

Advanced Photon Source

User Policies and Procedures

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Beam Time Access Framework

Changes made in this revision:

- Consolidates APS Procedure # 3.1.115, rev. 0, “Use of the APS Beam Time Access System” with parts of Procedure # 3.1.101, rev. 0, “APS User Administrative Policies and Procedures,” incorporating details by reference to new policies on individual access modes.
- Renamed, updated, and elaborated.

Comments for future revisions:

This document shares four sections (Proposals and Beam Time Requests, Alternative Experimental Modes, User Responsibilities, Definitions) with the policies on individual beam time access modes cited in [Section 3.1](#) of this policy. (The information is duplicated so the individual policies can stand alone for ease of reference by users.) Changes to these sections should also be made in the other policies.

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Beam Time Access Framework

POLICY

1 PURPOSE

The objective of this policy is to provide maximum opportunities for productive use of the APS by qualified researchers through a competitive, proposal-driven, peer-reviewed system. The principle underlying this system is peer review that is fair, clear, expedient, and sensitive to the needs of users.

2 SCOPE

This policy applies to all users of APS beam time and to all types of beam time.

3 POLICY

3.1 Access Modes

Mechanisms of access exist to accommodate beam time needs ranging from a few hours on short notice to extended visits over a period of years. Proposals and beam time requests are required for each access mode, but the review and allocation process differs for each. The access modes, which are described in the indicated policies, are as follows:

- General User (macromolecular crystallography or all other science) ([Procedure # 3.1.46](#))
 - Standard
 - Rapid access
 - Project
- Partner User¹ ([Procedure # 3.1.47](#))
- Collaborative Access and Collaborative Development Team (CAT/CDT) member ([Procedure # 3.1.48](#))
- CAT/CDT staff member ([Procedure # 3.1.48](#))
- APS staff member ([Procedure # 3.1.49](#))
- Industrial measurement ([Procedure # 3.1.50](#))
- Director's discretionary time ([Procedure # 3.1.51](#)).

¹ In the context of DOE reporting, the term "partner user" encompasses two types of access: partnerships of limited scope ("Partner Users," as defined in [Partner User Beam Time Access, Procedure # 3.1.47](#)) and partnerships of more extensive scope (Collaborative Access and Collaborative Development Teams, as defined in [Development of a New Beamline or Significant New Capability/Instrument on an APS-Operated Beamline, Procedure # 3.1.42](#)).

3.2 Conditions

Assignment of beam time is governed by the following four requirements:

1. All beam time use is subject to scientific review.
2. All beam time access is based on proposals or beam time documents created in the Beam Time Access System (including beam time used for beamline commissioning and maintenance).
3. Each request for time in a specific run cycle (i.e., beam time request), must be made against a proposal or beam time document through the Beam Time Access System.
4. All available beam time must be associated with specific beam time requests through the Beamtime Scheduling System.

3.3 Calls for Proposals

In general, requests for access are solicited, reviewed, and allocated three times a year, in conjunction with the three run cycles. Two modes—General User rapid access and industrial measurement—permit access at any time, as long as beam time is available.

3.4 Proposals and Beam Time Requests

Time is requested through the APS Web-based Beam Time Access System. This on-line system enables the APS and beamline management to collect and document beam-time usage and provides the basis for DOE-mandated usage reports.

In this system, a *proposal* describes the work to be performed, and a *beam time request* (BTR) against the proposal identifies where and when the user wants to do that work. The proposal and the first beam time request are created together. For subsequent visits for the same work, a new request must be created against the original proposal; thus, a proposal can have multiple beam time requests.

The Beam Time Access System (in combination with the Beamtime Scheduling System) associates each beam usage with a specific

- Proposal
- Beam time request (BTR)
- Beam time attribute set (e.g., proprietary/nonproprietary, General User, rapid access, beamline commissioning/start-up, National User Facility, etc.)
- Experiment Safety Assessment Form (ESAF).

