



# Differential Equations and Applied Math Seminar

Dr. Chunmei Wang, Texas State University

11am-12pm April 22nd, 2018

333 Derrick Hall

**Title:** Primal-Dual Weak Galerkin Finite Element Methods for PDEs

**Abstract:** In this talk, the speaker will introduce the basic ideas and a general framework for weak Galerkin (WG) methods by using the second order elliptic equation as a model problem. The speaker will then discuss a recent development of WG, known as “Primal-Dual Weak Galerkin (PD-WG)”. The primal-dual weak Galerkin methods will be applied to several challenging problems for which existing methods have difficulty in applying; these problems include the second order elliptic equations in nondivergence form, Fokker-Planck equation, first order convection equations, and elliptic Cauchy problems. Finally, the speaker will introduce an abstract framework for the PD-WG method and discuss its great potential in other scientific applications.

Interested faculty and graduate students are encouraged to attend.