

The Oliver Club

www.math.cornell.edu/~oliver/

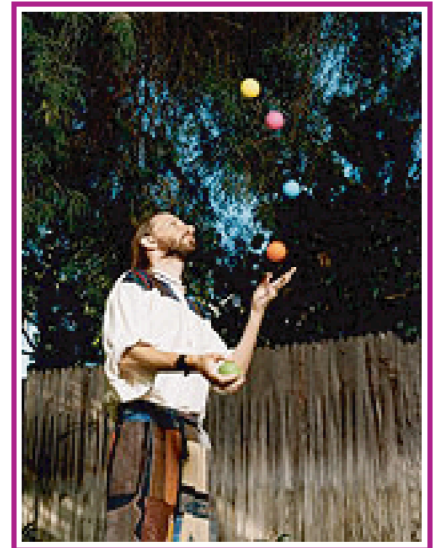
Allen Knutson, Cornell University

Juggling Patterns, Matroids, Totally Nonnegative Matrices, and the Affine Flag Manifold

The Grassmannian of k -planes in n -space has two famous decompositions. The nice one (due to Schubert) is a cell decomposition, with strata indexed by partitions. The gruesome one (due to Gel'fand and Serganova) has strata indexed by representable matroids (which is basically a definition of the latter), and the strata have arbitrary singularities.

I'll discuss an intermediate stratification, whose strata are indexed by juggling patterns. This stratification arises naturally in Poisson geometry, totally nonnegative real geometry, and characteristic p geometry! Since juggling patterns are a subset of the affine Weyl group, this suggests a connection to the affine flag manifold, which I will explain if time permits.

This is joint work with Thomas Lam and David Speyer.



Thursday, January 22, 2009
at 4:25 PM in 251 Malott Hall

Refreshments will be served at 3:55 PM in the Mathematics Department lounge (532 Malott Hall).