ARGONNE
NATIONAL LABORATORY

PSE Seminar

Physical Sciences & Engineering Seminar

Joshua Vogelstein
Johns Hopkins University

"Opportunities and Challenges in Big Data Neuroscience"

Hosts: Peter Littlewood & Daniel Lopez

Friday, February 6, 2015 – 10:00 a.m.
Bldg. 241, Rm. D-172

Neuroscience is beginning to enter into the age of big data science. Several different technologies, spanning optics and electronics, structure and function, spatial and temporal scales, are yielding datasets at a potentially alarming rate (multi-terabytes per laboratory per day). The training and capabilities of typical practicing neuroscientists creates an opportunity to integrate and collaborative in a highly multidisciplinary fashion. Fortunately, despite the vast variety of experimental paradigms for obtaining these massive datasets, certain "principles" are arising for analyzing these data, which includes efficiently storing, querying, and joining. We will present a short list of key challenges that span multiple disparate sub-disciplines of neuroscience, and some learned 'do's and don'ts' associated with those challenges. Given time, we will conclude with some open opportunities to address these challenges.