

Dr. Babak Pourbohloul is Director of the Division of Mathematical Modeling at the University of British Columbia Centre for Disease Control (UBC CDC) and an Assistant Professor in the Department of Health Care and Epidemiology, UBC. He received his Ph.D. in theoretical physics from Laval University, Québec, Canada and conducted postdoctoral research at the *Institut national de santé publique du Québec*.

Dr. Pourbohloul's research interests center on modeling the transmission dynamics of infectious diseases and the impact of different control strategies on disease dynamics for designing optimal public health policy.

**Mathematical Modeling at the Service of Public Health:
Understanding and Controlling Disease Transmission Dynamics**

8th May (10am) at IHPC Auditorium

Infectious disease transmission within and between populations is a complex phenomenon and requires appropriate tools for analysis. Mathematical models are powerful tools that can help us understand the underlying mechanism of complex systems and have increasingly been used to qualitatively and quantitatively evaluate various control strategies to contain the spread of disease. British Columbia Centre for Disease Control (BCCDC) is at the forefront of the integration of mathematical models into public health decision-making in Canada. Prof. Babak Pourbohloul will describe various modeling projects undertaken at the BCCDC and demonstrate how the mathematical formulation of infectious disease transmission can inform and strengthen public health policy, nationally and internationally.

Contact Network Epidemiology: Understanding & Controlling Disease Outbreaks

8th May (2pm) at IHPC Auditorium

A large class of infectious diseases spread through direct person-to-person contact. The patterns of these contacts tend to be highly heterogeneous. Explicit models of the patterns of contact among individuals in a community, *contact network models*, underlie a powerful approach to predicting and controlling the spread of such infectious diseases and provide detailed and valuable insight into the fate and control of an outbreak. In this talk, Prof. Babak Pourbohloul will describe the principles of contact network epidemiology and use this methodology to evaluate the impact of different control policies for respiratory infections with various degrees of contagiousness. He will demonstrate how integrating these tools into public health decision-making would facilitate more rational strategies for managing newly emerging diseases, bioterrorism and pandemic influenza in situations where empirical data are not yet available to guide decision making.