

CALIFORNIA STATE UNIVERSITY, LONG BEACH

THE MATHEMATICS COLLOQUIUM

presents

Dr. Lesley Ward

Harvey Mudd College

speaking on

Brownian motion, harmonic measure, and the shape of two-dimensional regions

Friday, November 5, 2004

12:00PM-1:00PM

LA5-267

Abstract: The ‘harmonic measure distribution function’ of a planar region relates the shape of the region to the behaviour of Brownian motion in the region. This function $h(r)$ specifies the probability that a Brownian particle first exits the region through that part of the boundary which lies within distance r of a fixed basepoint. Which functions $h(r)$ can arise in this way? For instance, can we construct a region whose $h(r)$ is a step function? We also look at the connections between convergence of regions and convergence of their distribution functions.