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From: Faculty Research Development Office (FRDO)  
Office of the Vice President for Research

Subject: Limited Competition: DOE: Innovation Fusion Technology and Collaborative Fusion Energy Research in the DIII-D National Program (DE-FOA-0002904)

Date: January 23, 2023

The DOE SC program in FES hereby announces its interest in **Innovative Fusion Technology** and **Collaborative Fusion Energy Research** in the DIII-D National Program. The aims of this FOA are two-fold. First, it aims at research to advance innovative fusion technology that supports the tokamak path to fusion energy. Second, it aims to support collaborative research activities in fusion energy research at the DIII-D National Fusion Facility. Among the objectives is to enable the U.S. to aim at a fusion pilot plant based on the advanced tokamak concept.

The realization of the tokamak path to fusion energy requires advances in supporting technologies to address experimental capability gaps and achieve higher levels of fusion performance while avoiding interruptions to facility operation and ensuring facility safety. The purpose of this focus area is to develop these supporting technologies for installation and exploitation on the DIII-D facility. IFT activities include the development of new systems on DIII-D as well as systems first developed at collaborating institutions provided there is a commitment and plan to install them on DIII-D once demonstrated and characterized. As such, it addresses recommendations to leverage small-scale experiments and facilities to develop transformative enabling technology. Note that the development of entirely new tokamak facilities is out of scope for this FOA, but activities on existing facilities are in scope.

Technology development efforts of interest include the following topics:

- development of diagnostics, measurement, and control techniques that can be used in a reactor environment;
- subsystems that improve our understanding of plasma-material interactions;
- in situ materials characterization tools that can be installed in confinement experiments;
- technology to meet plasma fueling needs of a FPP;
- systems that allow for active control of helium ash;
- diagnostics and systems that advance methods for disruption prediction, avoidance, and mitigation to inform FPP design;
- systems that support steady-state divertor and plasma exhaust solutions for magnetic confinement configurations; and
- other tokamak-relevant priorities called out in the CPP and LRP reports.

The award size will depend on the number of meritorious applications and the availability of appropriated funds. The annual ceiling and the floor values are listed by topic allowing for single institution awards and multi-institutional teams. IFT Multi-Institutional team: \$100K /institution to \$2.5M for entire collaboration; IFT Single Institution: \$100K to \$2.5M; Collaborative Research Multi-Institutional team: \$50K/institution to \$1.8M/institution; Collaborative Research Single Institution: \$50K to \$1.8M. More details can be found in the solicitation: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=345346> The deadline for submitting mandatory pre-applications to the agency is **February 15, 2023**. Encouraged full proposals will be due **March 30, 2023**.

This is a limited competition. **Each institution is limited to no more than one pre-application, or applications per research area (e.g. Collaborative Research or Innovative Fusion Technology) for a total of TWO pre-applications, or applications.** If you are interested in submitting to this program, please submit a statement of interest with a tentative project title and a brief description (200 words) by **NOON, January 30, 2023** via UNM's [InfoReady Review portal](#). **Because of the short turnaround time (DOE only announced this competition very recently), this limited competition will be conducted on a first-come, first-served basis. This means that the first two SOIs we receive will be given the UNM slots.**

Should you have any questions please feel free to contact us at [limited@unm.edu](mailto:limited@unm.edu).

*If you are affiliated with HSC, please contact HSC Limited Competition at [HSC-LimitedComps@salud.unm.edu](mailto:HSC-LimitedComps@salud.unm.edu) for more information.*