1086-46-1099   **Kelly Bickel*** (`kbickel@math.wustl.edu`). *Inner Functions on the Bidisk and Associated Hilbert Spaces.*

It is well known that operator-valued inner functions on the bidisk admit decompositions in terms of pairs of reproducing kernels, called Agler Decompositions. In this talk, we will review known canonical decompositions and use them to characterize general Agler decompositions. We will discuss how certain properties of an inner function are reflected in the structure of the Hilbert function spaces associated to its Agler Decompositions. Particular attention will be paid to matrix-valued rational inner functions and the differences between the scalar and matrix-valued cases. This is joint work with Greg Knese. (Received September 25, 2012)