COLLOQUIUM
UNIVERSITY OF PITTSBURGH
FRIDAY, SEPTEMBER 20, 2013

704 THACKERAY HALL

3:30 P.M.

ASKOLD KHOVANSKII

UNIVERSITY OF TORONTO

UNIVERSAL GROBNER BASIS & TORIC GEOMETRY

ABSTRACT: In the ring of polynomials in n variables over a field, every ideal has a special set of generators called a "Grobner basis". Grobner bases play a fundamental role in computational algebra and algebraic geometry. They depend not only on the ideal but also on a choice of a "Grobner ordering" (e.g. an ordering of the n variables). According to the Universal Grobner Basis Theorem the following statement holds:

In any ideal there is a finite subset containing a Grobner basis with respect to any Grobner ordering.

I will discuss generalizations of this known theorem and applications to toric geometry and to tropical geometry. The talk is accessible to general audience without any previous knowledge of Grobner's basis theory or any other special topic in algebra.

**Refreshments served at 3:00 p.m.
in the Math Dept. COMMON ROOM, Thackeray 705**