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**Melissa R. Adkins\*** ([swager@math.colostate.edu](mailto:swager@math.colostate.edu)) and **Yongcheng Zhou**. *Modeling Local Pattern Formation on Membrane Surfaces using Non-local Interactions*. Preliminary report.

The cell membrane is of utmost importance in the transportation of nutrients and signals to the cell which are needed for survival. The magnitude of this is the inspiration for our study of the lipid bilayer which forms the cell membrane. It's been recently accepted that the lipid bilayer consists of lipid micro-domains (lipid rafts), as opposed to freely moving lipids. We present a lipid raft model using the Cahn-Hilliard equations with electrostatics to describe the local pattern formation of these lipid rafts. (Received September 03, 2014)