NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE | NTU Institute of Structural Biology

NTU CRYO-EM LABORATORY RULES

1. Users must meet all the requirements stated in the "NTU Cryo-EM Lab Guidelines for New Users" before they are allowed to access the lab and its equipment. Any unauthorised access is forbidden.

2. Personal access cards are not transferrable under any circumstances.

3. As a general rule, users are not allowed to conduct equipment training. Equipment training can only be conducted by EM staff.

4. Please switch off the lights when you leave the room/lab.

5. The lab is under 24-hour CCTV surveillance.

6. The access door separating the research lab (SBS02n-01) from the sample preparation (Vitrobot) room can only be used by EM, service, moving personnel or during an emergency. Users must not use it to access the research lab or vice versa.

7. C-rings and c-clips are very expensive, and users must record the usage of c-rings and c-clips via FORM5.

8. Users are not allowed to move or tamper with any EM tools and devices in the lab. If there is a good reason to move a tool between the EM rooms or labs, please submit your request to emicroscope@ntu.edu.sg.

9. The last T12 user of the day has to start the cryocyle. If a cancellation is made, which happen to be for the last session for the day, it is the sole responsibility of the user who cancelled the last session to ensure that the system is placed on cryocyle and standby.

10. Problems involving any of the equipment must be reported to EM staff immediately. Do not attempt to repair any equipment.

11. Users must not restart or shutdown the microscope PCs (main or support) unless under the direct supervision of the EM manager.

12. Users are reminded to handle all equipment and tools (e.g. tweezers, nanocabs etc) with care to minimize downtime, which could cause a lot of inconvenience to the other users. Users who mishandle equipment will have to undergo retraining before lab or equipment access can be granted again. Depending on the situation, users could be asked to pay for the damages, and access suspended or terminated.

13. Users are reminded to complete their work on time so as not to affect the next user. Users should set aside time for data conversion, transfer and back up. No extra time will be given for data transfer and back up.

14. Users are reminded to back up their data as soon as possible, and then delete their data from the main PC, support PC and/or storage servers (offloader). The PCs and storage servers should not be used for long-term data storage (more than 7 days). Our EM staff will check the PCs and servers from time to time and data more than 7 days old will be deleted without prior notice given. The lab will not be held responsible for any loss of data.

15. Users who uses the grid storage tank in SBS02n-39R are responsible for its maintenance by refiling it with liquid nitrogen, at least once a week. The duty roster will be sent out every few months.

16. Users who repeatedly violate any of the above rules (and those communicated via other channels) could have their lab access suspended for a period of time.

17. To determine downtime and computation of charges, users must keep an accurate record of microscope issues encountered during data collection. Users should inform EM staff immediately about such problems, provides snapshots of error messages displayed on the software, date and time of occurrence, duration of occurrence, and fill up the Equipment Usage Record. The completed form can be uploaded via FORM6. The lab will assess the case, and the user could in certain circumstance, be given extra equipment time as a compensation for their lost time.

18. You can use this form (FORM7) to let us know what you feel is working well and what concerns you would like addressed. The form should only take about 3-5 minutes to complete, depending on how much feedback you choose to give. The more specific your comments, the better we will be able to address your concerns.

Specific Rules for Arctica & Krios Usage

19. The Arctica can be used for screening and data collection.

20. The Krios is restricted to data collection, unless when the Arctica is down for an extended period of time (longer than 7 working days) and when there is no queue on the Krios for data collection. Data collection has priority.

21. Arctica and Krios users should screen the grids carefully and extensively, and only select the best grid for data collection.

22. Users are highly recommended to set up EPU for a short session (at least 1 hour), make use of the freely available NISB's computational resources, and to assess the quality of the data by on-the-fly processing.

23. Users should proceed to collect a large dataset collection only if the outcome of on-the-fly processing is promising. The lab will charge users for the time utilised and

will not waive any usage charges because the outcome of image processing of the entire dataset is disappointing.

24. It is the user's responsibility to monitor the data collection, and to intervene when necessary. Such Intervention includes, but not limited to these, beam centring, monitoring the LN_2 levels, N_2 gas pressure, and changing the LN_2 tanks etc.

25. When the equipment is "down" due to technical issues, all sessions will be scheduled to a later date, following the same order as before. However, if the users are not available on these dates, they can change their sessions to a later date, or swap their sessions with other users.

26. For efficient usage of the resource, cancelling a session halfway through is not encouraged, as it forces the facility to accommodate other users on very short notice.

Specific Rules for Titan Krios Usage

27. Users applying for time on Titan Krios will need to download the Krios application form and upload the completed form via FORM8.

28. Applications are to be evaluated by an evaluating committee and given time based on scientific merit. Users need to show in the proposal that suitable Cryo-EM samples/grids have been produced for data collection by including 2D classes in the proposal.

29. Once users have been awarded time, users may email the EM staff (emicroscope@ntu.edu.sg) to schedule time on Titan Krios. As of now, the EM staff is helping to set up the automated data collection on the Titan Krios.

30. Data collection on the Krios will be scheduled in 24-hour increments. With the exception of data collected using the phase plate, users are recommended to use 48 hours per session. Longer sessions could be granted on a case-by-case basis. Each Krios will have a cryo-cycle every two to three weeks.

31. Krios users have to complete the back up of all data latest at 3pm on the last day of data collection. Users must start the script to transfer and delete data remotely at the beginning of the session, and not wait until the end of the session to do so.

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