

Dear CryoEM User Group,

Recognizing the changes in instrumentation in our facility, as well as the substantial advances in knowledge and experience among the UTSW CryoEM user group over the past several years, the CryoEM Facility (CEMF) Internal Advisory Committee has been meeting over the past several months to draft a new set of signup/usage policies for our microscopes. Our focus to date has been on the two Titan Krios instruments, the original one on north campus and the new one on south campus, which should be operational in late December.

The goals of these rule changes are:

- Increase and ease access to the two Titan Krios microscopes to enable science broadly on campus
- Shorten the waiting time for Krios sessions
- Give PIs greater flexibility in booking time
- Promote data collection through the SBL for labs without trained users, as well as labs with trained users should they so choose
- All while ensuring a fair distribution of time among the UTSW labs—large and small, across the spectrum of expertise

Before working on finer details, the committee wishes to solicit your feedback on the general framework of the policies below. Please send your comments/criticisms/suggestions to me by next Monday (11/9). These will be discussed on 11/9 at the next IAC meeting, and the policies revised accordingly. While it is unlikely that the IAC will be able to incorporate every comment, our goal is to produce policies that will work optimally for the entire community. **So your input is essential to this process.**

1. There will no longer be a tiered system of user groups (i.e. novice, expert 1,2); all groups performing single particle cryoEM will be governed by the same policies.
2. It will no longer be necessary to write a proposal to obtain Krios time
3. To ensure an optimal and fair distribution of time between different groups, we propose two parallel booking queues:
 - A. One queue, allotted the majority of total time (~70%) “regular data collection”, will give equal access to all groups on campus (analogous to the US government, this is the Senate queue). In this queue, each lab will be able to sign up for 48 hours of total Krios time, as either one 48 hour session or two 24 hour sessions. Only one such 48 hour slot can be booked by any group at any time. There is no cap on the total amount of Krios time any group can use per year through this queue. We recognize that this queue benefits smaller groups with fewer samples at the expense of larger groups with more samples.
 - B. A second queue (analogous to the House of Representatives), allotted ~20% of total time (the remaining 10% time addressed in point 4 below), will be a “dynamic priority” system analogous to that used by the PNCC and also by the

SBL for the past 20 years to allocate time on our in-house and synchrotron x-ray sources. Its goal will be to ensure that the highest priority data are acquired with the greatest urgency, with consideration given to group size, project numbers, and previous time allocated through this mechanism. Total yearly time in this queue will be monitored to prevent any group from unfairly dominating it. The dynamic queue will be managed and time allocated through weekly/biweekly meetings of CEMF and SBL administration. This queue should rebalance time between large and small groups and provide rapid access, flexibility, and speed. The amount of priority days any lab needs can be adjusted periodically and is not set in stone. This queue will be transparent and public, along with the log of past sessions booked through it.

