

**FINANCIAL ASSISTANCE  
FUNDING OPPORTUNITY ANNOUNCEMENT**



**U.S. Department of Energy**

**Office of Science  
Fusion Energy Sciences**

**Research in Innovative Approaches to Fusion Energy Sciences**

**Funding Opportunity Number: DE-FOA-0000286**

**Announcement Type: Initial**

**CFDA Number: 81.049**

<b>ISSUE DATE:</b>	<b>March 2, 2010</b>
<b>PREAPPLICATION DUE DATE:</b> <b>(Preapplications are Required)</b>	<b>March 26, 2010, 11:59 p.m. Eastern Time</b>
<b>APPLICATION DUE DATE:</b>	<b>April 30, 2010, 11:59 p.m. Eastern Time</b>

## Where to Submit:

### NOTE: REQUIREMENTS FOR GRANTS.GOV

**Where to Submit:** Applications must be submitted through Grants.gov to be considered for award. You cannot submit an application through Grants.gov unless you are registered. Please read the registration requirements carefully and start the process immediately. Remember you have to update your CCR registration annually. If you have any questions about your registration, you should contact the Grants.gov Helpdesk at 1-800-518-4726 to verify that you are still registered in Grants.gov.

**Registration Requirements:** There are several one-time actions you must complete in order to submit an application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). See <http://www.grants.gov/GetStarted>. Use the Grants.gov Organization Registration Checklist at <http://www.grants.gov/assets/OrganizationRegCheck.pdf> to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible.

**IMPORTANT NOTICE TO POTENTIAL APPLICANTS:** When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e. Grants.gov registration).

**Questions:** Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or [support@grants.gov](mailto:support@grants.gov). Part VII of this announcement explains how to submit other questions to the Department of Energy (DOE).

**All applications should be in a single PDF file.**

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## PART I – FUNDING OPPORTUNITY DESCRIPTION

### GENERAL INQUIRIES ABOUT THIS Funding Opportunity Announcement (FOA) SHOULD BE DIRECTED TO:

Dr. Samuel J. Barish, Fusion Energy Sciences  
Phone: (301) 903-2917  
E-mail: [sam.barish@science.doe.gov](mailto:sam.barish@science.doe.gov)

### STATUTORY AUTHORITY

Public Law 95-91, US Department of Energy Organization Act  
Public Law 109-58, Energy Policy Act of 2005

### APPLICABLE REGULATIONS

U.S. Department of Energy Financial Assistance Rules, codified at 10 CFR Part 600  
U.S. Department of Energy, Office of Science Financial Assistance Program Rule, codified at 10 CFR Part 605

**SUMMARY:** The Fusion Energy Sciences (FES) Program of the Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving grant applications for innovative approaches to fusion energy sciences. All individuals or groups planning to submit applications for new or renewal funding in Fiscal Year 2011 should submit in response to this FOA.

The FES Innovative Confinement Concepts (ICC) program has the long-term performance measure of demonstrating enhanced fundamental understanding of magnetic confinement and improving the basis for future burning plasma experiments through research on magnetic confinement configuration optimization. Applications for research on the large fusion facilities (DIII-D, Alcator C-Mod, NSTX, and MST), or initiatives in Inertial Fusion Energy Sciences and High Energy Density Plasma Physics, should not be submitted in response to this FOA.

The ICC program explores improved pathways to practical fusion power by addressing critical problems that hinder the tokamak concept, such as plasma disruption, heat load on internal components, and operational and maintenance complexity. As the world magnetic fusion program enters the burning plasma era, ICC research must migrate toward investigations and validations of the physical framework that will govern the dynamics and control of the self-organized burning-plasma state in future toroidally-confined plasmas. The difference in physically-relevant plasma parameters between ICC-scale experiments and future burning plasma experiments is recognized. Thus, high value is placed on the linkage between prediction and measurement for scientific leverage in testing the theories and scaling the phenomena that are relevant to future burning plasma systems.

