1136-18-439 **Peter J. Webb*** (webb@math.umn.edu), School of Mathematics, University of Minnesota, Minneapolis, MN 55057. *The Burnside ring of a finite category.* Preliminary report.

In the context of representation theory and cohomology, many things that can be done for groups can also be done for categories. There is a trivial representation, a tensor product, a notion of cohomology with interpretations of the low dimensional groups, including extensions of categories and the Schur multiplier. I will describe competing notions for the Burnside ring of a finite category, indicating why some should be preferred over others. An important criterion for a good definition of the Burnside ring is that it should be projective as a biset functor, in a theory of bisets for categories that extends the usual notion for groups. It should give a ring that seems to be reasonable in terms of our intuition of what the Burnside ring might be. The top candidates for the Burnside ring have their structure described to some extent by an extension of Burnside's marks homomorphism. (Received January 21, 2018)