1128-92-178 **Emily Stone*** (stone@mso.umt.edu), Dept. of Math. Sciences, University of Montana, 32 Campus Drive, Missoula, MT 59807, **Elham Bayat-Mokhtari** (elham.bayatmokhtari@umontana.edu), Dept. of Math. Sciences, University of Montana, 32 Campus Drive, Missoula, MT 59807, and **J. Josh Lawrence** (john.lawrence@ttuhsc.edu), Pharmacology and Neuroscience, Texas Tech University, 2500 Broadway, Lubbock, TX 79409.
Effect of Neuromodulation of Short-term Plasticity on Information Processing in Hippocampal Interneuron Synapses. Preliminary report.

Neurons in a microcircuit connected by chemical synapses can have their connectivity affected by the prior activity of the cells. The number of synapses available for releasing neurotransmitter (NT) can be decreased by repetitive activation through depletion of readily releasable NT, or increased through facilitation, where the probability of release of NT is increased by prior activation. These competing effects can create a complicated and subtle range of time dependent connectivity. Here we investigate the probabilistic properties of facilitation and depression (FD) for a presynaptic neuron that is receiving a Poisson spike train of input. We use a model of FD that was parameterized with experimental data from a basket cell and pyramidal cell connection in rodent hippocampus (roughly 8-10 synapses were counted), for fixed frequency input spikes. Hence our results will apply to micro-circuits in the hippocampus which are responsible for the gamma rhythms associated with learning and memory. (Received February 24, 2017)