

U.S. DEPARTMENT OF ENERGY
OFFICE OF NUCLEAR ENERGY, SCIENCE, AND TECHNOLOGY



**Nuclear Engineering and Health Physics
Fellowship Program**

Student Deadline for Applications for 2007-2008
January 31, 2007

Awards Announced April 2007

Administered by:

The Medical University of South Carolina (MUSC), Special Programs Office through a Cooperative Agreement with the South Carolina Universities Research and Education Foundation (SCUREF)

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ACADEMIC YEAR: 2007-2008

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AN INTRODUCTION TO THE NUCLEAR ENGINEERING AND HEALTH PHYSICS FELLOWSHIP PROGRAM

This program is designed to meet the Department of Energy's (DOE) needs for appropriately trained personnel for the maintenance and development of nuclear power technology and for research related to ongoing programs at DOE facilities. Increasing costs for graduate education and a high demand for nuclear engineers and health physicists with a bachelor's degree have had a negative impact on the number of well-qualified students seeking advanced degrees in fission technologies and the related sciences. However, current and planned uses of fission reactors for energy generation and research support at DOE facilities emphasize the importance of appropriately educated, highly qualified nuclear engineers and health physicists with advanced degrees. This fellowship program is designed to encourage talented students to continue their education and seek an advanced degree in a related nuclear energy field. The program will assist in preparing students for leadership roles in fission technology and will support the broader objective of advancing fission energy through the research efforts of the fellows.

RELATED TECHNICAL AREAS

The objective of the Nuclear Engineering and Health Physics (NE/HP) Fellowship program is to meet DOE needs for highly trained scientists and engineers in the noted technical areas in which DOE has ongoing research and development programs. Some of these areas include:

NUCLEAR ENGINEERING technical areas include; the nuclear fuel cycle; nuclear reactor safety and safeguards; nuclear materials science and engineering (including space reactors); nuclear reactor engineering; advanced concepts in nuclear engineering; and radiation interaction and detection.

HEALTH PHYSICS technical areas include; radiation interaction, detection, and dosimetry; radiation protection standards and regulations; biological effects, risk assessment and ALARA (As Low As Reasonably Achievable Radiation Exposure) concepts; facility design and nuclear safety; radiological emergency management; environmental monitoring and assessment; and nuclear waste management. This program is not intended to support medical physics.

APPLICATION PROCEDURES

ELIGIBILITY

Students that have pursued an undergraduate degree in the physical sciences, life sciences, or engineering are eligible to apply for the Nuclear Engineering/Health Physics Fellowship. During the 2007-08 academic year, the program is open to entering graduate students and all returning graduate students who will have at least one full year of graduate work remaining at the beginning of September 2007. *Preference will be given to entering graduate students.* An applicant may apply for either the Nuclear Engineering component **or** the Health Physics component of the program, but **not** both. The award is limited to a maximum of 24 months for master's candidates and a maximum of 48 months for doctoral candidates. A fellowship appointment may not exceed 48 months and all appointments will be prorated for previous graduate work. The length of the fellowship appointment is based on the amount of graduate work completed before the initial fellowship appointment date.

Applicants must be either U.S. citizens or permanent resident aliens. It is the policy of the Medical University of South Carolina (MUSC) to recruit and select participants without regard to race, age, gender, religion, color, national origin, physical or mental disability, or special disabled or Vietnam Era Veteran status.

APPLICATION DEADLINE

Application forms will be available from approximately September to January of each year. *Applications from previous years or from other fellowship programs may not be used.* Completed applications will be accepted until January 31st for fellowships beginning the following September.

Electronic applications can be found at <http://www.musc.edu/specialprograms>

An application is made up of the following sections:

1. Application
2. Three professional letters of reference
3. Current official transcripts (from **all** undergraduate **and** graduate schools attended)
4. *Official GRE scores (ETS reporting code is 5949)
* We will accept GRE scores that (a) are sent directly from ETS, (b) scores on an official or college transcript, or (c) scores sent to us directly by the applicant on the official ETS report form.

Please Note: All parts of the application must be received by The Special Programs Office at the Medical University of South Carolina (MUSC) by January 31, 2007.

GRE scores are *required* for a complete application. Late and/or incomplete applications will not be reviewed for awards. GRE scores earned before October 1997 will not be accepted.

