

The College of Arts & Sciences  
Department of Mathematical Sciences

Candidate Colloquium

# Xiaoqin Guo

University of Wisconsin

Monday, December 9<sup>th</sup> 2019  
Room 608, 2925 Campus Green Drive  
4:00-5:00 pm

## *Random walks and stochastic homogenization in a balanced random environment*

Stochastic homogenization studies the effective equations or laws that characterize the large scale phenomena for systems with complicated random dynamics at microscopic levels. In this talk, we explore the relation between stochastic homogenization and a probabilistic model called random motion in a random medium. In particular we focus on dynamics on the integer lattice which is non-reversible in time and defined by a non-divergence form difference operator. We will present qualitative and quantitative results for the diffusive behavior of the random walks and the homogenization of the corresponding random difference operator.

Refreshments will be served 3:30-4 pm in Room 608, 2925 Campus Green Drive