

LCLS UEC Meeting June 30th 2023

Present: M. Mitrano, A. Marinelli, C. Knotts, D. Rolles, M. Dunne, E. Biasin, G. Doumy, G. J. Williams, M. Trigo, N. Powers-Riggs, P. Jones, S. Teitelbaum, T. Gorkhover, U. Bergmann, Y. Cao.

Director's Updates

M. Dunne described ongoing progress in the commissioning of LCLS-II. There has been continuous progress in the last month: the cryoplat operations are stable and the new linac operated at 93 kHz (10.7 μ s pulse spacing) on 06/07. The next steps of this plan include a Cu linac beam-based alignment in early July, the tuning of the superconducting RF (SCRF) linac into the undulators in August, and the first light from the SCRF linac by September 1st. Achieving first light from the linac means the start of a new transition phase from commissioning to operations. At that stage, there will be performance ramping and commissioning of TMO and ChemRIXS for the remainder of the year.

The Run 21 restart after a long break includes the trialing of new scheduling approaches. One of the most relevant additions to the schedules are some open slots to accommodate contingency shifts for experiments that need them, and rapid access shifts. There will be a deeper pre-planning of user experiments, including safety assessments. Further, the facility will seek to minimize setup changes. One new feature for the LCLS operation will be the testing of self-supported user experiments.

The open slots in the schedule will be allocated on a case-by-case basis. There will be consultation with the user groups of upcoming or closing experiments, however there might also be the possibility of fielding some lower-tier PRP proposals. One additional element into this picture is that with the SCRF linac there will be the possibility of multiplexing, and not all multiplexing slots may be populated at the beginning of the run. This adds additional flexibility into the picture. Multiplexing arises from the fact that the Cu- and the SCRF linacs will operate independent from each other to first order, as well as the existing options to split the hard X-ray beam.

Scaling the Proposal Review Panel to the LCLS-II era

The Run 22 call for proposals yielded 177 separate projects with a general increase in CSD and HCM. The proposal pool is roughly split as: 13% AMO, 28% CSD, 10% BIO-C, 2% BIO-S, 28% HCM, 15% MEC, 4% M&I.

After the evaluation, the PRP provided some feedback. There have been significant problems in the CSD and HCM subpanels with respect to workload, missing reviewers/reports, timezones. This led to a loss of confidence in the initial results and to significant work after the meeting by the PRP panel to deliver an acceptable prioritization.

In response to these issues, the LCLS management is implementing the following changes:

1. Submission of the PRP reviewer reports at least 1 week prior to the meeting. This allows to fill reviewers' gaps and address COIs, to provide a preliminary ranking to guide the panel discussion, and for the Chair and Secretary to meet and address issues ahead of the meeting.
2. Cap the maximum number of proposals assigned to a panel.
3. Split panels when needed (CSD in condensed phase and gas phase, HCM in quantum and conventional). Preliminary analysis shows that this would not bias the pro-rata from previous PRPs.
4. Better hybrid schedule OR full in-person meeting.
5. Remove cross-panels' meetings and take independent assessments.

In the following discussion, the UEC elaborates some additional points.

- To streamline the proposal evaluation, there is the need to better convey to the users how they should select their PRP subpanel/area of interest. By educating the users (especially new users), one minimizes the chances of mismatched proposals at the evaluation stage. A natural way of implementing this recommendation is to provide guidance when the users contact the LCLS staff during the proposal preparation.

- There is an aspect of ‘territoriality’ in the PRP due to the pro-rata allocation policy, which directly discourages interdisciplinary research. One consequence is that it is difficult to move one proposal from one panel to another more scientifically appropriate, especially for proposals falling into an interdisciplinary category as M&I. One way to address the issue would be to attribute half-pro rata to each panel to alleviate concerns regarding interdisciplinary proposals. This will be trialed.
- How did the PRP rank the data collection proposals and how can we ensure appropriate evaluation? The PRP ranks data collection proposals together with regular proposals but accounting for the more limited scope. In Run 22, data collection proposal accounted for 15-16 proposals out of 177. There is the need to further educate the user base on the structure of the data collection proposals, as well as to provide more accurate evaluation directions to the PRP to ensure consistency. The submission interface should reflect the shorter format. Finally, the shorter format is adequate for completing a previous beamtime, but might be challenging for the evaluation of newly introduced ideas. It was noted that it is still an option to submit a longer narrative for such proposals; the short form is just an option for those proposals that need it.
- On a similar note, when the PRP had to evaluate proposals connected to previous work, there were issues in accessing past proposals. This is partly due to the limitations of the digital interface used by the PRP, but also to the need to restrict the number of conflicts of interest. One way around this issue, would be to better highlight the need to flag previous proposal numbers and to enforce the submission of progress reports which explain the relationship of previous experiments with the new ones being evaluated.
- In the long run, the UEC felt that in-person PRP is the best way to get the required level of commitment.

Users’ meeting updates

The plenary speaker is confirmed, Alke Meents from DESY. Workshop invitations from the user office are currently going out to workshop speakers, as these are confirmed by organizers. We are proceeding with tutorial workshops on the Sunday, and, once the portal is open for bookings, we will encourage students to sign up for those as early as possible, since those may require extra paperwork. The workshop schedule is complete and will be published soon.