Franklin & Marshall College
and
Millersville University

A *Virtual* Joint Colloquium in Mathematics

Thursday, October 29th, 2020, 4:00-5:00pm EDT

Professor Yixiang Wu, Middle Tennessee State University

Spatial Epidemic Models on Transmissions of Infectious Diseases

Abstract: Mathematical models can describe the progress and predict the outcome of the spatial spread of infectious diseases. Many mathematical tools, such as ordinary and partial differential equation theory, dynamical system theory, matrix theory, network theory, numerical and computational techniques, have been adopted to investigate the spatial transmissions of diseases. These investigations in turn have enriched the development of mathematics.

In the first part of this talk, I will present some recent development on using reaction-diffusion models to study the impact of environmental heterogeneity and the mobility of individuals on the spatial spread of infectious diseases. Specifically, the analysis of the endemic equilibria, the basic reproduction number and the global dynamics of these epidemic models will be discussed. In the second part, I will talk about our recent efforts to use geographical and population data to simulate the spatial transmission of diseases.

Please contact one of the individuals below for the Zoom link to this event.

Contact:

Nicholas Baeth, F&M	nicholas.baeth@fandm.edu	(717) 358-4541
Baoling Ma, MU	Baoling.Ma@millersville.edu	(717) 871-4263
Erin Moss, MU	Erin.Moss@millersville.edu	(717) 871-5903
Iwan Praton, F&M	iwan.praton@fandm.edu	(717) 358-4238