Geometry Seminar
September 21, 2004, Tuesday, 6:00 p.m.
Room 613, Courant Institute
251 Mercer Street, New York

# Convex hull of random hyperplanes in $R^3$

Bill Steiger
Rutgers University
New Brunswick

**Abstract**

Let $\pi_1, \ldots, \pi_n$ be hyperplanes in general position in $R^3$, $V = \{\pi_i \cap \pi_j \cap \pi_k, 1 \leq i < j < k \leq n\}$ the set of vertices, and $N = |\text{conv}(V)|$, the number of extreme points of the convex hull of $V$. We show that if the $\pi_i$ are chosen "randomly", there is a constant $c > 0$ (independent of $n$) so that $E(N) < c$. The prospects for $d > 3$ will be discussed.

For further information contact {pach,pollack}@cims.nyu.edu, or visit our website: http://www.math.nyu.edu/seminars/geometry_seminar.html