3.5 Reviews

The APS maintains several review bodies as part of the beam time access program, as described in the individual policies:

- Reviewer pool, Proposal Review Panel, and Beamtime Allocation Committee for macromolecular crystallography

- Proposal Review Panels and Beamtime Allocation Committee for all other science
- Scientific Advisory Committee Subcommittee for Partner User Proposals and Project Proposals.

3.6 Available Time

Available beam time is calculated in each cycle for each independently operating beamline. Details of availability are given in the policy for each mode. Commitments for each access mode are made by agreement between the beamline management and the APS Director for X-ray Science.

The standard unit of beam time for calculating available time is an 8-hour shift, though smaller units are sometimes used in scheduling. The calculations begin with the “total available user shifts” for the cycle, as determined by the machine operation schedule. A standard operating allowance is deducted from this figure, e.g., to allow for issues around startup. The result is termed the “baseline available shifts.” All calculations of beam time commitment are made against the baseline available shifts. The amount of time available for standard General User beam time requests is the amount remaining after other commitments have been applied.

The following limits apply:

- Total Partner User time on a given line is limited to 30% of baseline available shifts. The total General User commitment is reduced by the amount of the Partner User commitment. For example, suppose a line that would normally have 80% General User time commits 30% of the baseline available shifts to a Partner User; in this case, the time available to General Users would be 50% of the baseline available shifts.
- Each APS-operated beamline has a cap on the total time that can be assigned to project proposals.

The following beam time commitments, where applicable, are applied for each beamline before the Beamtime Allocation Committee (BAC) meeting at which decisions are made on allocation of standard General User requests:

1. Staff time (typically 20% on APS-operated lines)
2. Partner user commitments (only on APS operated lines)
3. General User commitment (typically 80% on APS-operated lines, reduced by the amount of Partner User commitment)
 - a. Rapid-access commitment (time set aside for General User rapid access requests and industrial measurement)
 - b. Project status General User proposals
 - c. Director’s discretionary beamtime
 - d. Commitment for schools (e.g., X-ray and Neutron School)
 - e. Standard General User requests (allocated by BAC; termed “BAC shifts”).
 - i. Instrument percentages (optional; if specified, these figures are taken into account so far as possible when assigning proposals)

3.7 Beam Time Allocation

The allocation mechanism is different for each mode; see the appropriate policy.

3.8 Scheduling

The beamline on which the request was allocated is responsible for scheduling and coordinating the visit. Visits must be scheduled in the Beamtime Scheduling System. Beamlines should make every effort to schedule awarded General User proposals in the next run. However, if no suitable time can be agreed upon with the general user, the beamline may schedule the user in the following run. Upon mutual agreement between the beamline and the user, awarded time may be scheduled in a later cycle.

3.9 Alternative Experimental Modes

Some experiments are carried out by “remote users,” that is, users located elsewhere who control the beamline through computer access. Some beamlines accommodate “mail-in users”: the users send samples by mail and local staff collect the data on the users’ behalf. Although mail-in and remote users are subject to slightly different administrative requirements (see [Site Access by Users and Visitors, Procedure # 3.1.43](#)), for the purposes of beam time allocation and reporting, the present policy holds just as it does for conventional experimental visits.

3.10 User Responsibilities

- All users must complete appropriate training (at a minimum, all core APS user training requirements and sector-specific training) and have a valid User Agreement in place between the APS and the institution that sponsors the research (see [Site Access by Users and Visitors, Procedure # 3.1.43](#), and [User Training, Procedure # 3.1.103](#)). Users who damage equipment owned by a CAT or APS after receiving appropriate training in its use will be held liable for the damage, according to the provisions of their institutional user agreements.
- Each user must also submit (in a timely fashion) an Experiment Safety Assessment Form for each experiment to be conducted (see [APS Experiment Safety Reviews, Procedure # 3.1.25](#)).
- When work performed at the APS by a user is submitted for publication, the author must include appropriate acknowledgment of the APS and the beamline in the manuscript (for the text of the required acknowledgment, see the home page of the APS publication database, <http://www.aps.anl.gov/News/Publications/>).
- Users are required to submit full citations of all publications resulting from their work to the APS User Office for inclusion in the APS publications database and to provide this information to the host beamline (see [Reporting Publications to the APS, Procedure # 3.1.44](#)). Failure to submit the required publication citations may result in denial of requests for beam time in subsequent proposals.

