March 14: Ivan Cherednik (UNC Chapel Hill), “Toward Harmonic Analysis on DAHA I.” FOLLOWED BY DINNER.

There are three classical directions:
(1) the unitary dual (irreducible unitary representations),
(2) Fourier transforms (positivity, inverse transforms),
(3) decomposition of the standard unitary representations.

In the DAHA theory, (2, 3) are different from those in the harmonic analysis on symmetric spaces and affine Hecke algebras. DAHA Fourier transform is defined for a given (irreducible) representation. Recent developments indicate that (3) changes to:

(3’) finding integral formulas for the canonical traces.

We will mainly discuss the case of $A_1$. The rational case will be considered, that provides a direct connection with the classical harmonic analysis. A relation to (3) in the AHA theory (Lusztig, Heckman-Opdam and others) will be outlined.