



**Speaker:** Ben Elias  
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Wednesday, February 25, 2015  
4:00 PM  
231 Hayes-Healy Hall

**Title:** Introduction to categorical representation theory

**Abstract:**

Decategorification is a simple process: take a category (e.g. like chain complexes, or modules over a ring), and look only at the most skeletal data (e.g. the euler characteristic, the Grothendieck group). Categorification, on the other hand, is a glorious leap of insight: it is the realization that some object you love (e.g. a representation of  $sl_2$ , or of the symmetric group) is secretly the decategorification of some very interesting category, which we call its categorification. It stands to reason that you should love this categorification even more, because it has even more structure. In the search for categorifications of various objects in representation theory, many beautiful geometric and algebraic constructions have been discovered, which are worth studying in their own right. We introduce these ideas with some concrete examples.