



Call for Proposals: Nuclear Science at LANSCE 2021 Run Cycle

The WNR and Lujan Center call for nuclear science proposals including industry is now open. **Deadline:** Monday, **March 15, 2021**, 5:00 pm (MDT)

The Los Alamos Neutron Science Center (LANSCCE) is issuing a Call for Proposals for Nuclear Science and Radiation Effects at the Weapons Neutron Research (WNR) Facility and Lujan Center for the upcoming run cycle June 16 – December 21, 2021.

The Weapons Neutron Research (WNR) facility and Lujan Center provide neutron and proton beams, as well as detector arrays for basic, applied, radiation effects, and defense-related research. Neutron beams with energies ranging from about 0.1 MeV to more than 600 MeV are produced in Target 4 (an unmoderated tungsten spallation source) using the 800 MeV proton beam from the LANSCE Linac. In the Target-2 area (Blue Room) samples can be exposed to the direct proton beam with energies up to 800 MeV. At Target 1 cold to epithermal neutrons (1 meV - 500 KeV) are produced. Information about the Nuclear Science instruments is available at <https://lansce.lanl.gov/facilities/wnr/index.php>.

Timeline

The deadline for proposal submission is Monday, March 15, 2021 at 5:00pm (MDT). All non-proprietary proposals will be reviewed by the Nuclear Program Advisory Committee (NPAC) for scientific merit. The NPAC will meet the week of April 5, 2021. The proposers are not expected to give a presentation, but should appoint a point of contact who is available should questions arise during the review process. Beam time allocation for proprietary full cost recovery experiments on any beamline is determined on a first come, first served basis after receiving a setup fee and will not be reviewed by the NPAC. Proposals for proprietary experiments are accepted at all times.

Instruments/Flight Paths Available in the Current Call for Proposals

Target 1 (Cold, Thermal, and Epithermal Neutron Source: 1 meV-500 keV):

Flight Path	Description	Instrument Scientist	Email	Telephone
Flight Path 5	General purpose	Alex Long	alexlong@lanl.gov	505-667-3600
Flight Path 6	General purpose	Alex Long	alexlong@lanl.gov	505-667-3600
Flight Path 12	General purpose	Jack Winkelbauer	winkelba@lanl.gov	505-606-0023
Flight Path 13	Device for Indirect Capture Experiments on Radionuclides (DICER). Neutron total cross sections of radioactive nuclides	Paul Koehler	koehler@lanl.gov	505-606-0743



Flight Path	Description	Instrument Scientist	Email	Telephone
Flight Path 14:	Detector for Advanced Neutron Capture Experiments (DANCE). Neutron capture cross sections on small samples of stable, rare, or radioactive nuclides and measurements of gamma-ray emission spectra	John Ullmann	ullmann@lanl.gov	505- 667-2517

Target 4 (High-Energy Neutron Source: 1-600 MeV):

Flight Path	Description	Instrument Scientist	Email	Telephone
Flight Path 90L	Fission, Time-Projection Chamber (TPC)	Chris Prokop	cprokop@lanl.gov	505-667-6810
Flight Path 15L	20 m and 90 m stations, neutron outputs, Chi-Nu	Keegan Kelly	kkelly@lanl.gov	505-665-5118
Flight Path 15R	General purpose, detector testing, LENZ(n,z)	Hye Young Lee	hylee@lanl.gov	505-665-7252
Flight Path 30L	ICE House, single event effects, semiconductor testing and other measurements	Steve Wender	wender@lanl.gov	505-667-1344
Flight Path 30R	ICE II, single event effects, semiconductor testing and other measurements	Steve Wender	wender@lanl.gov	505-667-1344
Flight Path 60R	High Energy Neutron Radiography	Nik Fotiadis	fotia@lanl.gov	505-665-0589
East Port	NOT AVAILABLE FOR EXPERIMENTAL WORK IN 2021 Neutron activation, neutron irradiation	Michael Mocko	mmocko@lanl.gov	505 667-0628

Target 2 (Blue Room) Proton Irradiations / Sole Use:

Radiation effects, proton-induced reaction cross sections, Lead Slowing-Down Spectrometer, Proton Storage Ring beam, Linac beam including beam energies other than 800 MeV, sole use. Instrument Scientist: Steve Wender, wender@lanl.gov, 505-667-1344.

Proposal Submission and Selection

Proposal Submission and Required Documents

All proposals must be submitted using the LANSCCE Experiment Management System (LEMS): <https://lems.lanl.gov/login> and include a proposal document. Where appropriate, the template should be downloaded when you log into LEMS. Please note that the proposal web-based form has not changed from last year. Please read it carefully and complete all sections.



The system requires users to create an account and completion of a web-based form and upload of a proposal document. The proposal document should be formatted with fonts no smaller than 12 pt with a maximum of 5 text pages plus figures and appendices, and should contain the following technical information:

1. Research goals including background needed to place your proposal in the proper context, and the significance of the proposed work.
2. Experimental details sufficient for the PAC to determine the feasibility of your experiment: what you want to measure, estimates of signal and background including any assumptions, and a justification for time request including any contingencies.
3. If you require help in the form of specialized equipment (including user equipment shipped to LANL for the experiment), personnel expertise, or facility operations, discuss these needs.

