FY 2018 Fellowship Grant Awards

Institution	Amount	Title
Clemson University	$400,000	Fellowship Education Grant at Clemson University
Colorado School of Mines	$400,000	Colorado School of Mines Nuclear Science and Engineering Fellowship Program
Florida International University	$394,852	FIU Nuclear Fellowship Program: Expanding the new FIU Radiochemistry Ph.D. track
Georgia Institute of Technology	$400,000	The Nuclear and Radiological Engineering Fellowship Program at the Georgia Institute of Technology
Massachusetts Institute of Technology	$400,000	Massachusetts Institute of Technology (MIT) Nuclear Education Grant Fellowship Program
Ohio State University	$400,000	Ohio State University Fellowship Program FY 2018
Pennsylvania State University	$400,000	The Pennsylvania State University Nuclear Education Fellowship
Rensselaer Polytechnic Institute	$400,000	Rensselaer Nuclear Science and Engineering Research Fellowship Program
University of California, Berkeley	$400,000	Training the Next Generation of Nuclear Engineers: Graduate Fellowships at the University of California, Berkeley
University of Illinois at Urbana-Champaign	$400,000	University of Illinois at Urbana-Champaign Nuclear Engineering Education Fellowship Program
University of Michigan	$400,000	Nuclear Engineering Graduate Fellowship Program at the University of Michigan
University of Nevada, Reno	$399,999	The University of Nevada, Reno Fellowship Program in Materials and Thermal Science for Nuclear Energy
University of Pittsburgh	$400,000	Pitt Nuclear Engineering Graduate Fellowship Program

Virginia Commonwealth University	$400,000	VCU Nuclear Engineering Graduate Fellowship Program
Virginia Polytechnic Institute and State University	$400,000	Virginia Tech Multi-campus Nuclear Engineering Fellowship Program
Worcester Polytechnic Institute	$399,999	WPI Nuclear Sciences and Engineering Graduate Fellowship Program

Fellowship Education Grant at Clemson University

Executive Summary:

Fellowships are requested to support three graduate students per year in the nuclear environmental engineering and science (NEES) program within the Environmental Engineering and Earth Sciences Department at Clemson University. Fellowship students will pursue a course of study in either Environmental Health Physics (ABET-ASAC accredited at MS level) or Environmental Radiochemistry. Fellows will conduct their thesis/dissertation research in collaboration with an outside partner such as a national laboratory, utility, or regulatory agency. This will provide fellows with an opportunity both to interact with a practicing professional and to conduct research that contributes to the solution of a contemporary technical issue in the nuclear sector.

The NEES program is a graduate only academic program established in the early 1980's. The program focuses on the environmental aspects of nuclear technologies, including environmental health physics, radioecology, radioactive waste processing, environmental risk assessment, the nuclear fuel cycle, radiation detection and measurement, environmental radiochemistry, and environmental remediation. Over the past five years, the average number of enrolled M.S. and Ph.D. students in our degree programs has been > 20 per year, with an average of about five graduating per year. The continued success of the program demonstrates the strength of the interdisciplinary approach to education and research in the nuclear environmental sciences.

Principal Investigator: Nicole E. Martinez, nmarti3@clemson.edu

Colorado School of Mines Nuclear Science and Engineering Fellowship Program

Executive Summary:

Starting in the 2015/2016 academic year, the Colorado School of Mines (CSM) established a Nuclear Science and Engineering graduate fellowship program to increase graduate enrollment in our graduate nuclear engineering degree programs. The funding requested will add support for two additional graduate Fellows per year with the intention to attract top students to the Nuclear Science and Engineering (NSE) Program. Potential Fellows will be nominated by Nuclear Science and Engineering Faculty Members from the pool of NSE Program applicants and the nominating faculty member must agree to mentor and advise the Fellow throughout the Fellow's time at CSM. Leveraged funding from CSM is available to supplement the support from NRC. Particular emphasis will be placed on encouraging and tracking the Fellows' academic and research progress. While predominantly aimed at Ph.D. candidates, outstanding M.S. students will also be considered.

