

Opportunity Title: U.S. DOE Fusion Energy Sciences Postdoctoral Research Program

Opportunity Reference Code: DOE-FES-2015

Organization U.S. Department of Energy (DOE)

Reference Code DOE-FES-2015

How to Apply Completed applications must be submitted by September 15, 2015.
Letters of recommendation must be received by September 30, 2015.

- **Application** – including responses to questions specific to the program, proposed hosting facility, and proposed research plan. You must identify a hosting facility and potential mentor currently conducting or directing research in an area related to FES. Click here for a list of facilities that have hosted FES Fellows in the past and may consider hosting additional Fellows. You may proposed a hosting facility not included in this list.
- **Résumé or Curriculum Vitae (CV)** – including academic history, employment history, relevant experiences and publications list.
- **Transcripts** – Transcripts may be unofficial transcripts issue to the students are accepted. Selected candidate must provide proof of completion of the degree before the appointment can start. Proof must be sent to ORISE directly from the academic institution including graduation date and degree awarded.
- **Two Letters of Recommendation** – One of the letters must be from your thesis or dissertation advisor.

Important Information

- Documents sent by email, postal mail, or fax will not be considered.
- Supporting materials must be uploaded as a PDF files to ensure the document can be searched by Zintellect's search engine. Scanned items are not optimal for search engines. PDF must not require special certificates or passwords to open. Maximum file size is 10MB.
- All documents must be in English or include an official English translation.

If you have questions, please send an email to Fusion@orau.org.

Application Deadline 9/15/2015 11:59:00 PM Eastern Time Zone

Description The Fusion Energy Sciences (FES) Postdoctoral Research Program offers recent doctoral degree recipients the opportunity to conduct research supporting the mission of the U.S. Department of Energy's (DOE), Office of Science, Fusion Energy Sciences research and development programs. Participants acquire experience and training in areas related to fusion energy and basic plasma science, interact with outstanding scientists and engineers, and have access to advanced equipment and facilities.

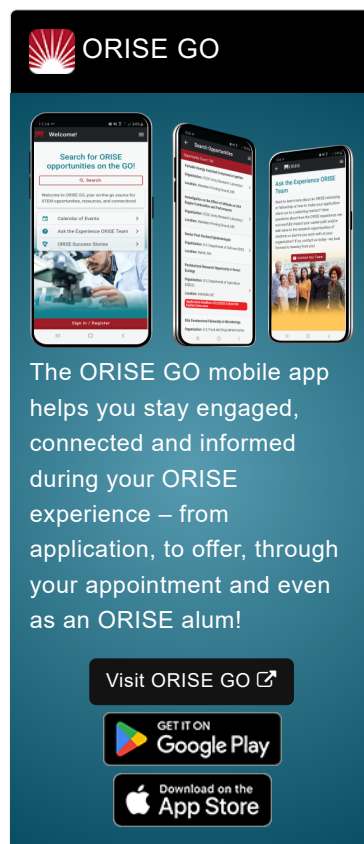
For more information about DOE Fusion Energy Sciences (FES):
<http://science.energy.gov/fes/>

Participant Benefits

Participants receive an annual stipend of \$67,000 plus limited reimbursement for health insurance costs. The program will provide a one-





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time \$5,000 relocation allowance. The program will also support one trip per year to an FES-related conference or to another federal research facility.

Appointments are for up to two years. The initial appointment period for is one year. Extension of the appointment for a second year will be subject to satisfactory progress toward completion of the project assignments, and availability of funds.

Nature of the Appointment

Participants will not enter into an employee/employer relationship with ORISE, ORAU, the DOE, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment.

For additional information about the Fusion Energy Sciences (FES) Postdoctoral Research Program, please visit: <http://www.ornl.gov/doe-fes-postdoc/>

This opportunity is available to U.S. citizens or Lawful Permanent Residents (LPR) if a foreign national. This is an equal opportunity program open to all qualified individuals without regard to race, color, age, sex, religion, national origin, mental or physical disability, genetic information, sexual orientation, or covered veteran's status.

Qualifications An applicant must have received a doctoral degree in an appropriate science or engineering discipline within three years of the desired starting date or expect to complete all requirements for such a degree prior to the desired starting date. The desired starting date must be before December 31 of the application year.

U.S. citizenship or lawful permanent resident status is also required.

The selection of participants is based on academic records; letters of recommendations; science and engineering background; interests and professional goals; statement of research to be performed; compatibility of research interests with the sponsor's research programs and resources; and availability of funds, staff, programs, and equipment. Preference is given to applicants who request a research facility other than the one where the doctoral degree was obtained.

Preferred skills

Participants should have skills and /or experience in topics addressed by this program:

- Experimental Plasma Physics
- Theoretical Plasma Physics
- Computational Plasma Physics
- Plasma-Material Interfacial Science
- Fusion Materials Science

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- Plasma Control Science
- Advanced Diagnostics

Research supported in this program must be directed toward addressing problems at the frontiers of plasma science, specifically in the following areas:

Burning Plasma Science

Research supported in this area will advance the predictive understanding of plasma confinement, dynamics, and interactions with surrounding materials, through the use of magnetic confinement fusion research facilities or leadership-class computing resources. Among the topics addressed by this program are the macroscopic stability and dynamics of fusion plasmas; the understanding and control of turbulent transport processes; radiofrequency (RF) wave heating and current drive; energetic particle dynamics; multi-scale and multi-physics processes at the plasma edge; and the interaction and interface of the hot plasma boundary with the material walls.

Additionally, FES actively encourages applications that utilize and advance the enabling technology needed to enhance the capabilities for existing and next-generation fusion research facilities, allowing these facilities to achieve higher levels of performance and flexibility needed to explore new science regimes. This includes but is not limited to RF and neutral beam physics and engineering.

This priority area also supports the development of advanced diagnostic capabilities to enable close coupling of experiments and theory/computations for existing facilities; diagnostic systems relevant for the extreme conditions to be encountered in ITER; and sensors and actuators required for active control of plasma properties to optimize device operation and plasma performance.

Plasma Science Frontiers

The ability to create and manipulate plasmas with densities and temperatures spanning many orders of magnitude has led to the establishment of plasma science as a multi-disciplinary field, necessary for understanding the flow of energy and momentum in astrophysical plasmas, as well as enabling the development of breakthrough technologies.

Research supported in this priority area must be directed toward addressing problems at the frontiers of plasma science, specifically in the following areas:

- **General Plasma Science** – Understanding the behavior of non-neutral and single-component plasmas, ultra-cold neutral plasmas, dusty plasmas, and micro-plasmas, as well as the study of dynamical processes in classical plasmas including turbulence and turbulent transport, plasma waves, structures, and flows.
- **High Energy Density Laboratory Plasmas** – Structural and dynamical studies of ionized matter at extreme densities and temperatures.

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- **Exploratory Magnetized Plasma** – Research on complex, magnetized plasma systems that spontaneously evolve toward a state of long-range order through dissipative processes (e.g., compact toroidal plasma).

Eligibility

- **Citizenship:** LPR or U.S. Citizen

Requirements

- **Degree:** Doctoral Degree received within the last 40 month(s).

- **Discipline(s):**

- **Chemistry and Materials Sciences** ([12](#))
- **Computer, Information, and Data Sciences** ([1](#))
- **Earth and Geosciences** ([3](#))
- **Engineering** ([4](#))
- **Mathematics and Statistics** ([1](#))
- **Physics** ([16](#))
- **Science & Engineering-related** ([1](#))