



Instruct course: First I2PC-FEI “hands on” course on image processing applied to the structural characterization of biological macromolecules Program

Venue: Parador Alcalá de Henares

Room: Retorica

Monday, October 17th, 2016

12:00 - 12:30. Registration

12:30 - 13:30. Welcome Reception

13:30 - 13:45. Introduction to the Course (Jose Maria Carazo)

13:45 - 15:00. Cryo EM and 3D reconstruction (Jose Maria Carazo)

15:00 - 16:00. Basic Background: Fourier transform, central section theorem, sampling. (Carlos Oscar Sorzano)

16:00 - 16:30. Coffee break

16:30 - 1800. The Electron Microscope (EM): Direct Electron Detectors, image formation, aberrations, the Contrast Transfer Function (CTF).(Jose Maria Carazo)

Tuesday, October 18th

09:00 - 10:30. Single Particle workflow (Jose Miguel de la Rosa)

10:30 - 11:00: Coffee break

11:00 - 13:30. Cryo-TEM: From Evolution to Revolution – the Dawn of a New Scientific Age (past, present and future....) (Marc Storms)

13:30 - 14:30. Lunch

14:30 - 16:00. The single particle cryoTEM workflow - Practical aspects from sample preparation to automated image acquisition (Sonja Welsch)

16:00 - 16:30. Coffee break

16:30 - 18:00. Practical work: Video frame alignment, Contrast Transfer Function estimation, micrograph screening, particle picking and extraction (Jose Luis Vilas/Jose Maria Carazo)

Wednesday, October 19th

09:00 - 10:30. Practical work: 2D Classification Exploration (Pablo Conesa/Carlos Oscar Sorzano)

10:30 - 11:00: Coffee break

11:00 - 13:30. Practical work: Initial Volume (computational procedures and introduction to Randon Conical Tilt)(Pablo Conesa/ Carlos Oscar Sorzano)

13:30 - 14:30. Lunch

14:30 - 16:00. Practical work: 3D alignment and classification (Josue Gomez / Roberto Melero)

16:00 - 16:30: Coffee break



16:30 - 18:00. Practical work: 3D alignment and Reconstruction (Josue Gomez / Roberto Melero)

18: 00: Alcala de Henares city tour and Cocktail at the Parador.

Thursday, October 20th

09:00 - 10:30. Practical work: 3D validation and quality measures (Javier Vargas)

10:30 - 11:00. Coffee break

11:00 – 13:30. Introduction to model building (Roberto Marabini)

13:30 – 14:30: Lunch

14:30: Instruct students are invited to join to the “First iNEXT all Hands Meeting”