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**Lauren Keough** and **Jamie Radcliffe\*** (aradcliffe1@math.unl.edu), Lincoln, NE 68502. *The maximum number of  $j$ -independent sets in an  $r$ -graph with given number of edges.*

There has been a variety of recent work on extremal problems for the enumeration of special subsets of graphs, such as independent sets, perfect matchings, etc. The Kruskal-Katona theorem immediately answers the question of which graph on  $n$  vertices having  $m$  edges has the most independent sets (indeed it answers the question for each size of independent set separately). I will discuss recent work with Lauren Keough on the corresponding problem for  $r$ -uniform hypergraphs. In this context there are various possible notions of independent set: we say that  $I$  is a  $j$ -independent set of  $G$  if no edge of  $G$  meets  $I$  in as many as  $j$  vertices. For all values of the parameters we determine the extremal graph. (Received July 26, 2014)