Abstract:

There are many beautiful connections between Brownian motion exiting a smoothly bounded domain and the geometry of the domain. In this talk, I will survey some of these connections, with special attention on the relationship between exit time moments and Dirichlet spectrum. The material lies at the intersection of a number of fields including Probability, PDE, Differential Geometry, and Classical Analysis.

The talk is intended for a general mathematical audience (All required technical tools will be developed during the course of the talk).