

Mathematical models for the spread of infectious disease

William E. Fitzgibbon

**Departments of Engineering Technology and Mathematics
College of Technology and College of Natural Science and Mathematics
University of Houston (USA)**

This talk will introduce mathematical models of varying complexity which describe the spread of infectious disease within distinct populations spatially dispersed across heterogeneous habitats as well spatially and between multiple populations. Typically the modeling process produces challenging systems essentially of reaction diffusion type. Further considerations that account for the age of the infection or differentiate the population with respect to age produce weakly coupled hybrid hyperbolic parabolic system. Both mathematical theory and illustrative examples will be discussed.