Drexel Mathematics Colloquium

April 16, 2025

**3-4 PM, Korman 245**

**Speaker**: Hugo Woerdeman (Drexel University)

**Title**: Optimal interpolation in Hardy and Bergman spaces: a reproducing kernel Banach space approach

**Abstract**: After a review of the reproducing kernel Banach space framework and semi-inner products, we apply the techniques to the setting of Hardy spaces $H^p$ and Bergman spaces $A^p$, $1 < p < \infty$, on the unit ball in $\mathbb{C}^n$, as well as the Hardy space on the polydisk and half-space. In particular, we show how the framework leads to a procedure to find a minimal norm element $f$ satisfying interpolation conditions $f(z_j) = w_j$, $j = 1, \ldots, n$. We also explain the techniques in the setting of $\ell^p$ spaces, where the norm is defined via a change of variables, and provide numerical examples. This talk is based on joint work with Gilbert J. Groenewald and Sanne ter Horst.