

TUTORIAL WORKSHOP – FUNDAMENTALS OF FLUORESCENCE IMAGING

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This tutorial will consist of two lectures, with a break for refreshments and discussion between them, and further time for discussion afterwards

Lecture 1 – Basics of fluorescence and fluorescence microscopy.

Fluorescence – how it works. Widefield (Ploem) fluorescence microscopes, confocal microscopes. Rayleigh resolution. Multiphoton excitation, second harmonic generation. Fluorescence lifetime, fluorescence bleaching.

Lecture 2 – Getting the picture – acquiring an optimal image

Optical considerations – aberrations especially spherical and chromatic aberration. Digital imaging – sampling considerations in x, y z & t, signal / noise, what is a colour image?