UNH Speakers at NHOTS

1. Jon Bannon

   Title: Completely Positive Joinings of Type II_1 Factor Dynamical Systems

   Abstract: A joining of two measure-preserving dynamical systems is a (diagonally) invariant measure on the product of the underlying measurable spaces whose marginals are the original invariant measures. Over the past 30 years joining theory has become an important tool in ergodic theory, as it has been used to generate many striking counterexamples to old questions, as well as elegant proofs of classical results. In the world of von Neumann algebras, many results about the structure of type II_1 factors are visible through the lens of Connes's concept of 'correspondence'. In this talk we explore a conspicuous analogy between Joinings and equivariant correspondences, which allows reinterpretation of the use of certain B-bimodular completely positive maps in Popa's deformation/rigidity as noncommutative joinings.

2. Yanni Chen

   Title: Hardy Spaces with respect to symmetric norms

   Abstract: Let μ be normalized arc length on the unit circle $\mathbb{T}$. A *symmetric norm* on $L^{\infty}(\mathbb{T})$ is a norm α such that $\alpha(1) = 1$, $\alpha(f) = \alpha(|f|) = \alpha(f \circ \tau)$ whenever $f \in L^{\infty}(\mathbb{T})$ and $\tau : \mathbb{T} \to \mathbb{T}$ is a measure-preserving transformation. The completion $L^{\alpha}(\mathbb{T})$ of $L^{\infty}(\mathbb{T})$ has been studied extensively. We introduce and study the completion $H^{\alpha}(\mathbb{T})$ of the polynomials and we extend a number of analogues of results for the classical H^p-spaces.

3. Don Hadwin

   Title: Asymptotic Double Commutants in von Neumann Algebras and C*-algebras

   Abstract: Richard Kadison showed that not every commutative von Neumann subalgebra of a factor von Neumann algebra is equal to its relative double commutant. We prove that every commutative C*-subalgebra of a centrally prime C*-algebra $\mathcal{B}$ equals its relative approximate double commutant. If $\mathcal{B}$ is a von Neumann algebra, there is a related distance formula.

4. Mehmet Orhon

   Title: Multiplication Operators on Vector-Valued Function Spaces

   Abstract: Let E be a Banach function space on a probability measure space (Ω, Σ, μ). Let X be a Banach space and $E(X)$ be the associated Köthe-Bochner space. An operator on $E(X)$ is called a *multiplication operator* if it is given by multiplication by a function in $L^{\infty}(\mu)$. In the main

result of the paper we show that an operator T on $E(X)$ is a multiplication operator if and only if T commutes with $L^{\infty}(\mu)$ and leaves invariant the cyclic subspaces generated by the constant vector-valued functions in $E(X)$. As a corollary we show that this is equivalent to T satisfying a functional equation considered by Calabuig, Rodriguez, Sánchez-Pérez.