Principal Investigator: Jeffrey King, kingjc@mines.edu

FIU Nuclear Fellowship Program: Expanding the new FIU Radiochemistry Ph.D. track

Executive Summary:

Objective: Maintain our robust FIU Nuclear Fellowship (FNF) Program by supporting 2 PhD students for our PhD Radiochemistry Track for Y1 and Y2, and 3 students for Y3 and Y4. These radiochemistry Ph.D. graduates will support the nuclear industry, DOE National Labs and academia. This grant will complement FIU's current NRC grants for FIU Nuclear Research Fellowships, Scholarships, and Faculty Development. A total of 10 annual fellowships will be funded on this grant over 4 years at a cost of $394,852. FIU has provided a cost match of $135,402 on this grant, in the form of tuition waivers, faculty effort, and foregone indirect costs. **Benefits**: FIU's nuclear program has expanded with extensive research and infrastructure support from the US-DOE, DOE National Labs, and Industry. FIU's Nuclear Scholars and Fellows programs have increased our students' interest in nuclear & radiochemistry careers. The number of awarded Nuclear Scholars and Fellows has grown to 23, and 7 respectively, with increasing demand. Efforts to provide career opportunities for Ph.D students in this program will expand beyond NRC and DOE (labs, feds, & contractors) to include several nuclear companies this year (see Niowave and SRNL letters of support). Nuclear Fellows will receive mentoring and fellowship support of $23,460/yr for Ph.D. plus a tuition waiver (entirely cost-shared by FIU). Students will be recruited internally (e.g., through FIU's Nuclear Scholarship Program) and externally through FIU's recruiting efforts from targeted undergraduate institutions with strong bachelor's programs, in our partnership with our NSF-REU Program. FIU's students are 61% Hispanic; 15% white/non-Hispanic; 13% Black; 4% Asian; and 7% other minorities. The FIU Nuclear Fellows' research and careers will support and benefit the nuclear sector in Miami-Dade County, South Florida, and across the nation.

Principal Investigator: Konstantinos Kavallieratos, kavallie@fiu.edu

The Nuclear and Radiological Engineering Fellowship Program at the Georgia Institute of Technology

Executive Summary:

The Nuclear and Radiological Engineering (NRE) program in the Woodruff School at Georgia Tech is proposing to create a nuclear and radiological engineering fellowship program. The fellowship program will provide 8 one-year fellowships (2 fellowships each year for 4 years) for highly qualified graduate students. The proposed fellowships will cover up to the cost of tuition, mandatory student fees, books and supplies, and stipends. The fellowship program will focus on the recruiting and retention of top nuclear engineering students who come to Georgia Tech to obtain an MS or Ph.D. degree in nuclear engineering.

Principal Investigator: Steven Biegalski, steven.biegalski@me.gatech.edu

Massachusetts Institute of Technology (MIT) Nuclear Education Grant Fellowship Program

Executive Summary:

The MIT Nuclear Education Grant fellowship program, administered in the department of Nuclear Science & Engineering with U.S. NRC grant funds, is expected to strengthen the ability of the department of Nuclear Science and Engineering to attract talented graduate students by providing an additional means to offer full financial aid to those students who are undecided between the field of nuclear science and engineering and other engineering disciplines. The MIT Nuclear Education Grant fellowship program will also provide students with opportunities to work on research projects that are relevant to the U.S. NRC and the nuclear industry. Many of these research projects are being conducted with nuclear industry support and/or involvement, thus creating opportunities for direct and meaningful interactions among the students and nuclear industry.

Principal Investigator: Jacopo Buongiorno, jacopo@mit.edu

Ohio State University Fellowship Program FY 2018

Executive Summary:

The Ohio State University Nuclear Engineering Program proposes to administer a fellowship program grant that will provide 18 terms of graduate fellowship support over 4 years. It is anticipated that six graduate students will receive support during the course of the program. In recent years, fellowship support by the NRC has played a major role in attracting quality domestic students to our program, with assurance that at the end of their education they will enter the nuclear workforce. The proposal describes the manner in which candidates would be recruited, fellows selected, and how the effectiveness of the program periodically would be reviewed and improved. Special effort is involved in the recruiting program to attract qualified students from under-represented groups to be included in the pool of students evaluated. The awardees of this fellowship are expected to conduct research in areas that are related to Nuclear Reactor safety, which includes Probabilistic Risk Assessment, Instrumentation and Control, Materials Science, Radiation Detection and Measurement, and Reactor Physics.

