1062-13-95 **Gregory G Smith*** (ggsmith@mast.queensu.ca), Department of Mathematics & Statistics, Queen's University, Kingston, Ontario K7L 3N6, Canada, and **Mats Boij**, Department of Mathematics, Royal Institute of Technology (KTH), 100 44 Stockholm, Sweden. *Cones of Hilbert Functions.*

A well-known theorem of F.S. Macaulay characterizes the numerical functions that occur as the Hilbert function of a homogeneous $\Bbbk$-algebra. In this talk, we'll examine an alternative description for the collection of Hilbert functions. More precisely, we will describe the facets and extremal rays for the rational polyhedral cone generated by appropriate collections of Hilbert functions of modules over a standard graded polynomial ring. After contrasting this with Macaulay's result, we will also look at potential applications. (Received July 29, 2010)