

**Jeff Hogan, UA**

**Title:** A Hitchhiker's Guide to Clifford Analysis and Special Functions

**Abstract:** In this talk we attempt to synthesize recent progress made in the mathematical and electrical engineering communities on topics in Clifford analysis and the processing of color images (for example), in particular the construction and application of Clifford-Fourier transforms designed to treat vector-valued signals. Emphasis will be placed on the two-dimensional setting where the underlying Clifford algebra is the familiar set of quaternions. We'll conclude with some results and problems in the construction of discrete wavelet bases for color images, and the difficulties encountered in constructing Fourier kernels in dimensions 3 and higher.