TEXAS STATE UNIVERSITY

The rising STAR *of Texas*

Differential Equations and Applied Math Seminar

Dr. Ray Treinen, Texas State University

11am-12pm September 6th, 2019

336 Derrick Hall

Title: Spectral Methods I

Abstract: We will look at Spectral and Pseudospectral Methods for numerically computing solutions of certain problems. The primary problems will be the solution to some differential equations, and in particular partial differential equations. Other problems may be eigenvalue problems, especially as they apply to operator theory. Our primary source material is Trefethen's *Spectral Methods in Matlab*.

We begin this series of lectures by covering clustered grids and polynomial interpolation using those grids. We will then look at Chebyshev differentiation matricies.

Interested faculty and graduate students are encouraged to attend.