

### **381d Separation Media Derived from Whey Protein Isolate**

*Jiunn Teo and Robert R. Beitle*

The ability of protein molecules to aggregate and form gels of different morphologies has permitted us to develop a novel class of biobased separation materials created principally from whey. Both membranes and adsorbent materials derived from whey protein isolate (WPI) have been developed in our lab and tested in various applications. Separation materials were prepared via a heat induced gelation, with aggregate size, morphology, and separation characteristics tuned by changing casting conditions (e.g. pH, salt concentration, modifier concentration). During this presentation, we will (i) discuss the theory and methods used to prepare WPI-based separation media, (ii) present results demonstrating that ultrafiltration membranes can be prepared, and (iii) show that particulate materials made of WPI can serve as cation exchange materials.