

**Nigel Higson**

speaks on:

**K-HOMOLOGY, ASSEMBLY AND RIGIDITY THEOREMS FOR  
RELATIVE ETA-INVARIANTS**

**March 22, 2008**

at

**Fields Institute, Toronto**

Bimonthly Canadian Noncommutative Geometry workshop.

**Abstract**

I shall describe a connection between K-homology theory and relative eta invariants, specifically a connection between the analytic surgery exact sequence, which is a long exact sequence into which Kasparov's assembly map fits, and rigidity theorems for relative eta invariants, such as for example the rationality of relative eta invariants on positive scalar curvature spin manifolds. A key part of the connection is the construction of a "relative trace map" on the fiber of the assembly map. The construction may be carried out either analytically or geometrically; I shall attempt to describe both approaches. This is joint work with John Roe.

The third lecture, by [John Phillips](#), is tentatively scheduled for April 5, 2008, at the Fields Institute.

This **bimonthly workshop** aims to cover new developments in Noncommutative Geometry, and each workshop features a keynote address by one of the top people in the field. The general theme for the first year is index theory. Lectures take place at the [Fields Institute](#) in Toronto, Canada.

Support for [graduate students](#) is available, please enquire, [ncgworkshop.unb.ca](http://ncgworkshop.unb.ca).

**Organizers:**

Masoud Khalkhali, Dan Kucerovsky, Bahram Rangipour

This workshop is associated with the Center for Noncommutative Geometry and Topology at the University of New Brunswick, [www.math.unb.ca/~dan/copal/Centre\\_main.htm](http://www.math.unb.ca/~dan/copal/Centre_main.htm), and with the NCG group at UWO. We thank the Fields Institute for financial support.