Key program issues include initiation and increase of plasma current; dissipation of plasma exhaust power; symmetric-torus confinement prediction; stability, continuity, and profile control of low-aspect-ratio symmetric tori; quasi-symmetric and three-dimensional shaping benefits to

toroidal confinement performance; divertor design for three-dimensional magnetic confinement configurations, and the plasma-materials interface. International collaborative partnerships can be considered on the key issues listed here. This list is not exhaustive. Compared to previous ICC FOAs, an increased emphasis will be placed on those applications that have the most promise of making such linkages and addressing the issues. Overall, support of research that can best help deepen the scientific foundations of understanding and improve the tokamak concept is an important focus area of this FOA.

Another priority area for this FOA is to provide experimental data in regimes of relevance to the FES mainline magnetic confinement and materials science efforts, to help validate theoretical models and simulation codes in support of the FES goal to develop an experimentally-validated predictive capability for magnetically-confined fusion plasmas. Applicants should describe and justify the validation potential and range of applicability of the data produced by their experiments—including references to specific theories and simulation codes—and should also discuss any partnerships they have established with large-scale simulation groups.

Due to the limited availability of funds, an investigator may submit only one application in this FOA as principal investigator, co-principal investigator, or other senior investigator.

#### **SUPPLEMENTARY INFORMATION:**

##### **Program Specific Information (See Part VII B. for technical contacts for each specific area)**

Theoretical research will be accepted for consideration under this FOA when bundled with and in support of an experimental application.

##### **Collaboration**

Applications submitted from different institutions, which are directed at a common research activity, should clearly indicate that they are part of a proposed collaboration and contain a brief description of the overall research project. However, each application must have a distinct scope of work and a qualified principal investigator who is responsible for the research effort being performed at his or her institution. Synergistic collaborations with researchers in Federally Funded Research and Development Centers (FFRDCs), including the DOE National Laboratories, are also encouraged though no funds will be provided to these organizations under this FOA. Further information on preparation of collaborative applications may be accessed via the Internet at: <http://www.science.doe.gov/grants/Colab.html>.

## **PART II – AWARD INFORMATION**

### **A. TYPE OF AWARD INSTRUMENT.**

DOE anticipates awarding grants under this Funding Opportunity Announcement (FOA).

### **B. ESTIMATED FUNDING.**

It is anticipated that up to \$11,100,000 of Fiscal Year 2011 funding will be available to fund new work, or renewals of existing work, from applications received in response to this FOA. Since future year funding is not anticipated to increase, applications should propose constant effort in future years (allowing for inflation). Future year funding will depend upon suitable progress and the availability of funds. Support should be requested for up to three years. The cost-effectiveness of the application will be considered when comparing applications with differing funding requirements. It is anticipated that award sizes may range from \$50,000 to \$1,700,000 per year. The number and size of awards will depend on the number of meritorious applications and the availability of appropriated funds. DOE is under no obligation to pay for any costs associated with preparation or submission of applications. DOE reserves the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this FOA.

### **C. MAXIMUM AND MINIMUM AWARD SIZE.**

See B. Estimated Funding section above.

### **D. EXPECTED NUMBER OF AWARDS.**

See B. Estimated Funding section above.

### **E. ANTICIPATED AWARD SIZE.**

See B. Estimated Funding section above.

### **F. PERIOD OF PERFORMANCE.**

See B. Estimated Funding section above.

### **G. TYPE OF APPLICATION.**

DOE will accept new and renewal applications under this FOA. Renewal applications compete with all other applications. In preparing a renewal application, applicants should assume that reviewers will not have access to previous applications. The application should be developed as fully as though the applicant were applying for the first time. The application must include all the information required for a new project, plus the project narrative section should discuss the results from prior work.

## **PART III - ELIGIBILITY INFORMATION**

### **A. ELIGIBLE APPLICANTS.**

All types of domestic entities are eligible to apply, except other Federal agencies, Federally Funded Research and Development Center (FFRDC) Contractors, and nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995.

Funding under this FOA is limited to supporting research activities based in the U.S., although subcontracts with limited funding for collaborators outside the U.S. may be allowed with appropriate justifications.

### **B. COST SHARING.**

Cost sharing is not required.

### **C. OTHER ELIGIBILITY REQUIREMENTS.**

N/A



## PART IV – APPLICATION AND SUBMISSION INFORMATION

### A. ADDRESS TO REQUEST APPLICATION PACKAGE.

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select "Apply for Grants", and then select "Download Application Package". Enter the CFDA and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package.

