A Mixed Discontinuous Galerkin, Convex Splitting Scheme for the Cahn-Hilliard Equation

I will define and analyze a mixed DG scheme for the Cahn-Hilliard equation, which is a diffuse interface model for binary phase separation. The talk will cover theoretical energy stability and convergence results and also the practical, efficient solution of the algebraic equations via an adaptive nonlinear multigrid method. This is joint work with A. Aristotelous (SAMSI) and O. Karakashian (UTK).