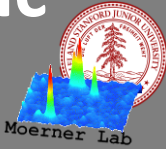


Single-molecule spectroscopy reveals photosynthetic LH2 complexes switch between emissive states

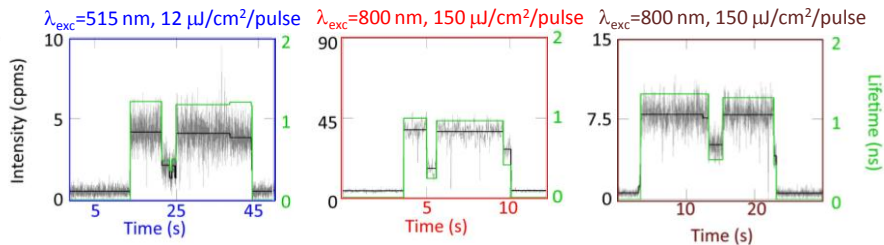


Gabriela Schlau-Cohen, Quan Wang, June Southall, Richard Cogdell, W. E. Moerner

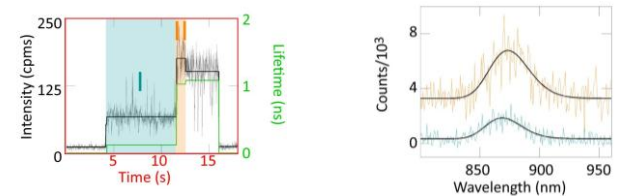
Light-harvesting complex 2 (LH2) is the primary antenna in purple bacteria & the site of initial photo-absorption & energy transfer steps

Simultaneous measurements of fluorescence intensity, lifetime and spectra on single LH2 complexes

Correlated changes in fluorescence intensity & lifetime for excitation of all pigment groups

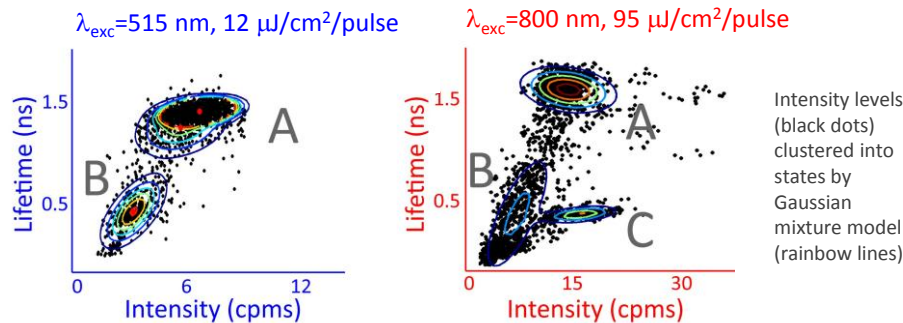


Spectral maximum shifts with ~3% of intensity changes



Spectral changes uncorrelated with intensity/lifetime changes

3 states revealed in lifetime-intensity space



Model of molecular mechanism behind observed states

Rate of state A to state B intensity dependent
→ photo-activated, reversible quenching

