Mathematics Department Colloquium

Speaker: Dr. Andreas C. Aristotelous, Department of Mathematics, West Chester University

Title: Numerical Solution of Diffuse Interface Models

Date: Tuesday, December 3, 2019

Place: James Hall 3114

Abstract: Generalized Cahn-Hilliard type equations inspired by modeling tumor growth, biofilms, phase separation and other complicated processes will be introduced and numerically solved. Numerical schemes will be developed utilizing Discontinuous Galerkin Finite Element Methods and convex-concave splittings for the spatial and time discretization respectively. For the presented schemes: solvability, energy stability, convergence and error estimates will be established where possible. Simulation results will be provided.

Current and future directions will be discussed.