1030-05-220 **Laura Anderson*** (laura@math.binghamton.edu), Department of Mathematical Sciences, Binghamton University, Binghamton, NY 13902. *Higher-order non-Euclidean oriented matroid programs and triangulations.*

Triangulations of oriented matroids are simplicial complexes analogous to piecewise linear triangulations of point configurations. A longstanding conjecture is that all oriented matroid triangulations are piecewise linear balls or spheres. This conjecture was proved for Euclidean oriented matroids by the author in 1994.

This talk will introduce a topological generalization of the Euclidean property for oriented matroid programs. Loosely put, where a Euclidean oriented matroid program is one with no "bad circles" in its topological representation, a *k-Euclidean oriented matroid program* is one with no "bad k-dimensional manifolds". The abovementioned conjecture on triangulations of oriented matroids of rank k is equivalent to the conjecture that certain relatively simple oriented matroid programs are $(k-1)$-Euclidean. (Received August 03, 2007)