

**IMIA Operator Algebra Seminar**  
University of Wollongong

Title: Problems related to free groups

Speaker: Michael Cowling (University of New South Wales)

Time and Date: 3:30pm Thursday, 17 October 2013

Location: Room 39C.meeting room

Abstract: In 1930, von Neumann “conjectured” that nonamenable locally compact groups contain (nonabelian) free subgroups, and in 1970 Tits proved this for groups of matrices. Complicated constructions of nonamenable groups without free subgroups were found in the 1980s, using arguments based on logic, but recently Monod found a much more explicit construction based on equivalence relations. Also in the 1970s, Powers showed that the reduced  $C^*$ -algebra of a (nonabelian) free group is simple; his argument led to a proof that many other reduced group  $C^*$ -algebras are simple. We discuss Monod’s result, and Powers’ result and its generalisations, and ask what might be said about the  $C^*$ -algebra of Monod’s group.