1088-14-62 **Eugene Gorsky*** (egorsky@math.sunysb.edu), Department of Mathematics, Stony Brook University, 100 Nicolls Road, Stony Brook, NY 11794. *Cherednik algebras, Hilbert schemes and knot invariants.*

The work of I. Gordon and T. Stafford highlighted connections between the representation theory of rational Cherednik algebras and the geometry of the Hilbert schemes of points on $\mathbb{C}^2$. In particular, I. Gordon related certain finite-dimensional representations of these algebras to the spaces of diagonal coinvariants defined by A. Garsia and M. Haiman, and to the spaces of sections of certain sheaves on the Hilbert scheme.

I will describe a conjectural generalization of these results, matching other finite-dimensional representations of rational Cherednik algebras with sheaves on the Hilbert scheme recently constructed by A. Negut. The characters of these representations turn out to be related to certain invariants of torus knots. I will also explain connections to the recent work of M. Aganagic, I. Cherednik and S. Shakirov on refined knot invariants. (Received January 31, 2013)