

1145-AA-2626 **Shelby N Wilson*** (shelby.wilson@morehouse.edu), 830 Westview Dr., Atlanta, GA 30314.
On the Collective Dynamics of Coupled Morris-Lecar Neurons.

The spontaneous synchronization of certain groups of neurons is responsible for epileptic seizures as well as some of the motor symptoms of Parkinson's Disease. Hence, there is particular interest in understanding the conditions under which synchrony arises in neural networks. In this talk, we investigate the collective dynamics of a network of globally coupled Morris-Lecar neurons. We demonstrate how the collective dynamics strongly depend on the topological nature of the limit-cycle where the neurons are individually oscillating. Given that neural synchrony lies at the root of a number of neurological disorders, we will also highlight how time-delayed linear feedback can be used to avoid synchrony in an artificial neural network. (Received September 25, 2018)