Western Science

Department of Applied Mathematics

APPLIED MATHEMATICS COLLOQUIUM

Date: Wednesday, October 1, 2014
Time: 2:30 – 3:30 p.m.
Location: Middlesex College Room 204

Modeling of Contact Tracing in Epidemic Populations by Disease Age

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Abstract:

The talk is about modeling the spread of an infectious disease in a closed community with two basic public health interventions: (i) identifying and isolating symptomatic cases, and (ii) tracing and quarantine of the contacts of identified infectives. The aim is to evaluate the efficacy of tracing and quarantine strategies which are believed to be an important aspect of controlling an outbreak of emerging or re-emerging infectious diseases. The model is applicable in both emerging epidemics that require isolation, tracing, and quarantine, such as H1N1, SARS (severe acute respiratory syndrome), and influenzas, and re-emerging epidemics that requires isolation and certain vaccination strategies, such as a smallpox bioterrorist attack. Moreover, the model can be applied as a rational basis for decision makers to guide interventions and deploy public health resources in future epidemics.