Becoming an 'independent' single particle data collector

This is a remote course jointly hosted between ABSL (University Leeds) and eBIC (Diamond Light Source). The training leads for this course are Rebecca Thompson (Astbury Biostructure Laboratory, University of Leeds) and Kyle Morris (Diamond Light Source). All times stated are in GMT. To contact the organisers please email EMcourses@leeds.ac.uk.

You will be asked to provide feedback on the course after attending and we would really appreciate your response. We encourage everyone to keep their cameras on throughout the course to enable better interaction. This course aims to be informal and inclusive, so please feel free to interact with the instructors the same as you would at an in-person course.

Please note that we may record or capture the sessions for training purposes. ***Disclaimer*** It may be the case that your screen name or video is captured on the recording – if you strongly prefer not to be recorded, please contact the course organisers to advise of your preference in advance of your session.

Pre-course instructions – failure to complete will prevent your course participation

All Groups – Diamond Light Source account setup (PLEASE COMPLETE BY FRIDAY 11th FEBRUARY)

1) If you have a Diamond FedID skip to step 5 to check you can log in
2) Go to https://uas.diamond.ac.uk/uas/#register
3) Complete all sections of the registration form and submit
4) **Email the Diamond user office** (useroffice@diamond.ac.uk) and cc kyle.morris@diamond.ac.uk to inform that you have completed user registration and **request your fedID to be assigned**.
5) After receiving your fedID, check you can log in to Diamond systems https://uas.diamond.ac.uk
6) If you need to change your Diamond FedID password: https://access.stfc.ac.uk

All Groups – NoMachine, Zoom, Teams (Please complete prior to the course start)

1) Download and install/update NoMachine https://www.nomachine.com

Please use the email address that you registered for this course when creating accounts for the following:

2) Download and install/update Zoom https://zoom.us/download

Groups 1 & 3 - Team Viewer (Please complete prior to the course start)

1) Download and install Team Viewer and create a free account.
2) After you create your account go to: https://login.teamviewer.com/cmd/joincompany
3) Groups 1,2 insert r.f.thompson@leeds.ac.uk.

Programme:

Day 1: Microscopy – all groups Instructor lead: student learning		
10:00–10:15	**Arrival:**	Arrival and welcome (Rebecca Thompson and Kyle Morris)
10:15–10:45	**Session 1.1:**	Explanation of microscope preparations & concepts (Kyle Morris)
10:45–11:00	Morning break	
11:00–12:00	**Session 1.2:**	Intro to EPU, manual image acquisition, calibrations and Atlas (Kyle & Dan)
12:00–13:00	Lunch	(Opportunity to test Team viewer and NoMachine)
13:00–14:45	**Session 1.3:**	EPU session and target setup (Dan Clare)
14:45–15:00	Coffee break	
15:00–16:00	**Session 1.4:**	Alignments in EPU, data collection and on-the-fly analysis (Vinod Vogirala)
Day 2: Microscopy – individual groups Instructor guided: Student practise and observation		
10:00–11:00	**Session 2.1:**	Student 1 – Presets, image shift calibrations, Atlas and session setup
11:00–12:00	**Session 2.2**	Student 2 – Presets, image shift calibrations, Atlas and session setup
12:00–13:00	Lunch	
13:00–13:50	**Session 2.3:**	Student 1 – Manual hole screen, set up squares, template definition
13:50–14:40	**Session 2.4**	Student 2 – Manual hole screen, set up squares, template definition
14:40–15:00	Coffee break	
15:00–16:00	**Session 2.5:**	Students 1 & 2 – Alignments in EPU, start collection and on-the-fly analysis
Day 3: Microscopy – individual groups Instructor guided: Student practise and observation		
10:00–11:00	**Session 2.1:**	Student 3 – Presets, image shift calibrations, Atlas and session setup
11:00–12:00	**Session 2.2**	Student 4 – Presets, image shift calibrations, Atlas and session setup
12:00–13:00	Lunch	
13:00–13:50	**Session 2.3:**	Student 3 – Manual hole screen, set up squares, template definition
13:50–14:40	**Session 2.4**	Student 4 – Manual hole screen, set up squares, template definition
14:40–15:00	Coffee break	
15:00–16:00	**Session 2.5:**	Students 3 & 4 – Alignments in EPU, start collection and on-the-fly analysis
Day 4: Image Processing after Pipeline Analysis – all groups		
10:00–10:30	**Session 4.1:**	Inspection of real-time analysis results in SynchWeb and Relion
10:30–11:00	**Session 4.2:**	Continuing processing from real-time analysis results
11:00–12:00	**Session 4.3:**	Continuing processing from real-time analysis results
12:00–13:00	Lunch	
13:00–14:45	**Session 4.4:**	Continuing processing from real-time analysis results
14:45–15:00	Coffee break	
15:00–16:00	**Session 4.5:**	Continuing processing from real-time analysis results
16:00–16:30	**Course wrap up (Rebecca Thompson and Kyle Morris)**	
End of Course		

