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**Aaron D Lauda\*** ([lauda@math.usc.edu](mailto:lauda@math.usc.edu)), Department of Mathematics, University of Southern California, 3620 S. Vermont Ave, KAP 108, Los Angeles, CA 90089-2532. *Odd structures arising from categorified quantum groups.*

Khovanov homology is a categorification of the Jones polynomial that paved the way for other categorifications of quantum link invariants. The theory of categorified quantum groups provides a representation theoretic explanation of these homological link invariants via the work of Webster and others. Surprisingly, the categorification of the Jones polynomial is not unique. Ozsvath, Rasmussen, and Szabo introduced an "odd" analog of Khovanov homology that also categorifies the Jones polynomial, and the even and odd categorification are not equivalent. In this talk I will explain joint work with Alexander Ellis, Mikhail Khovanov, and Heather Russell that aims to develop odd analogs of categorified quantum groups to give a representation theoretic explanation of odd Khovanov homology. These odd categorifications lead to surprising new "odd" structures in geometric representation theory including odd analogs of the cohomology of the Grassmannian and Springer varieties. (Received August 22, 2012)