Geometry Seminar
Tuesday, September 29, 2009
Room 202 WWH at 6:00 P.M.

Around the Hirsch Conjecture

Gil Kalai
Hebrew University of Jerusalem and Yale University

Our starting point is
The Hirsch conjecture:

The graph of a d-polytope with n facets has diameter at most $n - d$.

A weaker conjecture which is also open is:
Polynomial Diameter Conjecture:

Let G be the graph of a d-polytope with n facets. Then the diameter of G is
bounded above by a polynomial of d and n.

In the lecture I will discuss several results and problems around the Hirsch conjecture, and
related questions in the areas of linear programming, convex polytopes, and combinatorics.
Will an open many-participants discussion/collaboration (known as "polymath") be help-
ful in approaching this problem? (Or for math problems in general?)
For a list of related problems and a recent internet discussion see: `http://gilkalai.`
`wordpress.com/2009/08/09/the-polynomial-hirsch-conjecture-discussion-thread/`

For more information please visit the seminar website at:
`http://www.math.nyu.edu/seminars/geometry_seminar.html`.