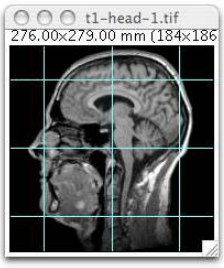
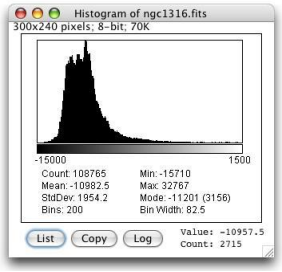
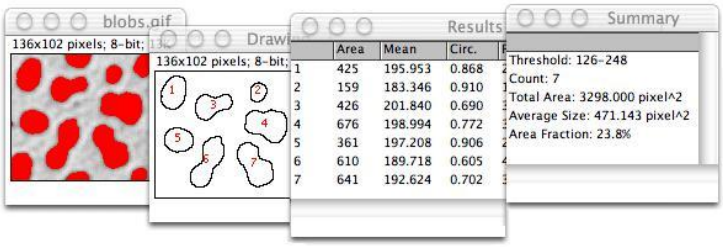




Practical Image Analysis in Biology

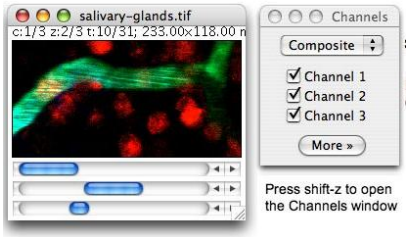


Teacher: Gabriel G Martins
Calendar: Feb 13-17 2012
Duration: 30 hours
Schedule: 13h-19h, everyday

Objectives

This course covers most techniques used in analysis of images in Biology, especially analysis of images from bioimaging equipment such as microscopy, CT/MRI as well as video camera/lab photo images.

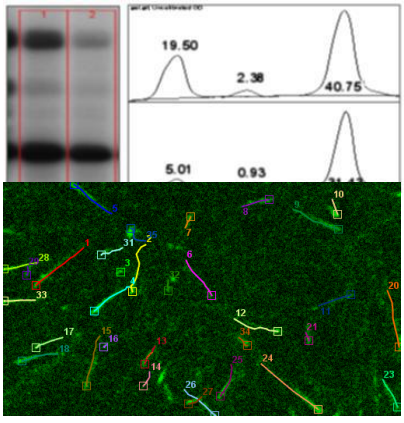
Topics addressed include: Image quality and image acquisition parameters; Image Analysis software, with both commercial and free examples (ImageJ will be used throughout the course); Image processing in preparation for analysis; noise, blurring and sharpening; binary operations; Image Segmentation; Image histogram analysis and classification; Object/particle analysis; Shape descriptors; 2D and 3D morphometry, skeletonization and branch analysis; tracking of particles/cell movements; Producing/analyzing 3D images; Colocalization analysis; Surface plots and kymographs; Basic gel analysis.



General plan

The course consists of both theoretical (10%) and practical classes with demos and analysis of image examples. Students are encouraged to bring images from their specific research to analyze during the course. The course includes demos from guest speakers, experts on image analysis.

Location: Departamento de Biologia Animal, room 2.3.37
Nº (min, max) students: 10-15
Minimum academic degree: Licenciatura/mestrado



Fees: Free for 1st year PhD students in the Doctoral programme in Biology (UL), Biodiversity, Genetics and Evolution (UL, UP) or Biology and Ecology of Global Changes (UL, UA). Other students and BI grant-holders from FCUL, IMM e IGC = 100€; students from other institutions = 200€; others (eg professionals) = 300€. Fee includes course materials and coffee breaks.

Deadline for applications: December 20, 2011

→ Candidates should send a short CV and motivation letter explaining also why they are interested in the course and which types of images they wish to analyse. Send all information and requests to Gabriel Martins (gaby@fc.ul.pt)