April 22: Roman Bezrukavnikov, *Canonical bases and coherent sheaves.*

The primary application of canonical bases in a Grothendieck group of representations is to computation of characters of (say) irreducible representations; however, it is not their only application. I will review construction and properties of canonical bases in Grothendieck groups of coherent sheaves on the Springer resolution and related spaces and speculate on possible generalization to a new setting involving the fixed group of an involution. The toolbox includes linear Koszul duality of Mirkovic-Riche and a version of Soergel bimodules theory.