

**Office of Energy Research**  
**Notice 98-07**

*National Spherical Torus Experiment (NSTX) Research Program*

**DEPARTMENT OF ENERGY**  
**OFFICE OF ENERGY RESEARCH**

**Energy Research Financial Assistance Program Notice 98-07:**  
**National Spherical Torus Experiment (NSTX) Research Program**

**AGENCY:** U.S. Department of Energy

**ACTION:** Notice inviting grant applications

**SUMMARY:** The Office of Fusion Energy Sciences (OFES) of the Office of Energy Research, (ER), U.S. Department of Energy (DOE) announces its interest in receiving grant applications for imaginative research initiatives to be conducted on the NSTX device in furtherance of its research mission. Successful applications will be funded throughout FY 1999, depending in part on the detailed schedule of the research topics that are undertaken.

The Office of Fusion Energy Sciences is interested in applications for research that have the possibility of contributing to the achievement of the NSTX research program goals. The research should be aimed at elucidating the physics principles involved through experimental and theoretical means. Research projects are sought which are original, and which provide scientific insights into the novel operating regimes that will be the thrust of the NSTX program. The program of collaboration must be developed through cooperation and discussions with the NSTX research team at Princeton Plasma Physics Laboratory (PPPL).

**DATES:** To permit timely consideration for awards in Fiscal Year 1999, formal applications submitted in response to this notice must be received no later than 4:30 p.m., April 23, 1998.

**ADDRESSES:** Completed formal applications referencing Program Notice 98-07 should be forwarded to: U.S. Department of Energy, Office of Energy Research, Grants and Contracts Division, ER-64, 19901 Germantown Road, Germantown, Maryland 20874-1290, ATTN: Program Notice 98-07. The above address must also be used when submitting applications by U.S. Postal Service Express, any commercial

mail delivery service, or when hand carried by the applicant. No electronic submissions of formal applications will be accepted.

**FOR FURTHER INFORMATION CONTACT:** Dr. William F. Dove, Science Division, ER-55, Office of Fusion Energy Sciences, U.S. Department of Energy, 19901 Germantown Road, Germantown, MD 20874-1290, Telephone: (301) 903-4911, or by Internet address, [william.dove@mailgw.er.doe.gov](mailto:william.dove@mailgw.er.doe.gov).

**SUPPLEMENTARY INFORMATION:** It is expected that the NSTX research program will be inaugurated during FY 1999. The initiation and scheduling of detailed research activities will depend on operational factors. Not all of the research tasks will be undertaken simultaneously. In selecting applications for funding, the DOE Office of Fusion Energy Sciences will give priority to applications that can produce experimental results that are needed by the NSTX program within the first two years of experimental operations. However, the OFES intends to build a research team to meet the longer duration program goals. Theoretical research will be accepted for consideration under this Notice as a collaboration with, and in support of, experimental programs.

The detailed description of the proposed research collaboration should contain the following items: (1) Synopsis of the proposed research program plan; (2) A detailed experimental research plan describing the elements of the collaboration with PPPL including the PPPL collaborators and any local support needed from PPPL, and arrangements for access to the device; (3) Goal of the research and how it supports the NSTX program; (4) The specific results or deliverables expected at the end of the project period as a consequence of the collaboration; (5) Discussion of why this research would have an important impact on the NSTX research program; and (6) Discussion of how the research would elucidate the physics principles of the Spherical Torus approach to fusion confinement.

### **Collaboration and Training**

Applicants are strongly encouraged to collaborate with researchers in other institutions, such as universities, industry, non-profit organizations, federal laboratories and Federally Funded Research and Development Centers (FFRDCs), including PPPL and the other DOE National Laboratories, where appropriate, and to incorporate cost sharing and/or consortia wherever feasible. Applicants are also encouraged to provide training opportunities, including student involvement, in applications submitted to the program.

