1095-57-41 **Louis H. Kauffman*** (kauffman@uic.edu), 5530 South Shore Drive, Apt. 7C, Chicago, IL 60637-1946. *Elements of Khovanov Homology.*

This is a talk about the basics of Khovanov homology. We show how the Frobenius algebra related to this homology arises naturally from starting with the Bar-Natan viewpoint of a chain homotopy cobordism category. We look at the structure of the homology theory in relation to higher categories by initiating an arrow algebra that allows $(a \longrightarrow b)^n$ to unfold into the n-cube category, but also into various higher categories depending upon the interpretations of the arrows. This leads to speculations about the physical meaning of Khovanov homology in terms of quantum statistical mechanics. (Received August 22, 2013)