

WAYNE STATE UNIVERSITY

The WSU Program for Traumatic Brain Injury Research

presents a Special Topic Seminar

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“Using Systems Biology to Develop New Treatments for Epilepsy”

Abstract: We have taken a novel, systems biology approach that links human brain anatomy, histology, and electrophysiology from patients who have undergone epilepsy surgery with functional genomics, proteomics, and metabolomics as a means to hone in on new biomarkers and therapeutic targets. This has required developing computational tools for storing, integrating, and ‘mining’ diverse types of data. One of the experimental paradigms is to identify pathways important for seizures and another is to focus on pathways unique to regions of human brain with frequent interictal spiking, but no seizures. By identifying common pathways shared by many patients with epilepsy, this reductionist approach has led to the identification of extremely reliable biomarkers of epileptic activity that implicate specific cellular populations. Some of the most highly significant of these therapeutic targets relate to synaptic plasticity, inflammation, vascularity, and metabolism.

Date: Thursday December 13th, 2012

Time: 12:00pm – 1:00 pm

Location: Green Lecture Hall – Scott Hall
540 E. Canfield, Detroit MI, 48201



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