### B. LETTER OF INTENT AND PREAPPLICATION.

#### 1. Letter of Intent.

Letters of Intent are not required.

#### 2. Preapplication.

Preapplications are **REQUIRED** and must be submitted by March 26, 2010, 11:59 PM Eastern Time. **Failure to submit a preapplication by an applicant will preclude the full application from due consideration.** The preapplication should be submitted electronically by E-mail to to: [yvette.walker@science.doe.gov](mailto:yvette.walker@science.doe.gov) and [sam.barish@science.doe.gov](mailto:sam.barish@science.doe.gov). **Please include “Preapplication for DE-FOA-0000286” in the subject line.**

The purpose of the preapplication is to facilitate the FES program in planning the peer review and the selection of potential reviewers for the application. For this purpose, the preapplication must include a one-page abstract of the proposed research and list the names and institutional affiliations of Principal Investigators, any Co-Principal Investigators, key investigators, collaborators or consultants, so as to identify any potential conflict of interest in the selection of qualified reviewers for the application.

### C. CONTENT AND FORM OF APPLICATION – SF 424 (R&R)

You must complete the mandatory forms and any applicable optional forms (e.g., SF-LLL-Disclosure of Lobbying Activities) in accordance with the instructions on the forms and the additional instructions below. **Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.**

#### 1. SF 424 (R&R)

Complete this form first to populate data in other forms. Complete all the required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the “Help Mode” (Icon with the pointer and question mark at the top of the form). The list of certifications and assurances referenced in Field 18 can be found on the Applicant and Recipient Page at [http://management.energy.gov/business\\_doe/business\\_forms.htm](http://management.energy.gov/business_doe/business_forms.htm), under Certifications and Assurances.

**2. RESEARCH AND RELATED Other Project Information.**

Complete questions 1 through 5 and attach files. The files must comply with the following instructions:

**Project Summary/Abstract (Field 7 on the Form).**

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the project director/principal investigator(s) (PD/PI), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information as the Department may make it available to the public. The project summary must not exceed 1 page when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left and right) with font not smaller than 11 point. To attach a Project Summary/Abstract, click “Add Attachment.”

**Project Narrative (Field 8 on the Form).**

The project narrative **must not exceed 30 pages** of technical information, including text, figures, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right). **EVALUATORS WILL ONLY REVIEW THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE.** The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application, because the information contained in these sites will not be reviewed. See Part VIII.D for instructions on how to mark proprietary application information. To attach a Project Narrative, click “Add Attachment.”

The page count of 30 does not include the Face Page and Budget Pages, the Title Page, the biographical material and publication information, or any Appendices. However, it is important that the 30-page technical information section provide a complete description of the proposed work, since reviewers are not obliged to read the Appendices.

The application narrative should begin with a cover page that includes: the project title, the Lead PI’s name and complete contact information.

**The cover page must also include the following information (this page will not count in the project narrative page limitation):**

**Applicant/Institution:**

**Street Address/City/State/Zip:**

**Principal Investigator:**

**Postal Address:**

**Telephone Number:**

**Email:**

**Funding Opportunity Announcement Number: DE-FOA-0000286**

**DOE/Office of Science Program Office: Fusion Energy Sciences, SC-24**

**DOE/Office of Science Program Office Technical Contact: Dr. Samuel J. Barish**

**DOE Grant Number (if Renewal or Supplemental Application):**

**Is this a Collaboration?** If yes, please list ALL Collaborating Institutions/PIs\* and indicate which ones will also be submitting applications. Also indicate the PI who will be the point of contact and coordinator for the combined research activity.

**The project narrative must include:**

**Project Objectives:**

This section should provide a clear, concise statement of the specific objectives/aims of the proposed project. Summarize the application in no more than two pages.

The Project Narrative comprises the research plan for the project, it should contain enough background material in the Introduction, including review of the relevant literature, to demonstrate sufficient knowledge of the state of the science. The major part of the narrative should be devoted to a description and justification of the proposed project, including details of the method to be used. It should also include a timeline for the major activities of the proposed project, and should indicate which project personnel will be responsible for which activities.

