
JIANHONG WU, MITACS Center for Disease Modeling, York University

Disease outbreaks and outbreaks of disease modeling

Shortly after the 2002–03 Severe Acute Respiratory Syndrome (SARS) outbreak, a Canadian team on modeling communicable diseases was established, and an adventure of interdisciplinary research involving close interaction and collaboration between mathematical/statistical modelers, medical scientists, and public health policy makers was started.

This talk provides a brief review of the history of this team, its collective efforts and long-term goal in modeling emerging/reemerging communicable diseases of critical importance to Canada and the international community. It also presents some progress in modeling pandemic influenza and in analysis of such issues as antiviral treatment and drug resistance.

The team has been asked on various occasions to talk about what it has achieved using mathematical modeling. The team has also been asked to report the impact of its work on public health policy development, and to document the influence of its research and networking activities on the training of the next generation of modelers, and on encouraging health care people to believe in modeling. This talk not only provides partial answers to the above questions, but also raises more questions to challenge modelers.