# LaserNetUS Proposal Submissions

## Submission Schedule

| Cycle | Type | Proposal deadline | Cycle begins | Cycle ends |
|---|---|---|---|---|
| **1** | LaserNetUS standard proposal call | Mar. 18, 2019 **4pm PST** | July 2019 | Dec. 2019 |
| **2** | LaserNetUS standard proposal call | Sept. 6, 2019 **4pm PST** | Jan. 2020 | Dec. 2020 |
| **3** | LaserNetUS standard proposal call | Dec. 11, 2020 **4pm PST** | June 2021 | June 2022 |
| **4** | LaserNetUS standard proposal call | Dec. 10, 2021 **4pm PST** | July 2022* | July 2023 |

*Earliest start date will depend on facility readiness and proposal feasibility.

## Proposal Preparation Guidelines

LaserNetUS encourages scientists from all institutions and any field of research to propose experiments utilizing the consortium's wide-ranging laser capabilities. International Principal Investigators (PIs) and collaborations are welcome. We recommend that scientists describe well-posed experiments. Proposals must include brief discussions of the expected scientific or technological impact, the anticipated feasibility, and the probability of success. Proposals that include a clear description of the expected schedule, indicating the scope, have a better chance of being selected.

The Intense-light USers Engagement (I-USE) committee is hosting a one-hour Webinar on "How to Write a Successful LaserNetUS Proposal" on Oct. 25, 2021 from 10-11am PDT. Registration is required in advance. Dr. Arianna Gleason (Chair of the Proposal Review Panel) will present proposal best practices and evaluation criteria followed by a moderated Q&A session with a panel of previously successful applicants.

A Virtual Town Hall for Cycle 4 will be held on Nov. 17, 2021 from 8-10am PST to better inform the users about the capabilities offered by each of the laser facilities. Representative staff will inform the community about the latest capabilities through brief presentations followed by a moderated Q&A. A recording and slides from the previous meeting can be found on the Virtual Town Hall for Cycle 3 event page.

More information about each facility can be found on the LaserNetUS website.

# Submitting LaserNetUS Proposals

LaserNetUS proposals are submitted through the LaserNetUS User's Portal which is operated by SLAC National Accelerator Laboratory. New users serving as the spokesperson of a proposal must register for a User's Portal Account before they can submit a proposal – please note that if you already have a user account for facilities at SLAC (i.e. LCLS, SSRL, CryoEM), you do not need to make a new account. The proposal submission process will take approximately 30 minutes to complete including a safety management portion at the end. If you have any problems while submitting your proposal, please contact us.

Proposal preparation guidelines are summarized below. Users will want to review the our Facilities Pages and contact the Point of Contacts (POCs) to discuss the technical feasibility of proposed experiments.

# Required Content for Your Proposal

The **proposal text is limited to 6 pages in PDF format**, not including supplemental material which can be uploaded separately. Proposals should include the following information (include the spokesperson's name in the upper right-hand corner of each page):

1. **Descriptive Title:** Provide a descriptive title of your proposed experiment that can be shared publically if awarded facility time.

2. **Abstract:** Provide an abstract that concisely (less than 1,950 characters) summarizes the proposed experiment, quantities to be measured, samples to be studied, expected scientific results, and impact.

3. **Experimental Team**: In a table, list the names, institutions, email addresses of PIs and collaborators who would participate in the proposed experiment (e.g. sample preparation, theory, data collection, data analysis). This section could also briefly mention directly relevant previous work done by the team members.

4. **Scientific Case**: Briefly explain the background and significance of your experiment. In particular, why is a LaserNetUS laser system required for this experiment? Itemize the specific aims and particular questions you want to answer. Focus on the specific experiment and avoid broad discussions in general terms.

5. **Experimental Procedure**: Provide specific information so that the feasibility of this experiment at the requested LaserNetUS facility can be evaluated. Tell us if you plan to or have carried out supporting experiments at other facilities. Have simulations of the experiment been performed? What are the anticipated data rates? Provide a beam time plan, indicating what could be accomplished shift by shift. Describe any additional equipment you plan to bring to the facility for the experiment.

   *If remote operation is requested, it must be addressed in this section.* Has the desired facility been contacted? Has the facility POC confirmed that remote operation is available for the proposed experiment? Is remote operation only to be considered

if the experimental team is unable to travel or is remote operation the only possible mode-of-operation?

6. **Experiment readiness:** Due to Covid-19-related uncertainties, please provide additional information about your experiment readiness. Upon being informed that your proposal is accepted (expected to be mid-March 2022), how soon do you anticipate being ready for the experiment? This information will be used for scheduling only and does not affect the ranking done by the Proposal Review Panel.

7. We strongly recommend that you **contact scientist**(s) at your preferred laser facility or facilities before proposal submission to discuss capabilities, to identify possible problems in integrating external equipment with the facility, and to determine possible solutions.

