

**IMIA Operator Algebra Seminar**  
University of Wollongong

Title: The ideal structure of crossed products.

Speaker: Adam Sierakowski (University of Wollongong)

Time and Dates: 3:30pm Thursday, 13 September 2012

Location: Room 15.113 (Access grid room)

Abstract: The study of simplicity and ideal structure of crossed product  $C^*$ -algebras goes back to late '60s, when E. Effros and F. Hahn showed that a free minimal action of discrete countable amenable group on a unital abelian  $C^*$ -algebra gives a simple crossed product  $C^*$ -algebra. In this talk I will discuss conditions ensuring a one-to-one correspondence between the ideals in a reduced crossed product and the invariant ideals in the original algebra only assuming the group is discrete. As an application I will present how one can sharpen a certain result (Corollary 5.9) about étale groupoids recently proved by J. Brown, L. Clark, C. Farthing and A. Sims and, using a generalisation of the Rokhlin property, verify that the crossed product of the stabilized UHF-algebra of type  $n$ -infinite by the integers (coming from an automorphism that scales the trace by a factor  $1/n$ ) is simple. Exactness properties turns out to be crucial in these investigations.