**Background and Recent Accomplishments:**

- 0 Background – explanation of the importance and relevance of the proposed work.
- 0 Recent Accomplishments – this subsection is mandatory for renewal applications and should summarize the proposed work and the actual progress made during the previous funding period.

**Proposed Research and Tasks:**

In addition to the technical description of the proposed work and tasks, include a discussion of the following:

- 0 Impact of the proposed research on other fields of science, if appropriate.
- 0 Project schedule, milestones, and deliverables.

**Appendix 1: Biographical Sketch Appendix.**

Provide a biographical sketch for the project director/principal investigator (PD/PI) and each senior/key person listed in Section A on the R&R Budget form. **Provide the biographical sketch information as an appendix to your project narrative. Do not attach a separate file.** The biographical sketch appendix will not count in the project narrative page limitation. The biographical information (curriculum vitae) for each person must not exceed 2 pages when printed on 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right) with font not smaller than 11 point and must include:

*Education and Training.* Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree and year.

*Research and Professional Experience:* Beginning with the current position list, in chronological order, professional/academic positions with a brief description.

*Publications.* Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically.

Patents, copyrights and software systems developed may be provided in addition to or substituted for publications.

*Synergistic Activities.* List no more than 5 professional and scholarly activities related to the effort proposed.

*Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers.* Provide the following information in this section:

Collaborators and Co-editors: List in alphabetical order all persons, including their current organizational affiliation, who are, or who have been, collaborators or co-authors with you on a research project, book or book article, report, abstract, or paper during the 48 months preceding the submission of this application. Also, list any individuals who are currently, or have been, co-editors with you on a special issue of a journal, compendium, or conference proceedings during the 24 months preceding the submission of this application. If there are no collaborators or co-editors to report, state “None.”

Graduate and Postdoctoral Advisors and Advisees: List the names and current organizational affiliations of your graduate advisor(s) and principal postdoctoral sponsor(s) during the last 5 years. Also, list the names and current organizational affiliations of your graduate students and postdoctoral associates during the past 5 years.

### **Appendix 2: Current and Pending Support.**

Provide a list of all current and pending support (both Federal and non-Federal) for the Project Director/Principal Investigator(s) (PD/PI) and senior/key persons, including subawardees, for ongoing projects and pending applications. For each organization providing support, show the total award amount for the entire award period (including indirect costs) and the number of person-months per year to be devoted to the project by the senior/key person. **Provide the Current and Pending Support as an appendix to your project narrative. Do not attach a separate file.** The Current and Pending Support Appendix will not count in the project narrative page limitation. Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review. Save the information in a separate file and attach to the “Attach Current and Pending Support” field in each profile.

### **Appendix 3: Bibliography & References Cited.**

Provide a bibliography of any references cited in the Project Narrative. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. Include only bibliographic citations. Applicants should be especially

careful to follow scholarly practices in providing citations for source materials relied upon when preparing any section of the application. **In order to reduce the number of files attached to your application, please provide the Bibliography and References Cited information as an appendix to your project narrative. This appendix will not count in the project narrative page limitation.**

**Appendix 4: Facilities & Other Resources.**

This information is used to assess the capability of the organizational resources, including subawardee resources, available to perform the effort proposed. Identify the facilities to be used (Laboratory, Animal, Computer, Office, Clinical and Other). If appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Describe other resources available to the project (e.g., machine shop, electronic shop) and the extent to which they would be available to the project. **In order to reduce the number of files attached to your application, please provide the Facility and Other Resource information as an appendix to your project narrative. This appendix will not count in the project narrative page limitation.**

**Appendix 5: Equipment.**

List major items of equipment already available for this project and, if appropriate identify location and pertinent capabilities. **In order to reduce the number of files attached to your application, please provide the Equipment information as an appendix to your project narrative. This appendix will not count in the project narrative page limitation.**

**Appendix 6: Other Attachment.**

If you need to elaborate on your responses to questions 1-5 on the “Other Project Information” document, **please provide this information as an appendix to your project narrative. This appendix will not count in the project narrative page limitation.**

**Do not attach any of the requested appendices described above as files for fields 9, 10, 11, and 12; instead follow the above instructions to include the information as appendices to the project narrative file (these appendices will not count in the project narrative page limitation).**

**3. RESEARCH AND RELATED BUDGET.**

Complete the Research and Related Budget form in accordance with the instructions on the form (Activate Help Mode to see instructions) and the following instructions. You must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. You must complete all the mandatory information on the form before the NEXT PERIOD button is activated. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See PART IV, G).

