

Dept. of Chemistry and Biochemistry

Organic/Inorganic Seminar Series

Scott Laughlin

Stony Brook University, Chemical Neurobiology

Friday, November 30, 2018

2:30—3:30 pm, 331 KLA

Coffee reception @ 2:00 pm, 377 KLA



Hosted by Ramesh Jasti

Chemistry for Exploring the Brain: Fluorescent Probes, Engineered Enzymes, and Bioorthogonal Reactions

Abstract: The brains of even simple organisms can do amazing things, but the brain's complexity makes understanding exactly how it works incredibly challenging. My lab focuses on using chemistry to understand the architecture of the brain's functional units called neural circuits. I discuss projects for developing chemical tools that enable visualization of astrocytes and neuron-interacting astrocytes in the brains of both mammals and zebrafish. I present another project that involves engineering an enzyme for recording when neurons are active, integrating chemical and optical strategies for limiting the time window in which we record neural activity. Finally, I cover a third project area that focuses on creating bioorthogonal reactions that can be activated in distinct cell types in the brain by exposure to light or an enzyme.