

## Template for MPRL White Paper Proposals

Users are free to submit white paper proposals that do not exactly conform to the outline of the template, below. However, it is strongly encouraged that they include the substance of the outlined topics. The length of the white paper should not exceed five U.S. letter-sized pages (including figures and references) with a minimum of 11 point main font size.

### 1. Proposal Title

### 2. List of proposers/team members and associated institutions/companies.

Be sure to designate a primary point-of-contact and provide their email address.

### 3. Abstract

Include a very brief (<200 words) summary of your proposal's motivation and anticipated goals. If your white paper is approved, this abstract will be posted on the facility website.

### 4. Background & Scientific Rationale

Include information sufficient for someone with a background in science or engineering, but not necessarily an expert in your subfield, to understand your proposal.

Some questions to consider: How novel is this project? Why does the experiment need to be done with a high magnetic field? Is there a specific area of plasma physics (solar, magnetospheric, fusion, etc.) that this work will impact? Or, is there a specific area of science and engineering beyond plasma physics that may be impacted (e.g., colloidal physics, material science, aerospace, etc.)? What is the basic science or engineering question that is being addressed?

White paper proposals will be assessed based on the Intellectual Merit and Broader Impacts of the proposal.

Intellectual Merit will be judged based on: (1) Importance of the scientific questions addressed, (2) Potential impact of the experiment, and (3) Clarity and reasonableness of the experimental approach.

Broader impacts will be judged based on the involvement and training of junior scientists (including students & postdocs), impact on diversity, and contributions to MPRL users (e.g. will the project bring new techniques or hardware that could be utilized by others?)

Proposers should ensure that the goal of the experiment is clear in the proposal and that resources requested (run time, measurements to be made, etc) are reasonable.

Applicants who have previously been allocated runtime and are seeking new runtime to continue the same project should provide a status report on the results of prior runtime (including any presentations or publications that have resulted from the previous runtime).

### 5. Experimental Setup and Diagnostics

Details on machine and plasma parameters, available diagnostics, digitizers, and in-house equipment can be found on the MPRL website (<http://aub.ie/mprl>). Considerations include:

- Which operational mode (Mode 1 to Mode 4) is being proposed?
- How much run time is required?

- What are the required range of plasma parameters (magnetic field, density, ion species, electron temperature, etc.?)
- What diagnostics are needed (Langmuir probes, cameras, lasers, etc.) and please indicate the number and orientation?
- Is there any new equipment to be purchased or fabricated by the proposers and/or local team?
- Do the proposers have the funding to purchase and/or the technical skills required to build the necessary hardware?
- Will hardware remain at Auburn for other experimenters?

## **6. Personnel**

Describe the roles of each team member and what each will do to execute the goals of the project.

## **7. References**