

SLAC Work Planning Control (TEM1 and TEM4)

Since TEM1 and TEM4 are housed on SLAC and use SLAC resources, there are extra steps needed to be done to collect samples on these instruments. This is to ensure safety and adherence to The Department of Energy's requirements.

Useful links

iLabs: stanford.ilabsolutions.com

User Portal: userportal.slac.stanford.edu

SLAC Globus Confluence:

<https://confluence.slac.stanford.edu/spaces/cryoEM/pages/236489369/Where+is+my+Cryo-EM+Data>

Stanford Globus Instructions: globus.stanford.edu/

SLAC badging: esh.slac.stanford.edu/badging tel: 650-926-2975

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Quick Steps

1. Users book an iLabs session.
2. Users must then submit a project proposal.
3. Project gets approved.
4. Staff arranges time with user for using instrument.
5. Time is approved and eLogbook session created.
6. Data is transferred off of SLAC storage onto local.

Detail Steps

Requesting time

1. Users book an iLab session in advanced of their desired time.
2. If the user already has a project number for their sample, they may enter that information in the session details to facilitate approval.
3. Users must then register in the User Portal (if they have not already) and submit a proposal (see below), or work with a staff member to fill it out.

Accessing SLAC resources

If a staff member will be doing all the work [i.e., if the user will not be going onsite, will not load the sample, and will not access SLAC computers (including remote access) or directly accessing data from SLAC servers]:

1. Users do not need training.
2. Users will coordinate with staff, and the staff will handle everything.
3. Note: Most external users would fall under this category.

If users will be loading samples, going onsite, and/or using SLAC computer resources:

1. Users must finish the required SLAC trainings.
 - a. ES&H

- b. Cybersecurity
2. Users must then coordinate with staff to book time in SLAC's system.

Submitting a proposal

SLAC requires that every sample must have a proposal and project number associated with it. Samples for a continuing project may use the same project number.

1. Users will submit the project on the User Portal
 - a. PI—Should be entered into system. If no PI, skip or enter "none".
 - b. Primary contact—Typically the user, but can be staff
 - c. Collaborator—Often is the staff member, but could be user (especially if the staff will be doing all the work; then the staff is the primary contact and user the collaborator)
 - d. Minimum: Need project title, abstract, and sample information
 - i. The following is needed for sample information:
 1. Source (cell type)
 2. Material (e.g., recombinant protein, DNA, RNA, cell, virus, cell lysate, etc.)
 3. Name of material (e.g., protein name or type)
 4. Confirm that the sample is BSL1.
 - a. If sample is purified recombinant protein, sample is always BSL1
 - b. Certain nucleotides, viruses, and cell lysates may be classified as BSL2 even when isolated from their living source.
 - c. Contact Nneha for using BSL2 samples, which will require further actions.
 5. Any further information is helpful. The more the better.
 - e. Users do not need preliminary data
 - f. Grant numbers are needed
 - i. If user does not have a grant, all zeros or TBD may be used
2. Proposals will then be sent to Lisa Dunn for approval. This should only take a week at most. If it goes on longer, staff will check in on the progress.

Badge access

Users will need to obtain a SLAC badge in order to go onsite to SLAC. Guest passes can be obtained for one-time access, but if a user plans on going multiple times it is better to get a badge. Users can find the detailed information on the SLAC badging website.

In general, users will need to:

1. Have a SLAC sponsor to start the process (contact staff).
2. Complete the required training.
3. Have a valid government ID card if the user is a US citizen.
4. If the user is not a US citizen, they will need to have a valid visa and passport.

Day of collection

1. The staff member will create an eLogbook session. The following information is needed for each session:
 - a. Imaging method (SPA, tomo)
 - b. Imaging software (EPU or Serial EM)
 - c. File Format (should always be .tif)
 - d. Super Resolution

- e. Angstrom per Pixel
- f. Dose per Frame
- g. Total Dose
- h. Frame Duration (sec/frame)
- i. Exposure time (sec)
- j. Phase Plate
- k. Particle Size
- l. Objective Aperture-inserted
- m. Objective Aperture-size
- n. Slit Size (eV)

The rest of the eLogbook information is for data preprocessing, which we do not do.

2. Set up data and collect according to the TEM1 and TEM4 protocols.

Retrieving data—Globus

Data is best transferred from the SLAC to the user's local storage using Globus. For instructions on how to set up a Globus for SLAC, go to the SLAC Globus confluence link under "Helpful links".

Note that data can only be stored at SLAC for a minimal time, typically 30 days. However, we may need to purge data sooner than 30 days if storage gets full.

External users may need to coordinate with the CEMC staff to retrieve their data.