

One of the simplest examples of categorification is the categorification of the Hopf algebra of symmetric functions (in infinitely many variables) by the symmetric groups. We will discuss this key example. As time permits we will also talk about Khovanov-Lauda-Rouquier algebras from Aaron Lauda and Monica Vazirani's talks and the odd symmetric functions, which previews Aaron Lauda's second talk from a more combinatorial perspective. Here are some suggested reading for participants:

symmetric functions as a Hopf algebra:

* Geissinger, "Hopf algebras of symmetric functions and class functions," in Lecture Notes in Mathematics 579, *Combinatoire et Représentation du Groupe Symétrique*

* Stanley, *Enumerative Combinatorics vol. 2*, Section 7.18

KLR algebras:

* Khovanov and Lauda, "A diagrammatic approach to categorification of quantum groups I," *Representation Theory* 13 (2009), 309-347, arXiv:math.QA/0803.4121

odd symmetric functions:

* Ellis and Khovanov, "The Hopf algebra of odd symmetric functions," arxiv:math.QA/1107.5610

* Ellis, Khovanov, and Lauda, "The odd nilHecke algebra and its diagrammatics," arxiv:math.QA/1111.1320