Virtual meeting links:

There is a single zoom meeting link for this course, use this for each day of the course.

We will use breakout rooms on days 2, 3 and 4 to group you with your instructor. Please note your group numbers.

When you join the zoom, please change your screen name to the following format 'Group number: First name, Surname' i.e. 1: Kyle Morris

	Group 1 1. 2. 3. 4.	**Group 2** 1. 2. 3. 4.	**Group 3** 1. 2. 3. 4.	**Group 4** 1. 2. 3. 4.	**Group 5** 1. 2. 3. 4.
Instructor	**Yehuda**	**Becky**	**Dan**	**Andy**	**Vinod**
21st February – day 1					
	Krios 4 (eBIC)				
22nd February – day 2					
	Krios 1 (Leeds) Group 1	Krios 2 (Leeds) Group 2	Krios 2 (eBIC) Group 3	Krios 3 (eBIC) Group 4	Krios 4 (eBIC) Group 5
23rd February – day 3					
	Krios 1 (Leeds) Group 1	Krios 2 (Leeds) Group 2	Krios 2 (eBIC) Group 3	Krios 3 (eBIC) Group 4	Krios 4 (eBIC) Group 5
24th February – day 4					
	Image processing (eBIC)				
End of course					

Curriculum:

Session trainers
Krios 1 (Leeds): Rebecca Thompson/Josh White
Krios 2 (Leeds): Yehuda Halfon/ Louie Aspinall
Krios 2 (eBIC): Dan Clare
Krios 3 (eBIC): Andrew Howe
Krios 4 (eBIC): Vinod Vogirala

Krios joining instructions
1) Join the zoom call using the table on the previous page.
2) You will be sent into breakout rooms with your assigned instructor and microscope
   To facilitate this, please change your screen name to the following format 'Group number: First name, Surname' i.e. 1: Kyle Morris

Curriculum

Day 1
Alignments and operations often performed by facility staff
Camera calibrations often performed by facility staff
EPU layout introduction

Eucentric height and manual image acquisition using Presets
Preset optimisation
Image shift calibration of Presets

Acquiring Atlases

EPU session and target setup
Alignments, starting data collection and on-the-fly analysis

Day 2
Students 1 & 2: practise EPU complete SPA workflow set up
Preset optimisation (including dose set up), Image shift calibration, Atlas acquisition
EPU session set up, Manual hole screen, Setting up square(s), Template definition
Alignment in EPU, Data collection and SynchWeb

All students: review knowledge and troubleshoot

Day 3
Students 3 & 4: practise EPU complete SPA workflow set up
Preset optimisation (including dose set up), Image shift calibration, Atlas acquisition
EPU session set up, Manual hole screen, Setting up square(s), Template definition
Alignment in EPU, Data collection and SynchWeb

All students: review knowledge and troubleshoot

Day 4
Review SynchWeb results
Inspect Relion project structure from on-the-fly analysis from SynchWeb
Set up Relion project structure to continue image processing
Image processing workflow on Apo ferritin