Descriptive Title of Proposed ExperimentTitle should be suitable for public disclosure if awarded beam time

*(No need to repeat author list, since that information is captured elsewhere)*

# *General Notes (not part of template, delete when read)*

# *The content should be written in Times New Roman 11, single-spaced, and aligned in mode “justify”. Please make sure to set the following margins: top, bottom, right: 1.0”(2.5 cm); left: 1.0” (2.5 cm).*

# *The detailed proposal text (including abstract) is limited to 4 pages in PDF format, not including the additional one page for the parameter table and references, or a one-page progress report of previous beam time which can be uploaded separately.*

# *Orient the proposal to the target audience (PRP members) who are very knowledgeable scientists with a broad perspective of the field, and deep expertise in specific areas, but may not be experts in the particular topic of the proposal.*

# *In preparing proposals, please keep in mind the evaluation criteria:*

# *Scientific Impact: Does the proposal address a question that, if successfully answered by the proposed experiment, will have a strong impact either on the scientific field or technological area addressed by the research?*

# *Originality/New Scientific Field: If successful, will the proposal open a new field, or demonstrate a new approach in an existing field?*

# *Need for LCLS MeV-UED: To what extent is MeV-UED critical for the success of this proposal? Can other techniques or facilities provide similar information about the scientific question?*

# *Scientific Risk: Evaluate the probability that the proposed research will yield significant new results. We seek a balance of risk in the experimental portfolio, ranging from more speculative high risk / high return investigations to lower risk measurements of important systems.*

# *Prior Results: Evaluate success or progress of prior experiments, including precursor work on other facilities that motivate the need for LCLS MeV-UED.*

# *Feasibility: LCLS MeV-UED scientists conduct a preliminary technical feasibility review of submitted proposals. Your engagement with LCLS staff in preparing the proposal will help alleviate problems in this area.*

# Abstract

# Provide an abstract that concisely (less than 2,000 characters) summarizes the proposed experiment. Emphasize the hypothesis to be tested, expected scientific results and impact. Indicate the observables to be measured (or the relevant experimental approach), samples to be studied etc.

# Experimental team

|  |  |  |  |
| --- | --- | --- | --- |
| Name | email | Project Role | Position |
| Prof. I.M. Good1 | imgood@email.com | Lead PI, Experiment, Analysis | Professor |
| Jane Great2 | jgreat@slac.stanford.edu | Spokesperson, Sample prep.  Experiment, Analysis | Postdoc |
| Dr. R. Best3 | bestr@pnnl.gov | Co-PI, Theory | Senior  Scientist |
| *add rows as needed* |  |  |  |

(1) *Department of Chemistry, University of Washington, Seattle, WA 98195, USA*

(2) LCLS and *Stanford PULSE Institute, SLAC, Menlo Park, CA 94110, USA*

(3) *Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory,* *Richland, WA* *99352, USA*

**Scientific Case:**

Briefly explain the background and significance of your experiment. In particular, why is MeV-UED required for this experiment? Itemize the specific aims and particular science questions you want to answer. Focus on the specific experiment and avoid broad discussions in general terms.

This is the core of the proposal. It is recommended that ~1.5 pages are devoted to this section.

Consider splitting the Science Case into subsections as appropriate for readability and clarity (e.g. itemizing specific aims, objectives, and science questions to be addressed).

Sub-section (as needed). Consider the following questions to guide your writing:

* What is the hypothesis to be tested, or what essential question is to be addressed in these experiments?
* What will be the scientific impact if successful (i.e. why will the scientific community care...)?
* How do you propose to address the hypothesis or answer the essential question?
* What are the experimental observables, and how will these observables address the main scientific (or technical) objectives of the proposal? Modeling and/or prior results that can quantify the expected observables should be presented wherever possible – see “feasibility” section below.

**Experimental Procedure:**

Provide specific information about how the experiment will be conducted, so that feasibility of experiment can be evaluated. Figures and schematics are encouraged.

Tell us if you plan or have carried out supporting experiments at other facilities. Have simulations of the experiment been performed? Provide a beam time plan, indicating what could be accomplished shift by shift. Describe any additional equipment you plan to bring to MeV-UED for the experiment.

**Technical Feasibility:**

Proposals must contain sufficient information for the MeV-UED instrument staff to review the proposal for technical feasibility. What are the magnitude of the expected diffraction changes? What are the integrations times required? Can results be compared to theory? Etc.

We strongly recommend that you contact the MeV-UED instrument scientist(s) before proposal submission to discuss capabilities, to identify possible problems in integrating external equipment with the MeV-UED instrument and to determine possible solutions.

|  |  |
| --- | --- |
| **Parameters Table (not included in page limit)** | |
| Sample environment | *Temperature, bias, etc.* |
| Sample & sample description | *e.g. Bismuth film, 10 nm thickness on 50 nm SiN TEM style membranes* |
| Laser Pump wavelength(s) | *e.g. 266 nm* |
| Pump polarization | *Linear, circular…* |
| Laser delay range | *e.g. -5 – 50 ps* |
| Pump fluence | *e.g. 1 – 10 mJ/cm2* |
| Special Requirements | *Any special requirements for the experiment* |

**References** **(not included in page limit)**

[1] A.N. Author, *Journal.* **volume**, page (year); doi.

[2] A.N. Author, *Journal.* **volume**, page (year); doi