May 7, 2003: Oleg Chalykh (Loughborough University), "Quasi-invariants of Weyl groups and an elementary proof of Macdonald's conjectures."

I will introduce the rings of quasi-invariants for a Weyl group W, which interpolate between all polynomials and the W-invariants. These rings have an intimate connection with the difference operators by Macdonald. I will explain how this leads to a simple proof of several properties of Macdonald polynomials, originally proved by I. Cherednik with the help of the double affine Hecke algebras.