

IMIA Operator Algebra Seminar
University of Wollongong

Title: A new(ish) group von Neumann algebra

Speaker: Martin Wanvik (NTNU)

Time and Dates: 3:30pm, Thursday 20 Oct, 27 Oct, and 3 Nov 2011

Location: Room 15.113 (Access Grid Room)

Abstract: Consider the category W^* of W^* -algebras (i.e. C^* -algebras with a predual) and normal (σ -weakly continuous) unit-preserving $*$ -homomorphisms. On this category, we can define a functor U which takes each W^* -algebra to its unitary group with the σ -weak topology (so the codomain of U is the category of topological groups). We show, using the Freyd adjoint functor theorem, that U has a left adjoint functor, which will be the group algebra in question. We also show that it overlaps with the universal enveloping W^* -algebra of $C^*(G)$ in a number of cases (at least for discrete groups, probably also for compact groups).

The first seminar will consist of an informal introduction, and a review of the category theory that will be needed to understand what this is all about.