Funding Opportunities

January 17, 2023

*The opportunities listed here may be limited submissions. Please contact the **Research Office** to determine if there is an active or upcoming internal process for any opportunity of interest.*

Department of Energy – Office of Science, Fusion Energy Sciences

Innovative Fusion Technology and Collaborative Fusion Energy Research in the DIII-D National Program

Pre-Application: February 15, 2023 | Full: March 30, 2023

Summary: 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. Research supported under this FOA is focused on two areas: innovative fusion technology (IFT) and collaborative research (CR).

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 Collaborative Research area aims at supporting DIII-D facility users. The DIII-D program is highly collaborative in nature, where participating scientists provide support to the entire research team in order to deliver elements needed for a scientific study on DIII-D (e.g., operating diagnostic systems, providing analyzed data, and supporting facility operations where appropriate). Each DIII-D research study typically requires the engagement and support of an extended group of scientists to plan and conduct the experiments, and to collect and analyze the resulting data.

Estimated Funding/Number of Awards: Approximately six awards are expected. The **annual** ceiling and the floor values are listed below by topic allowing for single institution awards and multi-institutional teams.

FOA Topic	# of distinct institutions	Ceiling	Floor
Innovative Fusion Technology	Multi-institutional team	$2,500,000 for the entire collaboration	$100,000 per institution
Innovative Fusion Technology	Single Institution	$2,500,000	$100,000
Collaborative Research	Multi-institutional team	$1,800,000 per institution	$50,000 per institution
Collaborative Research	Single Institution	$1,800,000	$50,000

Additional Information: DE-FOA-0002904