SUSAN COOPER, University of Manitoba
Resolutions & Powers of Ideals

Diana Taylor established a technique to construct a free resolution of an ideal I generated by s monomials using the simplicial chain maps of a simplex on s vertices. Work of Bayer, Peeva and Sturmfels later extended Taylor's work to show that as long as such a simplicial complex satisfies certain homological conditions, it can support a free resolution of I. The idea of using the structure of I to further find data about the Betti numbers of powers of I becomes quite delicate quickly. In this talk we consider a square-free monomial ideal I and describe a complex labeled with the generators of I^r which supports a free resolution of I^r.