Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

April 13 **Amudhan Krishnaswamy-Usha**, Texas A&M University

Title: *Spectral Operators in von Neumann Algebras*

Spectral operators are operators which have an associated idempotent valued spectral measure. Dunford showed that these are precisely those operators which are similar to the sum of a normal and a quasinilpotent operator that commute. For operators in a finite von Neumann algebra, Haagerup and Schultz showed there exist certain invariant projections which behave well with respect to the spectral measure. We show that an operator is spectral if and only if it is decomposable and the angles between its Haagerup-Schultz subspaces are uniformly bounded away from zero. Using this characterization, we show that a class of operators (which include Voiculescu's circular operator) are not spectral. This is joint work with Ken Dykema.