4 DEFINITIONS

Beamline: All instrumentation and facilities that extend from the source in the storage ring to an experiment station.

Beam Time Access System: Web-based proposal submission and management system used for requesting all types of beam time.

Beam Time Allocation Committees (BACs): Committees that determine which beamlines will host which beam time requests and how much time each request will receive.

Beam time document: A very simple “proposal” used to document experiments by APS staff or CAT members or staff.

Beam time request (BTR): A web form (and the resulting electronic record) associated with a specific proposal, used to request beam time during a particular cycle on a particular beamline. This form is used both when the proposal is initially submitted and for subsequent cycles as long as the proposal is active.

Beamtime Scheduling System: Web-based system used by beamline staff to schedule all APS beam time. A specific beam time request is associated with each unit of beam time.

Collaborative Access Team (CAT): The Partner User arrangement of most extensive scope, in which collaborating members construct a facility and operate it on a long-term basis.

Collaborative Development Team (CDT): A Partner User arrangement of intermediate scope, in which collaborating members either construct or participate in the construction of a facility that, in the long term, is operated by APS.

Cycle: One of three periods of beam time access each year, referring generally to all the phases of submission, review, allocation, and scheduling. Also called “run” or “scheduling period” when referring to the dates of actual beam availability.

Director’s discretionary time: Mechanism to allow access in cases where the usual review process cannot be followed because pertinent details cannot be released, e.g., certain proprietary, industrial, or classified projects.

General User (GU): An investigator who applies for beam time through the APS peer-review proposal process for General User time.

General User (beam) time: The standard access mode for external experimenters. All beam time in this mode is allocated through the APS General User proposal process.

Industrial measurement: A mechanism that permits prompt response for industrially important measurements requiring the special capabilities of the APS.

Mail-in service/users: An experimental mode in which users send samples by mail and local staff collect the data on the users’ behalf.

Partner User (PU): In general (and for DOE reporting), all external users and user groups that enter into an agreement with the APS to provide new facilities or capabilities. Also used more restrictively to refer to partnerships of limited scope for which time is requested through the Beam Time Access System.

Project status: Designation given to a General User proposal that has been approved for guaranteed access over several cycles on a specific beamline or beamlines.

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Proposal: Electronic document comprising the description of the proposed research and all associated beam time requests (BTRs). Created in the Beam Time Access System.

Proposal spokesperson: Person identified on the proposal submission form as the primary point of contact for communication about the proposal.

Proposal Review Panels (PRPs): Peer-review groups, organized by technique or scientific discipline, that evaluate the scientific merit and technical feasibility of proposals and provide a rating for each.

Rapid access: Mechanism for short-turnaround assignment of beam time for urgent needs that arise between the formal review and allocation cycles.

Remote access/users: Experimental mode in which a researcher uses remote computer access to conduct experimental work at the APS.

Scientific Advisory Committee (SAC): High-level advisory body to the Director of the APS.

5 ASSISTANCE

The initial point of contact for questions about this policy is the APS User Program Manager.

6 REVISIONS

The point of contact for changes to this policy is the APS User Program Manager. Changes can be made in response to suggestions from any stake holder in user activities.

Modifications of APS Policies and Procedures shall be managed according to Managing APS Facility Procedures ([Procedure # 3.1.05](#)). The policy and procedure owners will work with the APS Procedure Administrators to keep policies/procedures current in the APS electronic document system (ICMS).

The current revisions of any policy/procedure will be available through the APS electronic document system (ICMS); users of a policy/procedure should ensure that they are using the current version.

7 RELATED POLICIES

- Parent policy: User Access and Administration Framework ([Procedure # 3.1.101](#))
- Development of a New Beamline or Significant New Capability/Instrument on an APS-Operated Beamline ([Procedure # 3.1.42](#))
- Establishment of Collaborative Access Teams at the Advanced Photon Source (APS document ([APS_1271747](#)))