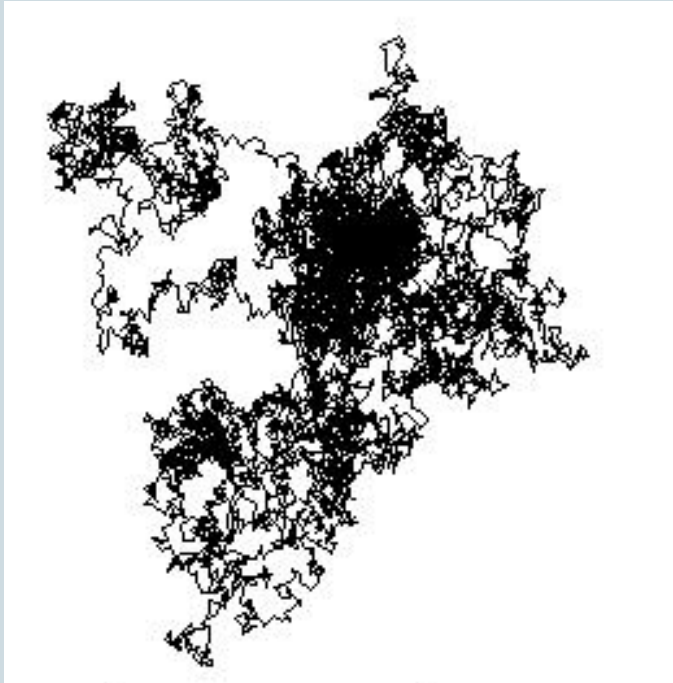


UCCS Department of Mathematics

# Math Colloquium Series

**IDDO BEN-ARI**  
**UNIVERSITY OF CONNECTICUT**



**DATE:**

MARCH 15, 2016

**TIME:**

12:30PM-1:30PM

(REFRESHMENTS AT 12:15PM)

**LOCATION:**

OSBORNE CENTER

ROOM# A327

## **Coupling for Brownian Motion with Redistribution**

**Abstract:** We consider a model of Brownian motion on a bounded interval which upon exiting the interval is being redistributed back into the interval, according to a probability measure depending on the exit point, starting afresh, repeating the above mechanism indefinitely. It is not hard to show that the process is exponentially ergodic, although characterizing the rate of convergence is non-trivial. In this talk, after providing a general overview of the probabilistic method of coupling and its applications, I'll show how to study the ergodicity for the model through coupling, how it leads to an intuitive and geometric explanation for the rates of convergence previously obtained analytically, other insights, and more questions. The talk will be accessible to general mathematical audience.