Applied Dynamical System Seminar

Speaker:

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Tuesday, March 28, 2017
1:00-2:00pm in HH-3017

A Periodic Disease Transmission Model with Asymptomatic Carriage and Latency Periods

Abstract: In this talk, we propose a periodic disease transmission model with two delays in incubation and asymptomatic carriage periods. We will identify the basic reproduction ratio R_0 for the model; obtain the global attractivity of the disease-free state when $R_0 < 1$. and discuss the disease persistence when $R_0 > 1$. We will also explore the coexistence and uniqueness of endemic state in the system with constants coefficients. Numerically, we provide a numerical algorithm to calculate R_0; present a case study regarding the meningococcal meningitis disease transmission and discuss the influence of carriers on R_0. This is a joint work with Dr. Yuan Yuan.