



# Differential Equations and Applied Math Seminar

Dr. Nestor Guillen, Texas State University

11am-12pm February 12th, 2021

Zoom

**Title:** Interface problems and nonlocal heat equations, pt. II

**Abstract:** In this talk I will discuss free boundary problems driven by what is known as a Darcy flow. A typical circumstance is that of two immiscible fluids separated by a smooth interface, the velocity in each phase satisfying what is known as Darcy's law. Many important physical models, such as the Hele-Shaw flow, fall in this category. I will explain how the dynamics in such problems are equivalent to a nonlocal heat equation, and explain the implications of this fact.

Interested faculty and graduate students are encouraged to attend.