1163-92-1580 **Laura Staugler*** (lstaugler@wpi.edu) and **Andrea Arnold** (anarnold@wpi.edu). *Using Ensemble Kalman Filter to Estimate Stochastic Current in the FitzHugh-Nagumo Model.*

The FitzHugh-Nagumo model is widely used for understanding the dynamics of a single neuron. While it may be possible to experimentally measure the voltage, the stochastic input current may be unmeasurable. The aim of this work is to estimate stochastic currents given noisy voltage data for a single neuron. We utilize ensemble Kalman filtering with parameter tracking to estimate the applied current and associated FitzHugh-Nagumo model states. Results are demonstrated using time-varying stochastic currents and currents that switch between deterministic and stochastic. (Received September 15, 2020)