**Budget Justification (Field K on the form).**

Provide the required supporting information for the following costs (See R&R Budget instructions): equipment; domestic and foreign travel; participant/trainees; material and supplies; publication; consultant services; ADP/computer services; subaward/consortium/contractual; equipment or facility rental/user fees; alterations and renovations; and indirect cost type. Provide any other information you wish to submit to justify your budget request. **Attach a single budget justification file for the entire project period in Field K.** The file automatically carries over to each budget year.

**4. R&R SUBAWARD BUDGET ATTACHMENT(S) FORM.**

**Budgets for Subawardees, other than DOE FFRDC Contractors.** You must provide a separate cumulative R&R budget for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (whichever is less). If you are selected for award, you must submit a multi-year budget for each of these subawardees (See Section IV.D for submission of Subawardees' multi-year budgets). Download the R&R Budget Attachment from the R&R SUBAWARD BUDGET ATTACHMENT(S) FORM and e-mail it to each subawardee that is required to submit a separate budget. After the Subawardee has e-mailed its completed budget back to you, attach it to one of the blocks provided on the form. Use up to 10 letters of the subawardee's name (plus.xfd) as the file name (e.g., ucla.xfd or energyres.xfd).

**5. PROJECT/PERFORMANCE SITE LOCATION(s)**

Indicate the primary site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the blocks provided.

**Note that the Project/Performance Site Congressional District is entered in the format of the 2 digit state code followed by a dash and a 3 digit Congressional district code, for example VA-001. Hover over this field for additional instructions.**

Use the Next Site button to expand the form to add additional Project/Performance Site Locations.

**6. SF-LLL Disclosure of Lobbying Activities** If applicable, complete SF- LLL.

Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

## Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	Attach to
<b>SF 424 (R&amp;R)</b>	Form	N/A
<b>RESEARCH AND RELATED Other Project Information</b>	Form	N/A
Project Summary/Abstract	PDF	Field 6
Project Narrative, including required appendices	PDF	Field 7
<b>RESEARCH &amp; RELATED BUDGET</b>	Form	N/A
Budget Justification	PDF	Field K
<b>PROJECT/PERFORMANCE SITE LOCATION(S)</b>	Form	N/A
<b>SF-LLL Disclosure of Lobbying Activities, if applicable</b>	Form	N/A

### D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS.

If selected for award, DOE reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable

### E. SUBMISSION DATES AND TIMES.

#### 3. Letter of Intent.

Letters of Intent are not required.

#### 4. Preapplication.

Preapplications are **REQUIRED** and must be submitted by March 26, 2010, 11:59 PM Eastern Time. **Failure to submit a preapplication by an applicant will preclude the full application from due consideration.** The preapplication should be submitted electronically by E-mail to to [yvette.walker@science.doe.gov](mailto:yvette.walker@science.doe.gov) and [sam.barish@science.doe.gov](mailto:sam.barish@science.doe.gov). **Please include “Preapplication for DE-FOA-0000286” in the subject line.**

### 3. Formal Applications.

Formal applications submitted in response to this FOA must be received by April 30, 2010, 11:59 PM Eastern Time, to permit timely consideration of awards in Fiscal Year 2011. **You are encouraged to transmit your application well before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.**

### F. INTERGOVERNMENTAL REVIEW.

This program is not subject to Executive Order 12372 Intergovernmental Review of Federal Programs.

### G. FUNDING RESTRICTIONS.

Cost Principles. Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600.

Pre-award Costs. Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar-day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. Recipients must obtain the prior approval of the awarding agency/contracting officer for any pre-award costs that are for periods greater than this 90 day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

### H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS

#### 1. Where to Submit.

**Where to Submit:** Applications must be submitted through Grants.gov to be considered for award. You cannot submit an application through Grants.gov unless you are registered. Please read the registration requirements carefully and start the process immediately. Remember you have to update your CCR registration annually. If you have any questions about your registration, you should contact the Grants.gov Helpdesk at 1-800-518-4726 to verify that you are still registered in Grants.gov.

