



UNIVERSITY OF RHODE ISLAND

Department of Mathematics  
and Applied Mathematical Sciences



## Applied Mathematics and Scientific Computing Seminar

**Location:** Lippitt Hall 205

**Time:** Monday, April 21, 2025, 1:00pm  
(refreshments at 12:55 p.m.)

### Modeling the Effects of Conformity and Anticonformity on Collective Decision Making

by **Pengyu Liu**, Assistant Professor

Department of Mathematics and Applied Mathematical Sciences, URI

**Abstract:** Individual interactions drive societal and economic processes, such as the spread of infectious diseases, stock market fluctuations, and shifts in public opinion. With the development of the internet and social media, understanding how these interactions shape collective outcomes is increasingly important. A key question is how non-rationality affects collective decision-making. In this talk, we explore the roles of conformity and anticonformity by introducing a deterministic binary-choice model on social networks, where each individual has a trait of being either a conformist or an anticonformist. We demonstrate how this simple model can give rise to complex collective outcomes and examine the impact of network topology and trait distribution.