



**PURDUE UNIVERSITY**

**Special Colloquium**

Speaker: Dr. Anders Hansen, University of Cambridge, Homerton College  
Title: "Generalized Sampling and Infinite-Dimensional Compressed Sensing"  
Date: Thursday, December 1, 2011  
Time: 4:30 P.M.  
Place: REC 114

**Abstract**

I will discuss a generalization of the Shannon Sampling Theorem that allows for reconstruction of signals in arbitrary bases. Not only can one reconstruct in arbitrary bases, but this can also be done in a completely stable way. When extra information is available, such as sparsity or compressibility of the signal in a particular bases, one may reduce the number of samples dramatically. This is done via Compressed Sensing techniques, however, the usual finite-dimensional framework is not sufficient. To overcome this obstacle I'll introduce the concept of Infinite-Dimensional Compressed Sensing.