

Electron Cryo-microscopy Workshop, 2nd-4th July 2014

Seminar room 1
Biocenter
Martin-Luther-University Halle-Wittenberg
Weinbergweg 22
Haale (Saale)

Wednesday 2nd July:

Afternoon session: Introduction to Electron Cryo-Microscopy

- 1500-1515: Dr. Vicki Gold
Welcome and general information
- 1515-1615: Dr. Bertram Daum
Introduction to Techniques in Cryo-EM
- 1620-1645: Andreas Walter
Electron optics
- 1645-1700: Coffee break
- 1700-1800: Andreas Walter
Image formation due to phase contrast and basic microscope alignment

Thursday 3rd July

Morning session: Single Particle Cryo-EM

- 0900-0945: Edoardo D'Imprima
Cryo-EM by single particle analysis I - theoretical aspects
- 0945-1030: Matteo Allegretti
Cryo-EM by single particle analysis II - state of the art image processing
- 1030-1100: Coffee break
- 1100-1300: Edoardo D'Imprima & Matteo Allegretti
Practical session: Single particle image processing
- 1300-1400: Lunch break

Afternoon session: Electron Cryo-tomography

- 1400-1500: Dr. Vicki Gold
Electron cryo-tomography – from whole cells to protein complexes
- 1500-1530: Dr. Bertram Daum
Subtomogram averaging using PEET
- 1530-1600: Coffee break
- 1600-1800: Dr. Vicki Gold and Dr. Bertram Daum
Practical session: Tomogram reconstruction and subtomogram averaging

Friday 4th July

Morning and Afternoon sessions: Electron crystallography

- 0900-1000: Dr. Maria Müller
Electron crystallography - potentials and limitations
- 1015-1100: Dr. Maria Müller and Andreas Walter
Practical session: Sample preparation of two-dimensional crystals
- 1100-1130: Coffee break
- 1130-1300: Dr. Maria Müller with Andreas Walter
Practical session: 2dx_merge software package demonstration I
- 1300-1400: Lunch
- 1400-1530: Dr. Maria Müller with Andreas Walter
Practical session: 2dx_merge software package demonstration II
- 1530-1700: Discussion, questions and feedback from the course