1108-35-343 **Gurgen Hayrapetyan***, hayrapet@ohio.edu, and **Keith Promislow**. *Stability and evolution of bilayer interfaces in amphiphilic systems.*

Functionalized energies, such as the Functionalized Cahn-Hilliard, model phase separation in amphiphilic systems, in which interface production is energetically favorable, but is limited by competition for surfactant phase, which wets the interface. This is in contrast to classical phase-separating energies, such as the Cahn-Hilliard, in which interfacial area is energetically penalized. Gradient flows of the Functionalized Cahn-Hilliard free energy produce network morphologies which have significant applications to biomembranes, as well as to membrane separators in energy conversion devices such as fuel cells and Lithium ion batteries. We discuss the stability and evolution of bilayer interfaces, including the onset of pearling bifurcations which lead to development of pore dominated network morphologies. (Received January 18, 2015)