

# Colloquium

University of Texas at Arlington- Mathematics Department  
*Proudly presents*

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3:00pm  
304 Pickard Hall

“ Results and problems related to the analysis of a  
discrete epidemic network”

## Abstract

I will present the analysis of a discrete time SI network epidemic model. The network is an abstract set of nodes (representing the hosts) that can be either infected or susceptible. The model variables represent the probabilities of the network nodes to be infected. The conditions for epidemics, developing on the network, to die out (global stability of the disease-free equilibrium) guarantee the existence of an endemic equilibrium. Based on these conditions we define the epidemic threshold. The local stability of the endemic equilibrium can be proved in some cases while the global stability is an open problem.

An interesting and important question is: how does the graph topology of the network affect the epidemic threshold. I will present some results related to this problem.

*Refreshments before the talk and socializing following the talk*  
<http://www.uta.edu/math/pages/main/seminar.htm>