

## LCLS Call for Protein Crystal Screening Proposals

**Closing Date: November 11, 2014**

**SUBMIT NEW PROTEIN CRYSTAL SCREENING PROPOSALS BY 4 pm PACIFIC on November 11, 2014.**

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The LCLS Protein Crystal Screening (PCS) program aims to enable increased access to LCLS beamtime for biological structure determination by making use of short 6-hour runs to screen the quality of different sample preparations or potentially collect a full data set under good running conditions. To enable measurements within such a short time frame and maximize efficiency and the chances of success, these studies must be carried out with limited flexibility to minimize the time impact of setup changes. The following configurations are expected to be supported for PCS in this current call for proposals: gas dynamic virtual nozzle (GDVN) liquid jet system and fixed targets in vacuum at CXI. Other liquid jet systems supplied by user groups compatible with the basic CXI system will also be considered if the schedule allows it and at the discretion of the LCLS facility. Furthermore, atmospheric pressure measurements on fixed targets using a goniometer system at XPP are expected to be available. Measurements using other demonstrated atmospheric pressure sample delivery techniques can be considered if the schedule allows it and at the discretion of the LCLS facility. Schedule constraints are unpredictable and no guarantees can be made that any of the mentioned experimental setups will be available for PCS in any given run.

LCLS is seeking proposals for PCS beamtime to be awarded during LCLS Run 11, expected to be between March and July 2015.

### PCS at CXI

PCS experiments at CXI are intended to be carried out using the standard CXI configurations, either using the 1 $\mu$ m or 100nm focus depending on scheduling constraints and at the discretion of the LCLS facility. User-supplied sample delivery systems or modifications to the existing system can be allowable only if they are compatible with the existing systems and can be exchanged with the other systems used for PCS beamtime within a time frame compatible with 6-hour runs and rapid turnaround between groups. Decisions on using alternative sample delivery systems will be entirely at the discretion of the LCLS facility.

### PCS at XPP

PCS experiments at atmospheric pressure are expected to be available. To date, the home of such experiments has been the XPP instrument with a goniometer system allowing scanning of fixed-mounted crystals. The system can also be modified in principle for use of a variety of atmospheric pressure sample delivery systems. The availability of all these systems will depend on scheduling constraints and be entirely at the discretion of the LCLS facility.

## Other Experimental Geometries or Capabilities

Time-resolved studies and spectroscopy are currently not within the possible scope of PCS beam time.

## Proposal Review and Beamtime Award

These PCS proposals will be reviewed by the PRP BIO-C panel separately from the regular proposals. It is desirable to shorten the period between PCS proposal submission and beam time allocation to maximize flexibility and the ability to be reactive to novel samples or ideas. LCLS will aim to pre-allocate blocks of beamtime either on CXI or XPP based on the overall demand. The expected amount of beamtime is on the order of 2 blocks of 10x6 hours shifts in every LCLS run. All PCS proposals will get a numerical rank from the BIO-C panel. A suitable number of proposals will be awarded beam time by the LCLS facility based on the advice of the Proposal Review Panel. Successful proposals will be scheduled according to sample readiness and technical feasibility evaluation by LCLS staff scientists. A minimum 2 month notice will be given to the selected user groups to allow for appropriate preparation. Depending on the run schedule, alternative setups might be scheduled separately or not be possible at all.

## Overlap with Regular LCLS Proposals

There is no restriction with regards to possible overlap or redundancy with regular LCLS proposals. Submission of PCS proposals similar or related to regular LCLS proposals are encouraged and will not adversely impact the rankings of either types of proposals. Regular LCLS proposals that do not receive beamtime may be considered for PCS if deemed suitable.

## Proposal Format

PCS proposals follow a similar format as regular proposals but must be submitted separately. If the PCS proposal is related to one or more regular LCLS proposals that have been submitted or already received beam time, state this in the proposal. PCS proposals are limited to a two-page PDF, including references, figures, and sufficient information to evaluate the impact, originality, need for LCLS, scientific risk, prior results, as well as technical feasibility. LCLS PCS proposals should be submitted through the [User Portal](#).

Researchers interested in submitting PCS Proposals should contact LCLS scientist Sébastien Boutet ([sboutet@SLAC.Stanford.EDU](mailto:sboutet@SLAC.Stanford.EDU)).

The proposal process and guidelines are described at the LCLS website: <http://www-ssrl.slac.stanford.edu/lcls/users/proposals.html#prop-pcs>.