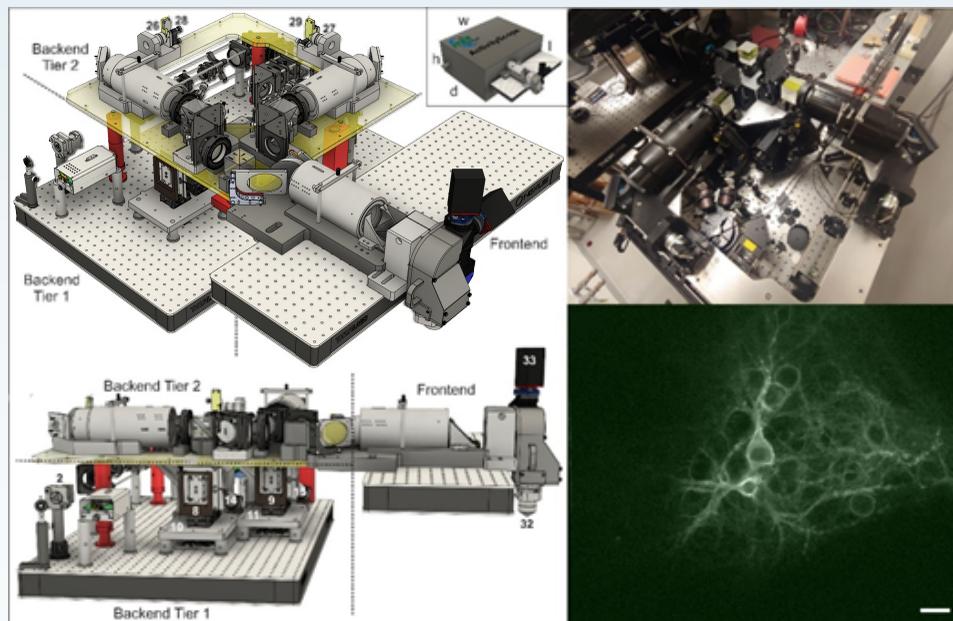


SLAP2



A revolutionary 2-photon microscope for imaging neuronal activity at unprecedented speed

The SLAP2 is a revolutionary new microscope based on a technological breakthrough called second-generation Scanned Line Angular Projection two photon laser scanning microscopy that was recently developed by Dr. Kaspar Podgorski (Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA).



This microscope is capable of performing activity imaging at subcellular spatial resolution and temporal resolution in the millisecond range (i.e., at 1000 Hz and higher) in the brain of mice in vivo and in brain slices in vitro.

The game-changing innovation in the SLAP2 is the ability to perform unparalleled optical imaging of neuronal activity in populations of neurons at subcellular spatial resolution and temporal resolution in the millisecond range both in vivo and in vitro using a variety of fluorescent indicators (e.g. voltage, neurotransmitter).

For the first time, this technology makes it possible to capture the dynamics of populations of neurons in vivo with millisecond temporal resolution and at least single-cell spatial resolution. This capability is critical for decoding how information is represented and processed by the billions of densely interconnected neurons comprising the mammalian CNS.

The neuroscience research implications of the SLAP2 are unprecedented. This novel microscope will enable groundbreaking optical imaging of neuronal activity in populations of neurons using fluorescent voltage indicators as well as fluorescent biosensors for neurotransmitters.