Lauren Sager* (lbq32@wildcats.unh.edu), Kingsbury Hall, 33 Academic Way, Durham, NH 03824. Invariant subspaces for triangular algebras in Schatten $p$-classes.

In this talk, we seek to characterize subspaces of the Schatten $p$-classes on an infinite dimensional Hilbert space $\mathcal{H}$, which are invariant under lower triangular algebras. In doing so, we prove a Beurling-Blecher-Labuschagne theorem for $H^\infty$-invariant subspaces of $L^p(M, \tau)$ where $M$ is a von Neumann algebra with semifinite, faithful, normal tracial weight $\tau$, $0 < p \leq \infty$, and $H^\infty$ is a non-commutative Hardy space, similar to those defined by Arveson. As an application of the main result, we completely characterize all $H^\infty$-invariant subspaces of $L^p(M \rtimes_\alpha \mathbb{Z}, \tau)$ where $M \rtimes_\alpha \mathbb{Z}$ is the non-self-adjoint crossed product of a von Neumann algebra $M$ by an action $\alpha$ on $M$. Then, we are able to completely characterize all lower triangular subalgebra-invariant subspaces of the Schatten $p$-class for $0 < p \leq \infty$. Our result answered a question asked implicitly by McAsey, Muhly and Saito in 1979. (Received September 19, 2016)