

# Characterizing representable matroids

*Date* Tuesday, September, 10

*Time* 3 pm

*Location* 303 Mudd

*Abstract:* Matroids abstract the notions of linear/geometric/algebraic dependence. More specifically, a matroid consists of a finite collection of points, and a distinguished family of dependent subsets. If we take a finite collection of vectors from a vector space, and distinguish the linearly dependent subsets, then the result is a matroid, and we say that such a matroid is representable. The original motivating problem in matroid theory involves deciding which matroids are representable and which are not. A large fraction of the research in the area has been driven by this problem.

This talk will be an introduction to matroid theory, and a survey of recent developments in the characterization of representable matroids. The focus will be on excluded-minor characterizations and formal languages. No knowledge of matroids will be assumed.