



Baylor University

Department of Mathematics
Colloquium

Professor Bruce A. Wade

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University of Wisconsin-Milwaukee

■ **Topic:** Exponential Time Differencing (ETD) Methods for Reaction-Diffusion Systems

■ **Date & Time:** Thursday, March 3 @ 3:30 PM

■ **Place:** Room 207 Sid Richardson Building

■ **Refreshments:** 3:00 PM in Room 318 Sid Richardson

■ **Abstract:** Exponential Time Differencing (ETD) schemes have become popular in the past decade because they are highly efficient methods to solve nonlinear reaction-diffusion equations. We will give an overview of ETD schemes and then proceed to describe in detail several specific high order versions that prove to be very useful. Some interesting empirical results will be presented for a variety of examples, including chemotaxis in biology and exotic options with nonlinear transaction costs.