Mail completed applications to:

Medical University of South Carolina
Special Programs Office, NE/HP Fellowship
19 Hagood Avenue, HOT 304-H4
P.O. Box 250851
Charleston, SC 29425

Phone: (843) 792-1469
Fax: (843) 792-0235
Email: cardern@musc.edu

Please include fellowship program name on **all** of your correspondence to MUSC.

FELLOWSHIP OBLIGATIONS

ENROLLMENT

During the fellowship period, fellows are expected to be registered and enrolled as full-time graduate students and perform study and research within the objectives of the fellowship program. During the summer, fellows should be involved in full-time research related to the completion of their degree, be enrolled in classes, and/or be on practicum assignments. Fellows are required to participate in a practicum for at least three months at a DOE facility in order to gain real world experience. Prior internships or similar appointments to DOE facilities may not be substituted for the practicum requirement associated with this fellowship.

TERMS OF APPOINTMENT

Each fellow must agree to the conditions contained in the letter of appointment and the official Terms of Appointment. A fellow also agrees to entertain employment with DOE or one of its contractors at the end of a fellow's academic program should a reasonable offer be extended.

ANNUAL RENEWAL OF FELLOWSHIP

During the fellowship appointment period, fellows will be required to complete the Fellowship Renewal Applications regarding academic performance and course of study. These forms are to be completed and submitted along with current official transcripts to MUSC by January 31st of each year. In addition, continuing evaluation of the fellowship experience continues for five years after the fellow has completed the program and periodically thereafter. Fellows must inform MUSC's Special Programs Office of their current addresses and must complete any evaluation/assessment questionnaires sent by MUSC for program information and/or evaluation. Renewal forms can be found at <http://www.musc.edu/specialprograms>.

PRACTICUM

Each fellow is required to complete a three-month practicum at a DOE facility. The practicum is normally held during the summer at the end of the first academic year. To encourage a broad range of opportunities, a practicum assignment will ordinarily only be approved for a practicum facility more than 50 miles from the fellow's university. DOE practicum facilities can be found on the Special Programs website (<http://www.musc.edu/specialprograms>). Prior internships or similar appointments to DOE facilities may NOT be substituted for the practicum requirement associated with this fellowship.

PROGRAMS AT PARTICIPATING UNIVERSITIES

Fellowship awardees must attend a university designated as a participating university in the Nuclear Engineering/Health Physics Fellowship Program. A list of participating universities and University Fellowship Coordinators can be found on page nine (9) of this booklet. Fellowship coordinators may be contacted directly by interested applicants for in-depth information on their nuclear engineering or health physics programs. All participating universities must undergo an application process. A university's inclusion on the participating university list represents the Department of Energy's acknowledgment of the strength of its program.

Note: Fellowships may only be held at DOE-specified institutions appearing on this list.

Applicants must list more than one university preference on the NE/HP Fellowship Application Form if they are entering graduate students. Should an award not be available at the applicant's first choice university, an award may be offered to the fellow at their second-choice university listed on their application. If an applicant's university preference changes after the application is submitted, MUSC must be notified immediately.

EVALUATION OF APPLICATIONS

Upon receipt, each application is checked by the program coordinators to ensure that the applicant meets the basic criteria for the program and has supplied all necessary application materials. If time permits, the staff will attempt to contact applicants who have submitted an incomplete application. However, it is the applicant's responsibility to check with MUSC to ensure that an application is complete.

After an application is reviewed and designated complete, it is submitted along with all other complete applications for review by a panel of experts. The review panel is composed of university and DOE facility personnel, who are directly responsible for instruction and research in either nuclear engineering or health physics. The panel evaluates each application and recommends award recipients. Applications are reviewed on the basis of grades, previous coursework, GRE scores, career and goals statement, and references. Other factors, including geographical criteria and professional personnel needs of the DOE nuclear engineering and health physics research program, are also considered. The Department of Energy reviews the panel's recommendations as well as the applications and approves the final selection.

The number of awards given each year is dependent on the number of graduating fellows currently in the program and on available funding. Some applicants who did not receive an award are selected for "Honorable Mention" status. This status recognizes their achievements and places them on a list for a possible award should additional funding become available.

After the Department of Energy approves the award recipients, MUSC notifies applicants of their award status. Notification usually occurs in April. Once fellowships are awarded, MUSC handles the administration of the fellowship for DOE. Questions about stipends, payment of tuition and fee, practicum assignments, travel, etc. should be referred to MUSC, Special Programs Office.

