

Obtaining General User Beamtime

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General User Access to NSLS & APS

All NSLS and APS beamlines give at least 25% of the beamtime for General Users, which is open access to any researcher:

- Beamtime allocated by peer-review and open competition.
- Designed to bring in new people, keep access open to all.
- General User Beamtime can go to “local experts”
- Many beamlines give more than 50% General User time

The NSLS has 3 run cycles per year:

- 1 January to April
- 2 May to August
- 3 September to December

The APS has 3 run cycles per year:

- 1 Feb 1 to Apr 30
- 2 Jun 1 to Aug 30
- 3 Oct 1 to Dec 20

Proposals are due around the middle of the preceding run.

See the calendars at

- <https://pass.nsls.bnl.gov/deadlines.asp>
- http://www.aps.anl.gov/Users/Calendars/GUP_Calendar.htm

XAFS Beamlines at the NSLS

Beamline	% GUP	Program Notes
X3B	> 25%	life sciences, Case Western PRT
X10C	> 25%	ExxonMobile PRT
X11A&B	= 25%	general purpose XAS
X15B	> 25%	tender X-ray XAS
X18A&B	= 50%	time resolved XAS and XRD, SCC
X19A	= 50%	tender X-ray XAS, SCC
X23A2	> 25%	general purpose XAS, industrial focus, NIST PRT
X26A	> 25%	μ probe, earth & environmental sciences, CARS
X27A	> 50%	μ probe, E&ES + life science
U4B	= 60%	soft X-ray XMCD, reflectivity
U7A	> 25%	soft X-ray XAS and XPS, NIST PRT

PRT Participating Research Team

SCC Synchrotron Catalysis Consortium: <http://www.yu.edu/scc/>

CARS Consortium for Advanced Radiation Sources: <http://cars9.uchicago.edu/>

XAFS Beamlines at the APS

Beamline	% GUP	% XAFS	Notes
2-ID (XOR)	> 50%	1/4	x-ray microprobe, XANES
4-ID (XOR)	> 50%	1/2	XMCD, magnetic XAFS
5-BM (DNDCAT)	= 25%	1/2	catalysis, enviro
9-BM (XOR)	> 50%	all	can do S and Cl!
10-ID (MRCAT)	= 25%	most	Catalysis, enviro, actinides.
11-ID (XOR)	= 25%	some	time-resolved.
12-BM (XOR)	> 50%	most	Catalysis, enviro, actinides.
13-BM (GSECARS)	> 50%	1/4	geo / enviro
13-ID (GSECARS)	> 50%	1/4	x-ray microprobe, geo / enviro
18-ID (BioCAT)	= 25%	some	biological systems
20-BM (XOR/PNC)	> 50%	all	general purpose XAFS
20-ID (XOR/PNC)	> 50%	most	x-ray microprobe, geo / enviro, time-resolved.

CAT A beamline operated by a Contributing Access Team

XOR A beamline operated by the APS

Other North American Synchrotrons

Information about the user programs at other synchrotrons including available beamlines and instructions for applying for beamtime can be found at:

SSRL Palo Alto, CA (Stanford Univ.) _____ 13 XAS beamlines

<http://www-ssrl.slac.stanford.edu/userresources/index.html>

ALS Berkeley, CA _____ 3 XAS beamlines

<http://alsusweb.lbl.gov/>

CLS Saskatoon, SK, Canada _____ 3 XAS beamlines

<http://www.lightsource.ca/uso/>

CAMD Baton Rouge, LA _____ 1 XAS beamline

<http://www.camd.lsu.edu/forms.htm>

Proposal Contents

The bottom line

Will this experiment result in a publication?

At the APS, the proposals are rated by panels of volunteers who may read 20-30 proposals at a time. (The workload varies by synchrotron, but assume your reader is crazy-busy.)

Key Points for Successful Beamtime Proposals:

- 2-3 pages: **Take the time to make it short.**
- Describe the importance of your science in terms **any** scientist can understand.
- Aim broadly, your proposal will be read by physicists, chemists, biologists, etc....
- Describe your experiment well. Include details of samples to be measured and of experimental setup if non-standard. Account for the time you request.
- Consult with a beamline scientist and/or your collaborators before submitting proposal.

Proposal Writing Hints

- Describe the “Societal Impact” in the Abstract – they love this.
- Describe other measurements that have been made on these samples.
- Be specific and explicit about:
 - Element(s) and edge(s) to be studied
 - Concentrations of elements to be studied.
 - Transmission, fluorescence, multi-element detector
- Give literature references. (Don't attach your CV. Don't attach PDFs of published papers.)
- Say you've taken a training class!
- If you're a student or postdoc:
 - say so.
 - list yourself as Spokesperson, not your advisor.
 - write the proposal yourself, with help from advisor / senior students.
- If you've had some beamtime and “need a bit more time”, include a plot of any data collected so far.
- List a 2nd choice beamline.

APS proposal scoring, lifetime and aging

Proposal Scores 1 (best) to 5 (worst) — like golf!

Proposal Shifts number of 8-hour shifts for next run and up to 2 years (6 cycles)

- Average Score for XAFS Proposals: ≈ 2.2 .
- Proposals that don't get time “age up” by 0.2 each cycle for 2 cycles and recompute each cycle
- Proposals live for up to 2 years or until the allocated shifts are used
- To get beamtime in more than 1 run for a proposal, you make a “Beamtime Request” for time in later cycles - **not a new proposal**
- to continue work, you can copy-and-paste an old proposal to start a “new” proposal

Caution!

The aging systems at NSLS and other synchrotrons work differently. Check each synchrotron's web site for details.

Cost and Funding

Beamtime is free

Non-proprietary beamtime is **free**, although you have to pay for travel and incidental expenses.

In Europe, synchrotron funding often includes travel expenses for users (for example, users from institutions of ESRF member nations get substantial travel support). Travel support programs are much more limited here in the States.

GU proposals are not funding proposals

We understand that everyone applying for beamtime has already convinced a funding agent that their research is interesting and important. Nonetheless, review of a general user proposal for the synchrotron is another hoop you must jump through.

However, the bar is different for a GU proposal. GU reviewers are gatekeepers of **time**, not **money**. GU proposals are much less substantial in scope and much more focused on the immediate issue of the synchrotron measurement.

After you've submitted a proposal

- Most beamlines are oversubscribed - many by $2\times$ to $3\times$.
oversubscription = (requested days) / (available days)
- It may take a run cycle to get beamtime.
- You may get less time than you ask for.



- **DON'T PANIC** – it will become easier.
- Once you are in the system, everyone involved wants you to succeed (i.e. publish!).
- Most of these hints work for getting beamtime at other facilities and for other techniques.