CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, April 27
2:00 – 3:00 PM
Maria Sanford, Room 101

RECURRENCE THEOREMS IN VARIOUS RANDOM WALKS

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Abstract

We'll begin with a discussion of a simple random walk on a grid, and a statement of Polya's Recurrence Theorem. We'll progress through the other main types of random walks which have been studied in the past century, discussing their recurrence properties as we go. This will culminate with a definition of the so-called basic walk which arises in the study of robotics and which behaves a bit like a cross between a self-avoiding random walk and a quasi-random process. I'll discuss what these words mean and their connection to the robotics problem, and then we'll prove an analogue of Polya's Theorem in this context. We'll end by talking about a few more things we know and a few we'd like to know.