

Program CUSO : Electron microscopy 3-4 November 2025 (plastic) and 10-11 November (cryo)
DCI Lausanne, Génopode and EMF, Biophore, UNIL

Aim : Cover the theoretical and practical basics of cellular electron microscopy and cryo. Workshops will illustrate practically the techniques used in EM to solve biological questions.

Tasks for students: On Monday 3rd November in the morning, each student has 3 minutes (1-2 slides) to explain his needs in electron microscopy in the frame of the PhD work.

We will communicate the exact room by email before the course

Metro station is UNIL Sorges

The Morning are dedicated to courses covering the technical aspects and main workflows. It alternates with talks given by experts to show how they solve biological problems with EM.

Students are divided in 2 groups and are following 4 workshops on Monday and Tuesday afternoons. Each workshop lasts an entire afternoon. Workshops 1 and 2 are occurring on 3 and 4 November. Workshops 3 and 4 on 10 and 11 November. Group 1 will do workshops in the order W1 W2 W3 W4 and Group 2 in the order W2 W1 W4 W3

Workshop 1 : EMF – Sample preparation and cutting for Room temperature EM

Workshop 2 : DCI – sample preparation for cryo-TEM of single particle (plunge-freezing)

Workshop 3 : EMF – TEM and SEM imaging

Workshop 4 : DCI – cryo-TEM imaging

	Monday 3 Nov	Tuesday 4 Nov		Monday 10 Nov	Tuesday 11 Nov
9h15-10h00	EM intro – student’s talks	Sample prep (JD)		Intro cryo-EM (AM)	cryo-Tomo
10h15-11h00	EM intro – student’s talks	Image analysis and data management (TBD)		Basic Principals of cryo-EM (Alex)	Cryo-TOMO Sub-tomo
11h15-12h00	Intro TEM/ SEM (CG)	Special applications (AL)		Invited talk	Tomography reconstruction and analysys
	<i>Lunch break</i>	<i>Lunch break</i>		<i>Lunch break</i>	<i>Lunch break</i>
13h15-14h45 (EMF-1219)	Workshop 1 or 2	Workshop 1 or 2		Workshop 3 or 4	Workshop 3 or 4
14h45-15h15	<i>Break</i>	<i>Break</i>		<i>Break</i>	<i>Break</i>
15h15-16h45 (EMF-1219)	Workshop 1 or 2	Workshop 1 or 2		Workshop 3 or 4	Workshop 3 or 4

Teachers :

Christel Genoud, head of EM platform UNIL

Jean Daraspe, Expert scientist EMF UNIL, expert FIBSEM tomography

Antonio Mucciolo, SEM expert

Amanda Lewis, post-doc EPFL, expert CLEM in human neurodegenerative

diseases Alexandre Myasnikov, head of Dubochet Center for Imaging

Cristina Martin Olmos, head cryo-SEM

Bertrand Beckert, DCI, UNIL EPFL

Emiko Uchikawa, DCI, UNIL EPFL

Sergei Nazarov, DCI UNIL EPFL

Inay Mohammed, DCI, UNIL EPFL