Lecture Title: Cherednik algebras and bialgebra flag orders

Abstract
Rouquier has emphasized the analogy between enveloping algebras and spherical subalgebras of rational Cherednik algebras. We point out that recent work by Webster about Gelfand-Tsetlin theory makes this analogy more precise: There is an algebra (a "principal flag order") associated to the general linear Lie algebra, whose "spherical subalgebra" is U(gl_n). Furthermore, we remark that the Dunkl-Opdam differential-reflection representation of the rational Cherednik algebra shows it is a "differential analogue" of a principal flag order. Motivated by these facts we introduce a new object: bialgebra flag orders (and their spherical subalgebras), which unifies type A enveloping algebras, finite W-algebras, Coulomb branches etc., with Cherednik algebras. As a consequence, we see can more clearly see how ideas can be translated from one side to the other.