1125-VH-2662   **Anastasia B Wilson*** (`anawilson@augusta.edu`). *Modeling Protein Adsorption in Multimodal Membranes.*

The emergence of biopharmaceuticals, and particularly therapeutic proteins, as a leading way to manage chronic diseases in humans has created a need for technologies that deliver purified products efficiently and quickly. Towards this end, there has been a significant amount of research on development of porous membranes used in chromatographic bioseparations. In this presentation, we focus on modeling high-capacity multimodal membranes developed by Husson and colleagues in the Department of Chemical and Biomolecular Engineering at Clemson University.

We will present results from numerical simulations using the advection-diffusion-reaction equation to model these membranes. We will focus specifically on different models for protein adsorption incorporating both instantaneous and non-instantaneous adsorption. We will also present a brief analysis of the breakthrough curves obtained from the numerical simulations and a comparison to experimental data. (Received September 20, 2016)