

Colloquium

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**Friday, June 29, 2012
1:00p.m., HH-3017**

Compressed sensing and hash families

Abstract:

Compressed sensing is a recently developed paradigm for signal sampling which takes advantage of the sparseness or compressibility of many naturally occurring signals. In discrete compressed sensing, the signal takes the form of a vector of real-valued components and the sampling process can be described as multiplication of this vector by a matrix, called the sensing matrix. The construction of "good" sensing matrices is a central theme in compressed sensing research.

In this talk I will give a quick introduction to compressed sensing and discuss how hash families (a class of combinatorial arrays) can be used to construct good sensing matrices via a technique called column replacement.

This is joint work with Charles Colbourn, Christopher McLean and Violet Syrotiuk.