



**Department of Mathematics**

**Colloquium**

**Behrang Forghani**

**College of Charleston**

*Probabilistic and Geometric boundaries of Groups*

**Abstract:** One of the central questions in the theory of random walks on groups asks how the long-term behavior of random walks on a group couples with its algebraic or geometric structure. In the 60s, Furstenberg introduced the Poisson boundary to describe the stochastically significant behavior of a random walk at infinity. In this talk, we will begin with an introduction to random walks on groups, construction of the Poisson boundary, and characterizations of groups according to the Poisson boundary. We will discuss methods to identify the Poisson boundary of random walks on groups, particularly, groups endowed with additional geometrical, algebraic, or combinatorial structures (e.g., free groups or, more generally, groups acting on a hyperbolic space).

**Wednesday April 3, 2024**

**2:15 – 3:15 PM**

**L01328**

**Faculty Host: Ali Pakzad**

