

## 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 (FES) within the Department of Energy (DOE), is focused on frontier research in low-temperature plasma.

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 usually 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.

We encourage external collaboration from early career scientists, women, and minority researchers; proposals for research that involves students and/or postdocs; and proposals that promote a broad collaboration between PCRF and LTP research teams in the US and internationally.

Proposals can be submitted at the webpage <https://pcrf.princeton.edu/solicitation/> by emailing directly to Dr. Yevgeny Raitses (PCRF Director): [yraitses@pppl.gov](mailto: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? Collaborative Research Facility (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?
4. **Promoting Inclusive and Equitable Research (PIER) Plan:** Does the proposal involve the participation and training of students or postdocs or individuals from diverse backgrounds? Support an encouraging, safe, professional research environment for all participants. Make contributions to the broader community using the CRF (e.g., will the project bring new techniques or hardware that could be utilized by others)?

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: November 11th, 2024

Call for proposals closes: December 15th, 2024

External Review: ~1.5 month

Notification of Principal Investigators: by February 10, 2025

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

**This year solicitation**

In addition to general topics of low-temperature plasma science and applications, this year's solicitation encourages external collaboration aimed to

- advance plasma science associated with two specific applications: 1) nanofabrication for microelectronics and QIS and 3) sustainability
- broaden PCRf research capabilities and resources (e.g., diagnostics, plasma sources, codes)
- machine learning and artificial intelligence for plasma research and applications

**Additional information for potential US collaborators**

It is noted that facility runtime is awarded by PCRf only and doesn't come with any agency funding to carry out the proposed research. U.S. PIs who need funding to carry out their research may apply directly to any domestic agencies including DOE. For all available DOE/FES Notices of Funding Opportunities (NOFOs), please visit: <https://science.osti.gov/fes/Funding-Opportunities>. In addition, all first-time user PIs may contact the DOE FES Program Manager, Dr. Nirmol Podder directly regarding relevant DOE NOFOs/FOAs, (<https://science.osti.gov/fes/About/Staff>).

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.*

