



Seminar

## K-Theory, Quadratic Forms and Number Theory

**Title:** Random groups in number theory and topology

**Speaker:** Professor Nigel Boston (UCD)

**Date:** Wed 17th September 2008 at 3:00PM

**Location:** Mathematical Sciences Seminar Room

**Abstract:** In a recent *Inventiones* paper Dunfield and Thurston compared fundamental groups of random 3-manifolds and random discrete groups. Analogously, we develop a theory comparing certain random Galois groups and random  $p$ -groups. In particular, what is the probability that  $r$  relators chosen at random from a  $g$ -generator free group present a particular group? We make sense of and answer this question for  $p$ -groups. This leads to some mysterious mass formulae, some infinite groups that arise with nonzero probability, and applications to number theory.