

The College of Arts & Sciences
Department of Mathematical Sciences
Candidate Colloquium

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Thursday, February 1, 2024

Swift Hall, Room 819

4:00 – 5:00 pm

Dynamics of COVID-19 pandemic with testing compartment

What are the long-term dynamics of the COVID-19 pandemic? How will it end? In this talk, we present an infectious disease model with a testing compartment and analyze the existence and stability of its endemic states in two functional responses. We demonstrate the existence of one endemic equilibrium without testing and one endemic equilibrium with testing and also prove their local and global stabilities for some cases. Besides, we also note that there are complex dynamics if the testing is fast. Overall, our results suggest that the pandemic may end with a testing-less endemic state through a novel mechanism called stochastic trapping.

Refreshments will be served 3:15 – 3:45 pm in the Faculty Lounge
4118 French Hall West