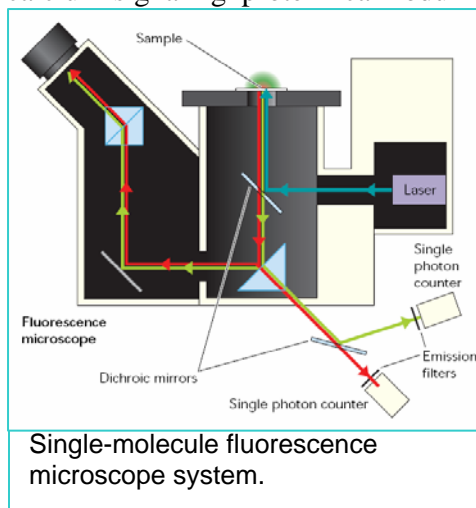


Laser spectroscopy for Studying single biomolecules and fluorescence-based assays (Prof. Carey K. Johnson). Prof. Johnson's group uses lasers as spectroscopic probes of biologically important molecules. His research is aimed at understanding the dynamics, interactions, and function of proteins, such as the calcium-signaling protein calmodulin. Single-molecule methods allow the determination of the range of structures and dynamics in proteins, information that is lost in conventional experiments. Prof. Johnson's REU students will be involved in an interdisciplinary research project involving biochemistry, biophysics, physical/analytical chemistry, and laser spectroscopy. They will use a single-molecule fluorescence microscope to detect single calmodulin molecules and follow the process of binding target peptides and enzymes. In addition to carrying out experiments, the students will learn the basics of laser operation and fluorescence microscopy. Prof. Johnson has published seven papers with undergraduate authors including four articles with REU students.



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