

IMIA Operator Algebra Seminar
University of Wollongong

Title: Purely infinite C^* -algebras arising from group actions on the Cantor set.

Speaker: Adam Sierakowski (University of Wollongong)

Time and Dates: 3:30pm Thursday, 20 September 2012

Location: Room 15.113 (Access grid room)

Abstract: Purely infinite C^* -algebras were introduced in the late '70s by J. Cuntz. In the simple case, pure infiniteness is equivalent to existence of many projections (real rank zero) together with the requirement that all projections are infinite. The special class of C^* -algebras, now called Kirchberg algebras, that are purely infinite simple separable and nuclear, are of particular interest because they are 'classifiable' (by K - or KK -theory), a result obtained by Kirchberg and Phillips in the mid 90s. Many of the naturally occurring examples of Kirchberg algebras arise from group actions. In joint work with M. Rrdam we study conditions that will ensure that a C^* -algebra arising from a group action is purely infinite. As an application of our results we show that every discrete countable group admits an action on the Cantor set such that the corresponding crossed product C^* -algebra is a Kirchberg algebra if and only if the group is non-amenable and exact. I will talk about classification of C^* -algebras and explain how to obtain a Kirchberg algebra from every discrete non-amenable exact group.