

AIF Sponsored Seminar

1:30 pm, Thursday October 25, 2012

1st Floor Lecture Hall, Forchheimer

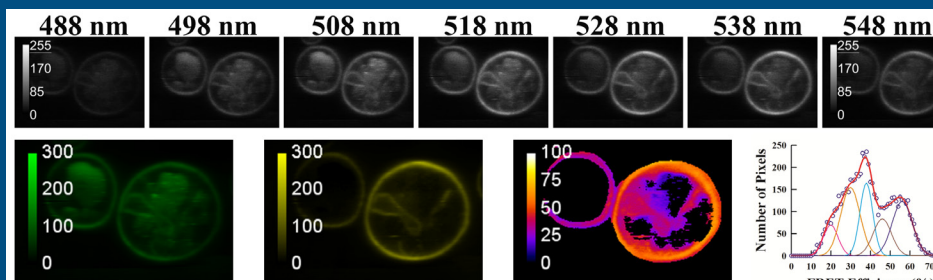
Presented by: Dr. Valerica Raicu
University of Wisconsin-Milwaukee



Albert Einstein College of Medicine
OF YESHIVA UNIVERSITY

Probing Protein Quaternary Structure in Living Cells Using Optical Micro-Spectroscopy (OptiMiS) and FRET

A method is presented that relies on a two-photon microscope with spectral resolution (called an Optical Micro-Spectroscopic system, or OptiMiS) and a simple theory of FRET to determine the quaternary structure of membrane protein complexes.



Probing protein quaternary structure

Each pixel in the acquired scan contains the full spectral information and is unmixed to quantify the fluorescence emission emanating from the donor (bottom, green image), and acceptor (bottom, yellow image). These two images are then used to map the FRET efficiency (bottom, third image).

Binding stoichiometry and quaternary structure may be determined by plotting the histogram of FRET efficiencies (bottom, far right image) obtained from the FRET efficiency map.

