1018-05-139   **Yongwu Rong*** (`yrong@nsf.gov`), Division of Mathematical Sciences, National Science
Foundation, 4201 Wilson Blvd. Room 1025, Arlington, VA 22230. *Homological Algebra Methods in
Graph Theory.*

This work is motivated by recent developments in low dimensional topology. In 1999, M. Khovanov introduced a graded homology theory for knots which yields the Jones polynomial when taking graded Euler characteristic. This theory turns out to be surprisingly strong and has sparked a great deal of interests in topology. In this talk, we will discuss a number of analogous theories for graphs which yield the chromatic polynomial (with Laure Helme-Guizon), or the Tutte polynomial (with E. Fanny Jasso-Hernandez), or the Bollobas-Riordan polynomial. (Received March 03, 2006)