

Applications of Electron Microscopy: Knowledge and facilities in the Basque Country

Venue

CIC bioGUNE

Bizkaia Science and Technology Park
Building 800 (Atrium), Derio

March 15, 2018

For registration click [here](#)

OVERVIEW

Electron Microscopy (EM) is widely used in material and biological sciences and was recently recognized in the [2017 Chemistry Nobel Prize](#) as a powerful structural biology technique. EM is opening doors to access biological samples that were previously intractable, allowing researchers to address evermore challenging questions in Chemical Biology, Biology and Biomedicine. Specifically, cryo-EM can increasingly cope with problems faced by the modern cell biologists, namely the in situ study of structures within complex cellular environments and the ex vivo study of samples displaying significant heterogeneity and/or low bioavailability. EM methods needed to address these questions are becoming increasingly accessible to novice researchers but are under constant development, so an introductory survey of the available approaches is essential for new users to adopt cutting edge technologies and expand their investigation in new directions to increase the biological/chemical impact of their research.

The seminar-based course is designed for students, post-docs, researchers and PIs in both academics and industry with little or no exposure to modern cryo-EM but a desire to learn how cryo-EM can be applied to their own line of investigation.

TARGETED AUDIENCE

COVERED THEMES

- What is electron microscopy?
- Electron Microscopy in Material Science
- Electron Microscopy in Biological Science (e.g. cryo-EM single particle, tomography, helical reconstruction, etc).
- What information can be obtained from cryo-EM experiments?
- How to get started preparing samples for cryo-EM and assay their suitability for further study by cryo-EM?
- How can I access modern local and international cryo-EM facilities?

The course should allow attendees to recognize the potential for cryo-EM to be applied to their own project and develop coherent strategies for its application to answer biological questions.

IMPACT

ORGANIZERS

- Dr. Nicola GA Abrescia, CIC bioGUNE / Ikerbasque
- Dr. Sean Connell, CIC bioGUNE / Ikerbasque
- Dr. Mikel Valle, CIC bioGUNE
- Dr. David Gil, CIC bioGUNE Electron Microscopy Platform

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PROGRAM



11:00	Welcome and introduction to the Cryo-EM unit at the CIC bioGUNE
11:10	Dr. Mikel Valle, Structural biology Unit. CIC bioGUNE <i>High resolution cryoEM</i>
12:00	Dr. Ricardo Andrade, UPV (Leioa) <i>101 images from the daily life of a Microscopy Facility technician</i>
12:50	Dr. Nicola GA Abrescia. CIC bioGUNE / Ikerbasque <i>Electron microscopy of icosahedral particles and pleomorphic biological systems</i>
13:40	Dr. Maria Luisa No, UPV (Leioa) <i>Microscopia electrónica y microanálisis de materiales en la UPV/EHU: Desde la micra hasta la resolución atómica.</i>
14:30	Light Lunch
15:30	David Monville, Izasa Scientific <i>“Cámaras de captación directa”</i>
16:20	Dr. Sean Connell. CIC bioGUNE / Ikerbasque <i>Using single particle Cyro-EM to understand antibiotic action and ribosomal activities</i>
17:10	Dr. David Gil, CIC bioGUNE Electron Microscopy Platform <i>What the Electron Microscopy Platform at the CIC bioGUNE can do for you!</i>
18:00	Dr. Andrey Chuvilin, CIC nanoGUNE (San Sebastian) <i>Electron microscopy Lab at nanoGUNE: a guided tour</i>
18:50	Closing Comments

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