K-theory and geometric group theory.
Saturday, 12/01/2001

All talks on Saturday will be in the Math building (Stevenson Center 1), room 1308

9:00 - 10:00 J. Roe “Large Scale Index Theory.”
Abstract: In this talk I want to explain how consideration of elliptic operator theory on open manifolds leads one to introduce notions belonging to large scale geometry. I also want to discuss the index-theoretic rationale for the process of “$C^*$-algebra completion”, and some of the consequences of that.

10:30 - 11:30 J. Kaminker “$C^*$-algebras and fundamental groups of manifolds.”
Abstract: We will discuss
i) how $C^*$-algebras came to be used in the study of questions like the Novikov conjecture,
ii) how geometric properties of groups which have played a role in such questions reflect themselves in analytic properties of group $C^*$-algebras.

12:00 - 1:00 T. Kato “Novikov conjecture, Fredholm representation and combable groups”

1:30 - 2:45 Lunch

3:00 - 4:00 A. Olshanskii “Generalized Small Cancellations and Some Properties of Groups II”

4:30 - 5:30 H. Emerson “Noncommutative geometry and boundary actions of hyperbolic groups”

Abstract: We shall discuss some noncommutative geometric constructions applied to the cross product algebra $C(\mathbb{G}) \rtimes \Gamma$, where $\Gamma$ is a hyperbolic group and $\mathbb{G}$ is its Gromov boundary. We sketch a proof that this groupoid algebra has Poincaré Duality in $K$-theory, discuss a relationship with the Baum-Connes conjecture, and describe some work in progress concerning finite summability, dimension, and the Chern character for the ‘Fundamental Class’ of this algebra.

6:00 Dinner at the University Club