

**Professor Qi Wang**  
University of South Carolina



Thursday February 4, 2016

Refreshments:  
3:30-4:00 in Petty 120

Talk:  
4:00-5:00 in Petty 150

## Active matter and complex biological systems

### Abstract

Active matter is a very active research field in physics, materials science and engineering and life sciences. It encompasses the matter systems whose fundamental constituents can move. The source of energy drives the active matter system can be biological, chemical, electrical, photonic, etc. In this talk, I will discuss a general framework for developing models for active matter systems. This is termed the generalized Onsager principle. We will then study the basic mechanism for instability in the active matter models to understand how emergent structures form dynamically. Then, we apply a active matter model to study cellular dynamics in cytokinesis and cell migration on a solid substrate.

### Bio

Qi Wang is the College of Arts and Sciences Distinguished Professor of Mathematics at the University of South Carolina (USC). He was appointed as the thrust leader for the theory, modeling and simulation thrust at the Nanocenter at USC in 2008. He got his PhD in Mathematics from the Ohio State University in 1991. Before joining USC, he was on the faculty at IUPUI from 1991 to 2001 and at the Florida State University from 2001 to 2009. His research area is in applied and computational mathematics with emphasis on complex fluids and applications to materials science and life science. His research has been continuously funded by federal grants from AFOSR and NSF since 1992. He currently serves on editorial boards of four journals and as the thrust leader for "Insilico study of cellular aggregate fusion" in SC EPSCOR project biofabrication. He has published over 120 peer reviewed papers so far.