PROGRAM BENEFITS

Fellows receive a monthly stipend in the amount of \$1,700. The fellow's basic stipend is augmented by a \$300 (prorated) dislocation allowance each month during the practicum. The dislocation allowance will not be provided to the fellow if the distance to/from the practicum site is less than 50 miles one way from the fellow's university. Stipends are mailed directly to the fellow each month. During the practicum, the stipend and allowance can be mailed to where the fellow is living at that time.

The Department of Energy attempts to provide adequate funding to its fellowship participants for meeting the cost of graduate school. If a fellow accepts a research assistantship or other responsibilities where funds are provided, MUSC must be informed in advance and any resulting payments may be deducted from the fellow's stipend. In addition, other awards, prizes, and similar type payments (including veteran's benefits) that do not require a service may be accepted by the fellowship participant. Please contact MUSC if you have a question regarding accepting the NE/HP Fellowship in conjunction with any other award, prize, or similar type payment.

TUITION AND FEES

The fellows required tuition and fees are paid by MUSC directly to the participating university upon receipt of invoice. Optional, refundable, and penalty fees (such as late registration and duplication fees) are not payable by MUSC. Health insurance fees will be paid by MUSC only if they are certified to be required for all graduate students. All tuition and fee charges must be certified to be consistent with those made to regular graduate students and necessary for enrollment into the graduate program.

In August of each year, MUSC notifies the bursar's office at each university regarding invoice procedures for fellowship students. Students will receive a copy of this correspondence and should retain this copy for use in discussing any billing errors with their university's bursar office.

PRACTICUM

Fellows are required to serve one practicum of at least three months in duration and may serve more than one practicum if funding is available. Travel expenses will be reimbursed for the fellow to travel to/from the practicum site providing that the distance is more than 50 miles one way from the fellow's university. Transportation expenses for travel actually performed will be paid. Travel by private automobile will be reimbursed at the current federal privately owned vehicle (POV) reimbursement rate per mile; travel by air will be reimbursed at the cost of the lowest commercial airfare. No expenses are paid for food or lodging at the practicum site. All travel must be authorized in advance by the MUSC, Special Programs Office.

To initiate a practicum appointment the fellow needs to contact MUSC for a practicum request form *at least 8 weeks in advance of the practicum date*. Subsequently, the fellow will need to contact a laboratory coordinator and express an interest in participating at the listed facility. Information on DOE facilities can be found by going to the DOE website located at <http://www.energy.gov>

CONFERENCE TRAVEL

Fellows have the opportunity, dependent upon available funding, to attend national or international conferences. Reimbursement for conference travel is only approved when the student is presenting a paper or poster. Requests for travel funds should be made in writing to the fellowship office at MUSC at least eight weeks before the anticipated travel dates. Travel request forms can be found at <http://www.musc.edu/specialprograms>.

THESIS RESEARCH AT PARTICIPATING DOE CENTERS

A fellow may request to spend all or part of the time working on thesis/dissertation research at one of the participating DOE facilities. To request off-campus research, a fellow should complete a request form (available from MUSC) and have it endorsed by the faculty advisor, university coordinator, and DOE facility coordinator. The faculty advisor must agree to continue to supervise the fellow's progress throughout the research work and must participate in the necessary coordination with DOE facility personnel. The faculty advisor will be reimbursed for travel expenses, in accordance with MUSC's Travel Policy, for one round trip to the facility for review and coordination of the fellow's research.

For the fellow, travel mileage will be paid for one round trip to/from the research facility providing that the distance is more than 50 miles one way. Travel expenses will also be provided for one round trip to/from the facility for the fellow to consult with the university graduate committee and/or to present a seminar on results of the thesis research.

A research advisor from the DOE facility should be assigned by the facility for the fellow. This advisor should also be nominated for appointment to the fellow's graduate thesis research committee.

PUBLICATION ACKNOWLEDGMENT

DOE and MUSC encourage fellows to publish reports and articles in scientific and engineering journals. The fellow must submit any articles, reports, or theses to MUSC concurrently with the submission for publication. All publications must show the joint affiliation of the fellow with the university and, if appropriate, with the laboratory in which the research was conducted, and should acknowledge fellowship support.

Fellowship support should be acknowledged in the following manner:

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