1128-00-183 **Dominika W Dec**, **Claire Seibold*** (claire.seibold@umontana.edu) and **Emily Stone**.
Synaptic Plasticity in Excitatory and Inhibitory Hippocampal Neuron Circuit Dynamics. Preliminary report.

Microcircuits of inhibitory and excitatory neurons in the hippocampus have been studied over the past 30 years because of their importance in creating neural spike rhythms that have been implicated in processes such as the consolidation of episodic memories. Models for these circuits range from extremely simple (coupled phase oscillators) to extremely complex (complete, spatially extended, biophysically correct representations of the cells in Neuron). Various complex phenomena have been observed and explained through these models, such as synchronization, phase precession and bursting. Here we consider how time dependent connectivity of these cells effects these phenomena by incorporating a model for short-term synaptic plasticity that we developed and parameterized (from whole cell experiments) for two specific interneuron-pyramidal cell connections. To make analysis possible, we use the maps to describe both the plasticity and spike timing in the circuit (inspired by the work of Ermentrout and Kopell, 1998). (Received February 25, 2017)