Title: D-modules, Bernstein-Sato polynomials and F-invariants of direct summands

Abstract: The aim of this talk is to study structural properties of D-modules over a direct summand of a polynomial ring or a formal power series ring with coefficients over a field. We prove that localizations and local cohomology modules have finite length as a D-module and we show the existence of a Bernstein-Sato polynomial in this non-regular framework. Time permitting, we will also discuss some results on invariants of singularities in positive characteristic for this family of rings.

Joint work with Craig Huneke and Luis Núñez-Betancourt