1035-06-72 **Taylor Dupuy*** (dupuy@math.unm.edu), Department of Mathematics and Statistics, MSC03 2150, 1 University of New Mexico, Albuquerque, NM 87131-0001. *Characterizing "Planar" Abstract Simplicial Complexes by Excluded Minors (Generalizing Kuratowski's Theorem to Higher Dimensions).*

Consider the following post on sci.math:

> Newsgroups: sci.math.research Subject: Higher-Dimensional Version of Graph Planarity Criterion??? Date: 18 Sep 1996 18:05:03 GMT According to Kuratowski, a finite graph (nodes and edges) can be topologically embedded in the plane if and only if it does not contain either of two "forbidden" subgraphs (the complete graph on 5 vertices, and the water-gas- electricity graph). Now instead suppose we have a simplicial complex K that is the union of 2-simplices. Does there exist a similar theorem giving conditions for when $|K|$ can be topologically embedded in R3??? In generality, let K be a simplicial complex that is the union of p-simplices. Are there criteria for when $|K|$ can be topologically embedded in R^n ??? Any references to the literature would be appreciated. –Dan Asimov

In this talk we will generalize graph definitions, construct n-complexes which are not embeddable in $\mathbb{R}^n$ for each n, give a *weak* form Kuratowski Theorem for higher dimensions and discuss the Robertson-Seymour theorem in general. We also have neat pictures. (Received July 12, 2007)