Carlos M. Nicolas* (cmnicola@uncg.edu). Minimum-size convex decompositions in d dimensions.

For a set $V$ of points in general position in the $d$-dimensional Euclidean space, a convex decomposition of $V$ is a set of polytopes with disjoint interiors such that their union is the convex hull of $V$ and the union of their vertex-sets is $V$. Let $G(V)$ be the minimum number of polytopes in a convex decomposition of $V$ and let $g(n)$ be the maximum value of $G(V)$ among all sets $V$ with $n$ elements in general position. The problem of finding lower and upper bounds for $g(n)$ has been considered only for the plane ($d = 2$). In this talk I will present a construction that yields the first non-trivial lower bound for $g(n)$ in $d$ dimensions for any $d > 1$. (Received September 20, 2011)