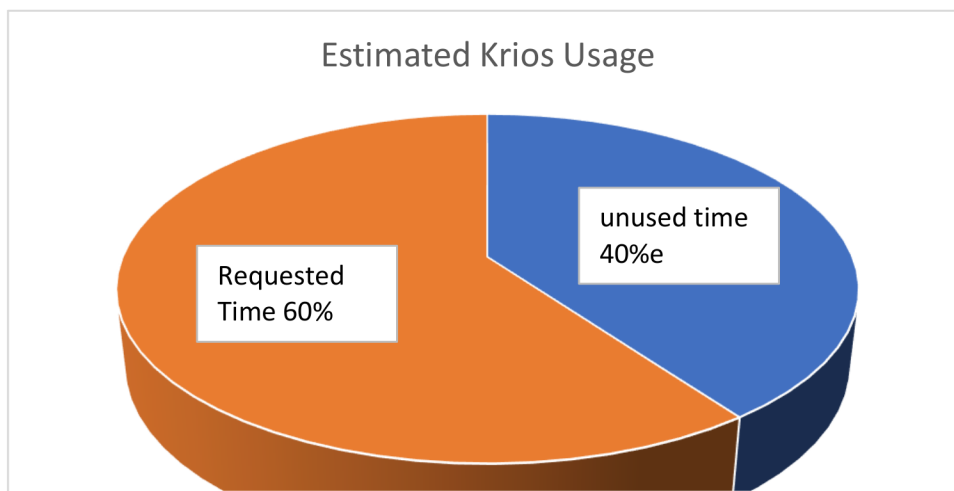
4. Every other Sunday on each Krios will be a "Flex" day. This day will be given to any user who lost time on the Krios due to mechanical failure or other unforeseen downtime. If there have been no issues in the past week this day will revert to a normal "dynamic priority" day. Users that have lost a session where no Flex day is available may be given additional priority to book the dynamic queue.
5. Independent of the Krios sign-up, and analogous to the "regular data collection," each lab can also sign up for 2 Arctica sessions, (screening or data collection) at any time. Arctica/Glacios data collection sessions will typically be overnight, allowing for more grid screening during the day. The maximum time for Arctica/Glacios data acquisition will be 24 hours.
6. The SBL will no longer be a client of the CEMF for data collection sessions. All time will be allocated and accounted to individual groups based on the queues described above. The SBL will collect data for any lab that desires it. The booking will be made by the client lab and billed directly to that lab. The SBL will then invoice the client lab for its services. For SBL-assisted screening, the SBL will be billed by CEMF and the SBL will invoice their users for these charges.
7. Each lab can book up to five sessions for samples that have been cryo-FIB milled, with a maximum of two sessions in any one calendar week over all 300kV instruments. Each lab can book no more than two tomography sessions (excluding 24hr grabs) over all 300kV instruments for non-FIB milled samples, these bookings deduct from the maximum allotted time. Single Particle/hybrid projects are still capped at 48 hours total across all 300kV instruments for all labs and deduct from the maximum allotted time. The IAC acknowledges special circumstances for some projects involving thicker samples which require substantially more data to achieve adequate SNR. For these cases, requests for additional time may be submitted to the IAC in written form for review on a per-project basis. The IAC reserves the right to amend these policies in the future as facility usage changes.
8. Each lab can book a maximum of three 24-hour sessions at any given time. These bookings do not count against the maximum one can book on the TEMs. Time available within 48-hours of the current time can be booked regardless of how much time a given

lab has already booked (48-hour grab rule). 48-hour grabs aside, no more than 48 hours of consecutive time can be booked by any one group.

9. For those who do not wish to have their data collected by the SBL there will be no limit to the number of trained users any group may have. Training will consist broadly of three tiers. Tier 1 will involve basic operation, safety, and data screening/sample evaluation; we anticipate it will require 3 days of training. Tier 2 will extend to high resolution data collection and will require an additional 4-5 days of training. Users will start on Tier 1, and when their sample is good enough for data collection, they will have the opportunity to progress to Tier 2. Users who have not had a session for several months (at the facility manager's discretion) may need additional training before using instruments again. Tier 3 will be a small number of superusers who will be trained to load samples and perform other high-level tasks. Only superusers will be allowed to load/unload grids from the instruments. This training system will allow users to start screening their samples faster and ensure that most preliminary training is done on the Arctica/Glacios thereby freeing up the Krios(s) for data collection. It will allow tier 1 users to be on the microscopes earlier and more frequently, affording them greater familiarity with the instruments and important feedback about their samples, which will allow them to make good judgements about the potential for high resolution data collection.
10. These policies will be frequently adapted as technology changes. There will be a community meeting several months after the initial adoption of these policies to assess them and make changes where necessary.

These policies are written with the expectation that UTSW cryoEM labs will work together considerately and book only the Krios time they require. The frequent meetings of the CEMF and SBL members described in point 3B above will ensure that time is not abused. We note that according to our recent poll of anticipated cryoEM time needs in the community for the next 6 months, the two Krios instruments should provide more than enough total time to accommodate everyone's needs. Results of the initial survey are below:

Total anticipated Krios days: 233 or 116.5/Krios (vs ~168 available per 6 months)



Here is a table of what the Krios schedule may look like with Krios 1 on top, and Krios 2 below. Cryocycling (CC) would be every other Monday and alternate between Krios 1 and Krios 2.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Training /CC or Training/ Regular Data collection	Regular Data collection	Regular Data collection	Dynamic Priority Data collection	Dynamic Priority Data collection	Regular Data collection	Regular Data collection
Regular Data collection or Regular Data collection/CC	Regular Data collection	Dynamic Priority Data collection	Regular Data collection	Regular Data Collection	Regular Data collection	Flex

We believe that this new policy framework can achieve the goals stated above, following revisions based on community feedback and suggestions, and with additional details filled in. These policies will not take effect until after the committee has reviewed and revised based on your feedback.

Best,

-Daniel (on behalf of the entire IAC)