

Colloquium

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Mathematical Modeling of the Spread of Epidemics

Emerging and re-emerging infectious diseases are the leading cause of morbidity and mortality across the globe. Mathematical models can help the public and the medical and scientific communities understand and predict the spread of an epidemic and evaluate the potential effectiveness of different mitigation strategies. Modeling efforts can help improve the effectiveness of public health intervention measures and minimize the population and economic impacts of an epidemic. In this talk, I will describe different mathematical and computational models used to simulate the spread of infectious diseases and show the impact of pharmaceutical and non-pharmaceutical intervention strategies on the spread of diseases including smallpox and influenza.