

INTERNATIONAL COURSE OF FLUORESCENCE MICROSCOPY

November 5–8, 2018 

Organizer, Prof. Octavio Monasterio

Laboratorio de Biología Estructural y Molecular, Departamento de Biología,
Facultad de Ciencias, Universidad de Chile.

Invited professors and speakers

Enrico Gratton (EG), Laboratory for Fluorescence Dynamics, University of California, Irvine, USA.

David Jameson (DJ), Department of Cell and Molecular Biology, University of Hawaii at Manoa, USA.

Valeria Levi (VL), Departamento de Química Biológica, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires. IQUIBICEN-CONICET. Ciudad Universitaria, CP1428 Ciudad de Buenos Aires, Argentina.

Leonel Malacrida (LM), Departamento de Fisiopatología / Facultad de Medicina - UDeLaR / Universidad de la República / Uruguay. Actual: Laboratory for Fluorescence Dynamics, University of California, Irvine, USA.

Susana Sánchez (SS), Departamento de Polímeros, Facultad de Ciencias Químicas, Universidad de Concepción. Chile.

Joao Botelho (JB). Brasil. Actual address, Department of Geology and Geophysics, Yale University NH, USA.

Professors in charged of the course

Dr. Andrés Marcoleta, Laboratorio de Biología Estructural y Molecular, Departamento de Biología, Facultad de Ciencias, Universidad de Chile.

Dr. Alejandro Roth, Departamento de Biología, Facultad de Ciencias, Universidad de Chile.

Overview

The course will contemplate: Fluorescence spectroscopy and fluorescence microscopy theoretical lectures by the invited professors, fluorescence microscopy concepts applications and practical demonstrations.

This course is designed for graduate students, academic and professional researches in the area of fluorescence microscopy that want to increase the knowledge in these subjects.

Topics of the course

Introduction to fluorescence spectroscopy, single and double photon (DJ)

Time-resolved fluorescence and FRET (DJ)

Fluorescence microscopy (EG)

Fluorescence Correlation Spectroscopy, Autocorrelation, Photon Counting Histogram, Cross-correlation (EG)

RICS, N&B, FLIM, pair-correlation (EG)

In vitro and in vivo fluorescent probes (SS)

Generalized Polarization, scanning FCS (SS)

Particle Tracking and applications (VL)

Whole mount confocal microscopy and digital rendering for the study of vertebrate development (JB)

Practical demonstrations

LSM 510 Confocal TIRF (AM, AR).

iMSD y 2D-pCF (LM, DJ))

Zeiss 710 RICS and Line FCS (VL, SS)