**All applications should be in a single PDF file.**

#### 2. Registration Process.

There are several one-time actions you must complete in order to submit an application (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). See <http://www.grants.gov/GetStarted>. Use the Grants.gov Organization



Registration Checklist at <http://www.grants.gov/assets/OrganizationRegCheck.doc> to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at **least 21 days** to complete these requirements. It is suggested that the process be started as soon as possible.

## Part V - APPLICATION REVIEW INFORMATION

### A. CRITERIA

#### 1. Initial Review Criteria.

Prior to a comprehensive merit evaluation, DOE will perform an initial review in accordance with 10 CFR 605.10(b).

#### 2. Merit Review Criteria

Applications will be subjected to scientific merit review (peer review) and will be evaluated against the following evaluation criteria which are listed in descending order of importance codified at 10 CFR 605.10(d):

##### 1. Scientific and/or technical merit of the project:

- What important problem(s) in plasma or fusion science does this application address? Does the application present an innovative approach to fusion energy sciences?
- How does the proposed research compare with other research in its field, both in terms of scientific and/or technical merit and originality?
- What is the likelihood that it will lead to new or fundamental advances in its field?

##### 2. Appropriateness of the proposed method or approach:

- Are the conceptual framework, methods, and analyses adequately developed and likely to lead to scientifically valid conclusions?
- Does the proposed research employ innovative concepts or methods?
- Does the applicant recognize significant potential problems and consider alternative strategies?

##### 3. Competency of the applicant's personnel and adequacy of the proposed resources:

- How well qualified are the applicant's personnel to carry out the proposed research? (If appropriate, please comment on the scientific reputation and quality of recent research by the principal investigator and other key personnel.)
- Please comment on the applicant's research environment and resources.
- Does the proposed work take advantage of unique facilities and capabilities and/or make good use of collaborative arrangements?

##### 4. Performance under existing award (for renewal applications):

- Assess the progress the applicants made during the most recent performance period and the impact of the research on the fusion program.
- Have the applicants disseminated the results of their research through publications in peer-reviewed journals, meeting and conference presentations, workshops, or other appropriate means?

##### 5. Reasonableness and appropriateness of the proposed budget:

- Are the proposed budget and staffing levels adequate to carry out the proposed research?

The reviewers are also asked to comment on **Other Appropriate Factors:**

- What are the overall strengths and weaknesses of the application?
- Could the proposed research make a significant contribution to another field?
- If applicable, please comment on the educational benefits of the proposed activity.

The evaluation will include program policy factors such as the relevance of the proposed research to the terms of the FOA and the agency's programmatic needs. It should be noted that external peer reviewers are selected on the basis of their scientific expertise and the absence of conflict-of-interest issues. Both Federal and non-Federal reviewers may be used, and submission of an application constitutes agreement that this review process is acceptable to the investigator(s) and the submitting institution.

Fusion Energy Sciences shall also consider, as part of the evaluation, other available advice or information such as ensuring an appropriate balance among the program areas and within the program areas, ensuring support for major computational efforts, ensuring support for experiments, and quality of previous performance. The selected projects will be required to acknowledge support by DOE in all public communication of the research results.

## **B. REVIEW AND SELECTION PROCESS.**

### **1. Merit Review.**

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Office of Science Merit Review System for Financial Assistance." This Merit Review System is available at <http://www.science.doe.gov/grants/merit.html>

### **2. Selection.**

The Selection Official will consider the merit review evaluation, program policy factors, and the amount of funds available.

### **3. Discussions and Award.**

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR part 600 and 605; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

## **C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES.**

It is anticipated that selections will be completed by October 21, 2010. Awards will be made in Fiscal Year 2011.

## **Part VI - AWARD ADMINISTRATION INFORMATION**

### **A. AWARD NOTICES.**

#### **1. Notice of Selection.**

DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Part IV.G with respect to the allowability of pre-award costs.)

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

#### **2. Notice of Award.**

A Notice of Financial Assistance Award or Assistance Agreement issued by the contracting officer is the authorizing award document. It normally includes, either as an attachment or by reference: 1. Special Terms and Conditions; 2. Applicable program regulations, if any; 3. Application as approved by DOE/NNSA; 4. DOE assistance regulations at 10 CFR Part 600; 5. National Policy Assurances to Be Incorporated As Award Terms; 6. Budget Summary; and 7. Federal Assistance Reporting Checklist, which identifies the reporting requirements.