8. **Technical Feasibility**: Proposals must contain sufficient information for the preferred laser facility scientists to review the proposal for technical feasibility. This information should include:
    - Equipment
        - Which elements of the proposed facility do you require for the proposal?
        - What additional equipment is needed, including detector, sample delivery/environment, temperature, pressure, etc?
        - How do you plan to provide/organize the additional equipment?
    - Parameters
        - Describe relevant laser parameters, such as wavelength, focal spot quality, repetition rate, pulse contrast, pulse energy, and pulse duration
        - Specify any timing and synchronization requirements
    - Experimental protocol
        - Describe the experimental geometry
        - Calculate the expected signal rate and background levels
        - Describe samples and concentrations, sample preparation, and storage
        - Describe local facilities that may be required

9. **Progress Report**: When submitting a proposal that is substantially similar to a previous proposal (declined or awarded LaserNetUS facility time), upload a summary of changes since last submission or a progress report; for the latter include proposal number(s), date(s) of experiment, instrument(s) used, a brief summary of how experiment time was used and results disseminated (list major invited talks, papers published or in press, awards, or special recognition).

# Changes since Cycle 3

- With the recent decommissioning of the HERCULES laser, the Center for Ultrafast Optical Science (CUOS) at the University of Michigan will no longer available for LaserNetUS experiments.

- The Jupiter Laser Facility (JLF) will resume operations of the Titan Laser. The JLF facility at Lawrence Livermore National Laboratory (LLNL) provides 50% of beamtime to LaserNetUS and the other 50% is administered by LLNL through JLF annual call. These beamtime allocations are separate and duplicate proposals are discouraged. The goal of LaserNetUS is to provide complementary opportunities and not meant to replace or duplicate the annual JLF call.

- The Institute for the Frontier of Attosecond Science and Technology (iFAST) at the University of Central Florida (UCF) has joined LaserNetUS however they will not be accepting proposals for LaserNetUS experiments yet during Cycle 4.

- The Diocles 0.7 PW beamline at the Extreme Light Laboratory (ELL) at the University of Nebraska-Lincoln (UNL) is unavailable for user experiments during Cycle 4 due to essential maintenance and repairs.

# Notes

- **Safety**
  Safety related documents must be submitted during the safety management portion of the LaserNetUS proposal submission process in the user portal. List and describe any safety concerns that may arise with samples you will examine, equipment you will use, or techniques you will perform (including any physical, chemical or biological hazards) and how these issues will be addressed.

- **Cost**
  There is no cost to submit proposals or conduct experiments at the participating institutions. Users are generally responsible for their own travel and target expenses as well as any extraordinary consumables required by the experiment.

- **Designating Primary and Secondary Facility**
  Each proposal is for one specific experiment, with the option to designate first and second choice for a facility.

- **Scientific Campaigns**
  Proposals may be made in the context of a larger scope than can be covered in a single experiment. All proposals, even these broader proposals that address important problems, must be resubmitted each cycle in order to be peer reviewed and considered for facility time. However, in the absence of sufficient information to evaluate progress (data disseminated from previous facility time, publications, etc.), the PRP may recommend that some proposal(s) be postponed for consideration until a future review cycle.

- **Publication Record from Previous LaserNetUS Experiments**
  In future calls, the PRP will pay particular attention to the applicant's publication record from prior LaserNetUS facility times. Failure to publish in a timely manner will impact the chances of a successful application in a similar area.

- **Resubmission**
  Proposals can be re-submitted at each call, but this will not happen automatically and a re-submission will not receive preference during the review process.

- **Multiple Submissions**
  Multiple submissions from the same team for similar experiments at different LaserNetUS facilities will not be considered. While there is no limit to the number of distinct proposals that can be submitted by a scientist or team, the Proposal Review Panel (PRP) may impose a relative advantage to the first-best proposal from each team.

- **Scheduling Accommodations during COVID-19 Pandemic**
  LaserNetUS will make every effort to schedule runs as outlined in this call for proposals and once scheduled, to execute the runs on time. However, unforeseen changes either in the ability of our users to travel and perform the experiment or in a facility's ability to admit users may require flexibility by all. Users whose proposals are selected for facility time should be in regular contact with LaserNetUS and the facility POC to prepare for their experiments.

- **Remote Operation and Facility Availability**
  Due to the complex national situation, the availability and constraints at each facility differs. Some facilities are offering, or may offer, remote operation. In this mode, users are not on-site but instead participate in their run online while facility staff setup and execute the run. Some facilities may offer remote operation only on a case-by-case basis depending on the technical challenges and collaborative nature of the proposed experiment. Proposers should contact their preferred facilities before the proposal deadline to discuss this if desired.

- **Required Language**
  Proposal teams must **acknowledge** the host institution and DOE Office of Science in presentations and publications using the template: "*This work was supported by the U.S. DOE Office of Science, Fusion Energy Sciences under Contract No. [LaserNetUS contract number from facility]: the LaserNetUS initiative at [Facility],"* and any other acknowledgement required by the host institution