

# COLLOQUIUM

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## Birkhoff-James $\varepsilon$ -Orthogonality Sets for Matrices and Matrix Polynomials

The logo for Mathematics and Statistics features a large orange circle in the center. Inside the circle, the words "Mathematics" and "Statistics" are stacked vertically in a bold, black, sans-serif font, with "and" in a smaller font size between them. The circle is set against a background of four blue squares, one in each corner, which together form a larger square shape.

Date: Friday, Feb 27, 2015

Time: 3:30 - 4:30 PM

Room: RIC 209

**Abstract:** Stampfli and Williams in 1968 observed that the numerical range of a square matrix  $A \in M_n(\mathbb{C})$  can be written as an infinite intersection of discs.

We observe the connection that this definition has with the concept of the Birkhoff-James Orthogonality in a normed space and we use it to expand the idea of the numerical range to the case of rectangular matrices and rectangular matrix polynomials by defining the Birkhoff-James  $\varepsilon$ -orthogonality sets .