### **B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS.**

#### **1. Administrative Requirements.**

The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR Part 600 and 10 CFR Part 605 (See: <http://ecfr.gpoaccess.gov>), except for grants made to Federal Demonstration Partnership (FDP) institutions. The FDP terms and conditions and DOE FDP agency specific terms and conditions are located on the National Science Foundation web site at [http://www.nsf.gov/awards/managing/fed\\_dem\\_part.jsp](http://www.nsf.gov/awards/managing/fed_dem_part.jsp).

#### **2. Special Terms and Conditions and National Policy Requirements.**

##### **Special Terms and Conditions and National Policy Requirements.**

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at [http://management.energy.gov/business\\_doe/business\\_forms.htm](http://management.energy.gov/business_doe/business_forms.htm). The National Policy Assurances to Be Incorporated As Award Terms are located at [http://management.energy.gov/business\\_doe/business\\_forms.htm](http://management.energy.gov/business_doe/business_forms.htm).

##### **Intellectual Property Provisions.**

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at [http://www.gc.energy.gov/financial\\_assistance\\_awards.htm](http://www.gc.energy.gov/financial_assistance_awards.htm).

**C. REPORTING.**

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F4600.2, attached to the award agreement.

## PART VII - QUESTIONS/AGENCY CONTACTS

### A. QUESTIONS

Questions regarding the content of the announcement must be submitted through the FedConnect portal. You must register with FedConnect to respond as an interested party to submit questions, and to view responses to questions. It is recommended that you register as soon after release of the FOA as possible to have the benefit of all responses. More information is available at <http://www.compusearch.com/products/fedconnect/fedconnect.asp> and [https://www.fedconnect.net/FedConnect/PublicPages/FedConnect\\_Ready\\_Set\\_Go.pdf](https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf). DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or [support@grants.gov](mailto:support@grants.gov). DOE cannot answer these questions.

### B. AGENCY CONTACTS:

Computation/Simulation: Dr. John Mandrekas, Research Division, SC-24.2, Telephone (301) 903-0552, or by E-mail: [john.mandrekas@science.doe.gov](mailto:john.mandrekas@science.doe.gov)

Open Systems : Dr. Curtis Bolton, Research Division, SC-24.2, Telephone (301) 903-4914, or by E-mail: [curt.bolton@science.doe.gov](mailto:curt.bolton@science.doe.gov)

Spherical Tori: Dr. Stephen Eckstrand, Research Division, SC-24.2, Telephone (301) 903-5546, or by E-mail: [steve.eckstrand@science.doe.gov](mailto:steve.eckstrand@science.doe.gov)

All Other Subjects: Dr. Samuel J. Barish, Research Division, SC-24.2, Telephone: (301) 903-2917, or by E-mail: [sam.barish@science.doe.gov](mailto:sam.barish@science.doe.gov)

## **PART VIII - OTHER INFORMATION**

### **A. MODIFICATIONS.**

Notices of any modifications to this announcement will be posted on Grants.gov and the FedConnect portal. You can receive an email when a modification or an announcement message is posted by registering with FedConnect as an interested party for this FOA. It is recommended that you register as soon after release of the FOA as possible to ensure you receive timely notice of any modifications or other announcements. More information is available at <http://www.fedconnect.net> and <http://www.compusearch.com/products/fedconnect/fedconnect.asp>.

### **B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE.**

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

### **C. COMMITMENT OF PUBLIC FUNDS.**

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

### **D. PROPRIETARY APPLICATION INFORMATION.**

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

“The data contained in pages \_\_\_\_\_ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government’s right to use or disclose data obtained without restriction from any source, including the applicant.”

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

“The following contains proprietary information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation.”

## **E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL.**

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

## **F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM.**

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See “Notice of Right to Request Patent Waiver” in paragraph G below.)

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE’s own needs or to insure the commercialization of technology developed under a DOE agreement.

## **G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER.**

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

## **H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES**

N/A

## **I. REFERENCE MATERIAL**

N/A