Information for potential collaborators

General information

The mission of the Princeton Collaborative Low-Temperature Plasma Research Facility (PCRF) is to provide the entire scientific community access to specialized, world-class diagnostics, instruments, computational tools, and related expertise. The facility, sponsored by the Office of Science, Fusion Energy Sciences within the Department of Energy (DOE), is focused on frontier research in low-temperature plasma and its applications.

More detailed information about the PCRF can be found at http://pcrf.pppl.gov/

Call for Proposals

A call for proposals to access the resources of the PCRF occurs on annual basis and will remain open for roughly a period of two months. The target timeframe for the call is in the fall. **The allocation of facility runtime will be based on the recommendation from the external review panel, feasibility, and availability of facility resources and DOE funds.**

The submission process utilizes a succinct proposal describing the scientific goals of the proposed research and how the proposed work advances and impacts the field of low-temperature plasma science. Information is also requested about what capabilities and expertise will be needed to achieve the proposed research goals and the likelihood of the proposed research being published.

Individual proposals may include multiple users, from one or more institutions, and may request access to multiple Facility capabilities and staff scientists. The scope of an external collaboration can vary from a single interaction to several extended visits utilizing a range of capabilities. The duration of each proposed project will be determined in discussions between the proposal PI and the facility. It is anticipated that the facility runtime for each project will not exceed 6-8 weeks.

Proposals can be submitted at the webpage https://pcrf.princeton.edu/solicitation/ by emailing directly to Dr. Yevgeny Raitses (PCRF Director): yraitses@pppl.gov

Engaging with PCRF staff to help guide the outline of the proposal is highly encouraged. A list of PCRF staff and their research responsibilities can be found on the PCRF website: http://pcrf.pppl.gov .

Review process

After proposals are collected, they will undergo both internal and external reviews to determine technical merit, the feasibility of success with requested resources, and the availability of resources. Proposals will only be reviewed by the Facility to which they are submitted.

Reviews will be based on the following criteria:

1. **Scientific/Intellectual Merit:** Prospects for fundamental advance, new approach, understanding, or valuable results? Uniqueness, originality, and scientific merit compared with other efforts? Impact on the field?
2. **Proposed Method/Approach:** How well developed is the idea? Logical and/or feasible and/or innovative? Well thought out? Likelihood of valid conclusion or success? Potential problems recognized and alternative strategies considered?
3. **Qualification of PI's Team and Facility Readiness**: How well prepared are the PI and team? Necessary skills represented amongst proponents? CRF research environment and available resources adequate? What level of technical support is needed from the CRF team? What are the needs for additional diagnostic or equipment?

Once reviews are received, a notification letter will be issued to the PI of the proposal regarding the decision. PIs of successful proposals will receive a tentative schedule for the project.

A schedule for the upcoming Call is outlined below

Call for proposals opens: September 29, 2025

Call for proposals closes: December 8, 2025

External Review: ~ 2 months

Notification of Principal Investigators: by February 16, 2026

The PCRF facility will consider out-of-cycle proposals throughout the year depending on facility utilization and availability of funding.

Current Solicitation Focus Areas:

The PCRF welcomes proposals across the entire spectrum of low-temperature plasma research. For this cycle, PCRF particularly encourages proposals addressing the following areas:

(1) Advanced plasma science for nanofabrication, with applications in microelectronics and quantum information science (QIS), and for sustainability initiatives.

(2) Proposals that broaden PCRF research capabilities and resources, including the development and utilization of novel diagnostics, plasma sources, and modeling codes.

(3) Applications of machine learning and artificial intelligence for plasma-based research, technology development, and industrial applications.

Additional information for potential US collaborators

In case of genuine need for additional funding, successful U.S. collaborators may apply for support through separate DOE or other agency FOAs. For more information please contact: DOE Program Manager Riq Parra (enrique.parra@science.doe.gov).

Please note that the runtime on the PCRF does not guarantee or imply any supplemental support from DOE FES.

Thank you for your interest and participation.

For more information:

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The Princeton Plasma Physics Laboratory is devoted to creating new knowledge about the physics of plasmas and to developing practical solutions for the creation of fusion energy. The Laboratory is managed by Princeton University for the U.S. Department of Energy's Office of Science under contract DE-AC02-09CH11466.