



# Differential Equations and Applied Math Seminar

Dr. Brian Simanek, Baylor University

12-1pm February 18th, 2022

330 DH and Zoom

**Title:** Blaschke Products, Numerical Ranges, and the Zeros of Orthogonal Polynomials

**Abstract:** Our main object of interest will be the location of zeros of orthogonal polynomials on the unit circle. After recalling some fundamental results, we will discuss more recent developments that relate these zeros to Blaschke products, numerical ranges of matrices, algebraic curves, and quadrature measures. Special attention will be paid to the relationship between paraorthogonal polynomials on the unit circle and Poncelet's Theorem. Some open problems will be mentioned along the way. This is based on joint work with Markus Hunziker, Andrei Martinez-Finkelshtein, Taylor Poe, and Barry Simon.

Interested faculty, graduate and undergraduate students are encouraged to attend.