Collaborative research applications may be submitted in several ways:

(1) When multiple private sector or academic organizations intend to propose collaborative or joint research projects, the lead organization may submit a single application which includes another organization as a lower-tier participant (subcontract) who will be responsible for a smaller portion of the overall project. If approved for funding, DOE may provide the total project funds to the lead organization who will provide funding to the other participant via a subcontract arrangement. The application should clearly describe the role to be played by each organization, specify the managerial arrangements and explain the advantages of the multi-organizational effort.

(2) Alternatively, multiple private sector or academic organizations who intend to propose collaborative or joint research projects may each prepare a portion of the application, then combine each portion into a single, integrated scientific application. Separate Face Pages and Budget Pages must be included for each organization participating in the collaborative project. The joint application must be submitted to DOE as one package. If approved for funding, DOE will award a separate grant to each collaborating organization.

(3) Private sector or academic applicants who wish to form a collaborative project with a DOE FFRDC may not include the DOE FFRDC in their application as a lower-tier participant (subcontract). Rather, each collaborator may prepare a portion of the proposal, then combine each portion into a single, integrated scientific proposal. The private sector or academic organization must include a Face Page and Budget Pages for their portion of the project. The FFRDC must include separate Budget Pages for their portion of the project. The joint proposal must be submitted to DOE as one package. If approved for funding, DOE will award a grant to the private sector or academic organization. The FFRDC will be funded, through existing DOE contracts, from funds specifically intended for new FFRDC projects. DOE FFRDCs will not compete for funding already intended for private sector or academic organizations. Other Federal laboratories who wish to form collaborative projects may also follow guidelines outlined in this section.

Further information on the NSTX program at PPPL may be found at <http://www-local.pppl.gov/nstxhome/index.shtml>, and detailed information on the NSTX research activities may be found in the NSTX Meeting Information Home Page: <http://www-local.pppl.gov/nstxhome/nstx/meetings/>

It is anticipated that up to \$3 million in FY 1999 will be available for new grants from applications received in response to this Notice. The number of awards and range of funding will depend on the number of applications received and selected for award. Future year funding is anticipated to be greater but will depend on the nature of the applications, suitable experimental progress and the availability of funds. Because of

the total amount of anticipated available funding and because of the intent to have a broadly based program, experimental applications with a requirement in any twelve-month period in excess of \$1.5 million are unlikely to be funded. The cost-effectiveness of the application will be considered when comparing applications with differing funding requirements.

To facilitate the review, the application must be limited to a maximum of twenty (20) pages (including text and figures) plus not more than one page each of biographical information and publications of the principal investigator, plus any additional forms required as a part of a standard grant application. Appendices including publications are acceptable; however, they must not be used as a method of avoiding the page limit. Reviewers are not required to read such appendices.

An original and seven copies of each application must be submitted. Applications will be subjected to formal merit review and will be evaluated against the following criteria, which are listed in descending order of importance as set forth in 10 CFR Part 605:

1. Scientific and/or technical merit of the project;
2. Appropriateness of the proposed method or approach;
3. Competency of the applicant's personnel and adequacy of the proposed resources; and
4. Reasonableness and appropriateness of the proposed budget.

The evaluation will include program policy factors such as the relevance and responsiveness of the proposed research to the terms of the announcement and the agency's programmatic needs, specifically including the stated needs of the NSTX research program. General information about development and submission of applications, eligibility, limitations, evaluations and selection processes, and other policies and procedures may be found in the Application Guide for the Office of Energy Research Financial Assistance Program and 10 CFR Part 605. Electronic access to the Application Guide is possible via the Internet using the following Web site address: <http://www.er.doe.gov/production/grants/grants.html>

External peer reviewers are selected with regard to both their scientific expertise and the absence of conflict-of-interest issues. Non-federal reviewers may be used, and submission of an application constitutes agreement that this is acceptable to the investigator(s) and the submitting institution.

The Catalog of Federal Domestic Assistance number for this program is 81.049, and the solicitation control number is ERFAP 10 CFR Part 605.

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for Resource Management  
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