



# Differential Equations and Applied Math Seminar

Dr. Ray Treinen, Texas State University

11am-12pm February 7th, 2020

336 Derrick Hall

**Title:** Granular Sessile Drops

**Abstract:** We consider one or more volumes of a liquid or semi-molten material sitting on a substrate, while the vapor above is assumed to have the same medium in suspension. There may be both evaporation and condensation to move mass from one cell to another. We explore possible equilibrium states of such configurations. Our examples include a single sessile drop (or cell) on the plate, connected clusters of cells of the material on the plate, as well as a periodic configuration of connected cells on the plate. The shape of the configurations will depend on the type of energy that we take into consideration, and in settings with a vertical gravitational potential energy the clusters are shown to exhibit a preferred granular scale. The majority of our results are in a lower dimensional setting, however, some results will be presented in 3-D.

Interested faculty and graduate students are encouraged to attend.