When submitting your requested beam days make your request on the assumption that WNR intends to run at approximately 4 μA at 100 pulses per second and the Lujan Center nominally operates at 100 μA at 20 pulses per second.

If your proposal requires specialized facility operations (e.g. Target 2 / sole use or non-standard operation of the Proton Storage Ring), be aware that the proposal will face additional scrutiny due to potential consequences for other experiments.

Proposers should expect conversations regarding sample disposition and other safety related issues as part of the proposed experiment.

Please, contact the User Program Office, lansce-user-office@lanl.gov or 505-665-9967 for assistance with the proposal process or the instrument scientist for technical questions.

Note: The Department of Energy (DOE) requires users of any LANSCCE Facility to have a User Agreement (UA) in place between Los Alamos National Laboratory and the user's home institution **before the experiment can be run**. The description and list of existing UA can be found at <https://lansce.lanl.gov/users/become-a-user/user-agreements.php>. If your institution does not have a valid UA in place, please contact the User Office at lansce-user-office@lanl.gov to start the process as early as possible.

Important:

- All visiting US citizen users need to register the visit three weeks before the scheduled experiment. Non-US citizens must register at least 60 days before their visit.
- DOE requires that all personnel associated with each experiment (including citizenship) are listed in the proposal.
- DOE requires additional information to grant non-US citizens access to Los Alamos National Laboratory (LANL). Foreign national visitors must have an approved visit request, present a valid passport and documentation of US legal status and work authorizations. (<https://www.lanl.gov/community/visitors/badging/index.php>).



Program Advisory Committee Review

Proposals will be sent for an initial quality screening. Proposals that are complete will then be sent to their Instrument Scientist (IS) for a feasibility review. Those that are incomplete, or that did not follow the formatting guidelines, will not be reviewed and will not be recommended for beam time.

Proposals and their accompanying feasibility reviews will be sent to the Nuclear Program Advisory Committee (NPAC). The PAC is an advisory committee to the LANSCE User Facility Director (LUFD) that is composed of technical experts in the relevant field. It judges the proposals based upon the criteria stated below.

Submitted proposals will be ranked on the following criteria, listed from most to least important:

1. **The quality of the science or measurement being proposed.** What problem is being addressed? Why are these experiments being proposed?
2. **The impact of the science or measurement being proposed,** to programs, milestones, graduate student work, postdoctoral research, staff development, or other priorities. How will the data be used? (Note that as an NNSA-sponsored facility, NNSA priorities will be weighted more heavily, but proposals from other sponsors are welcome.)
3. **The feasibility and readiness of the proposed experiments.** Are samples and detector systems ready? Have prior experiments or measurements been performed, analyzed, and published? Where appropriate, are pre-experiment calculations complete?
4. **The need for LANSCE resources.** How appropriate are the LANSCE experiment setups? Why can't these experiments be done somewhere else? How much beam time, staff time, etc. will be required to execute these experiments?

The more detailed information, including results from previous experiments or tests, that can be provided, the stronger the proposal will be.

The NPAC will provide a preliminary ranking of proposals along with recommendations for which proposals should not be awarded beam time. The LUFD and representatives from the programs sponsoring experiments at LANSCE will then finalize the rankings. NPAC feedback will be provided for all proposals in a timely manner, no later than the beginning of the LANSCE run cycle.

Proposal Scheduling

Once the LANSCE block schedule for a run cycle is finalized, the Instrument Scientist for each flight path will combine the block schedule with the finalized rankings in order to develop an experimental schedule for each area or beam line. These schedules will be communicated to experiment proposers as soon as possible so that arrangements for the shipment of parts, user travel, etc. can be made. To maximize the efficiency of operations, feasibility, readiness, and



resource usage may be weighted more highly during proposal scheduling than they were during proposal review.

Final scheduling of ranked proposals depends upon the feasibility of fielding the experiment within the constraints of the LANSCCE operating schedule. Because of the complexity of the LANSCCE accelerator and experimental system, the operating schedule typically changes over the course of the run cycle, and thus particular experimental dates cannot be guaranteed.

In the event that proposals which were recommended for beam time are not executed in a given run cycle, those proposals must be resubmitted for a later run cycle. The PAC will note the previous recommendation and accordingly weight them more highly.

Classified Proposal Submission

If you plan to submit a classified proposal, please contact Shea Mosby (smosby@lanl.gov, 505-665-5414) as early as possible to discuss how to do so.

Proprietary Neutron Radiation Effects Proposals

When requesting access to the semiconductor irradiation and testing facilities at the ICE Houses, please specify which flight path is your first choice (ICE House or ICE-II). Note that proprietary users planning full cost recovery experiments *must also submit a proposal*, selecting the "Industry Call" in the LEMS system (though these proposals are not reviewed by the NPAC). For technical questions contact Steve Wender (wender@lanl.gov, 505-667-1344). For questions regarding full cost recovery experiments and for administrative questions regarding contracts for these experiments, please contact Nina Roelofs (nroelofs@lanl.gov, 505-665-9967).

**We look forward to your submissions,
Nuclear Science User Program**