1106-VG-1324 **Andrew S. Brandon*** (asbrando@math.umd.edu) and **Ramagopal Ananth**. *Modeling Local Drainage within an Emulsion using the Arbitrary Lagrangian Eulerian Method.*

Liquid drainage in emulsions and foams is a multi-scale, multi-dimensional phenomena that is tied directly to how an emulsion or a foam behaves. For example, the amount of liquid within an aqueous fire fighting foam determines how effective it is at extinguishing a fire and whether or not the foam will behave as a non-Newtonian fluid. Liquid drainage is driven by gravity and is governed by the liquids' densities and viscosities. There are numerous global, one dimensional, single phase models that can approximate liquid drainage but there are few multi-dimensional models that can be used to study local phenomena. In this presentation, I will discuss a two dimensional, Arbitrary Lagrangian Eulerian (ALE) model that is being used to study local liquid drainage. This discussion will center around the model assumptions, the novel aspects of the algorithm, and recent results. (Received September 12, 2014)