multi-strain diseases are modeled on a single population, certain social dynamics change the nature of an epidemic when they are considered on an adaptive network. The second part of the talk will review some new and recent challenges in modeling the spread of a single strain disease on adaptive networks. The work presented is joint with Drs. Leah Shaw, Lora Billings, and Derek Cummings.