Principal Investigators: Marat Khafizov, khafizov.1@osu.edu

The Pennsylvania State University Nuclear Education Fellowship

Executive Summary:

The Department of Mechanical and Nuclear Engineering at Penn State University is committed to maintaining its rich history by strengthening its prominent nuclear engineering program. This proposal describes a plan to create graduate fellowships in nuclear engineering utilizing funds from the U.S. Nuclear Regulatory Commission's (NRC) Nuclear Education Program Fellowship Grant Program. One fellowship will be for a four year period with beginning in Fall 2018 semester and continuing through the Spring 2022 semester. This amount is approximately equivalent to our graduate research assistant support and with additional funds provided by our cost match will provide two fellows with full four-year support with full tuition and fees coverage and majority funding in the summer.

Recipients will be selected based on prior academic performance as demonstrated in their application to graduate school. Consideration will also be given to minorities and women to encourage them to enter our nuclear engineering graduate program.

Our Department contains both mechanical and nuclear engineering programs with separate and distinct degree programs in each of the two areas. Penn State offers the Master of Science (thesis and non-thesis options), the Master of Engineering and the Doctor of Philosophy degrees in nuclear engineering. There are currently 41 resident graduate students enrolled in nuclear engineering at Penn State University Park.

In addition, there are 48 students taking courses through our nuclear engineering distance learning program, seeking a master of engineering degree. Distance graduate students do not receive any financial aid. Of the 41 on-campus nuclear engineering graduate students, 27 are doctoral students and 14 are M.S. students.

Our graduate program's size, coupled with our strong curriculum in nuclear power, means each year Penn State produces a large number of new engineers that enter the nuclear power workforce. Last year Penn State awarded 14 M.Eng., 7 M.S., and 6 Ph.D degrees in nuclear engineering. Our MS, MEng and PhD graduates are highly recruited by all sectors associated with nuclear power, including vendors, utilities, national laboratories, academia, and government agencies.

Principal Investigator: Arthur T. Motta, atm2@psu.edu

Rensselaer Nuclear Science and Engineering Research Fellowship Program

Executive Summary:

The objective of the proposed fellowship program is to attract and train more excellent graduate students in nuclear science and engineering, thus developing and maintaining the nuclear workforce in US industry, government and research institutes. We will offer fellowship support for graduate students to pursue education and careers in the nuclear science and engineering field. Students who are awarded Fellowship will receive a full tuition waiver and a competitive graduate student stipend per calendar year. Up to two fellowships shall be awarded per year, over four years. The project will ultimately benefit US nuclear energy sectors by promoting two important goals. First, by supporting new graduate students, the fellowship will encourage advanced training and experience for those entering the nuclear field. Second, the fellowship opportunities will increase the interest in nuclear science and engineering graduate study, leading to a greater number and diversity of those being trained in nuclear energy and technology.

Principal Investigator: Wei Ji, jiw2@rpi.edu

Training the Next Generation of Nuclear Engineers: Graduate Fellowships at the University of California, Berkeley

Executive Summary:

The Department of Nuclear Engineering at the University of California, Berkeley (UCB) offers one of the best Graduate Program in the Nation and worldwide. Students graduating from our program are highly sought by industry, national laboratories, and academia. The number of highly qualified students that apply to join our program is steadily increasing. However, due to limited funding, we have not been able to admit as many of the qualified applicants as we would like. The proposed fellowship program will support at least four Ph.D. students with a 2-year graduate fellowship, and will be leveraged to create a long-term sustainable strategy for growing our Graduate Program. Using the existing opportunities and systems readily available in the College of Engineering and the Nuclear Engineering Department at UCB, we will continue to grow an effective system for recruitment, selection, monitoring/mentoring, and feedback.

Principal Investigator: Massimiliano Fratoni, maxfratoni@berkeley.edu

University of Illinois at Urbana-Champaign Nuclear Engineering Education Fellowship Program

The objectives of this program are to attract and educate top US graduate students in nuclear engineering. This will be accomplished with the financial resources from the NRC and the academic and administrative resources from the Department of Nuclear, Plasma, and Radiological Engineering (NPRE) at the University of Illinois at Urbana-Champaign. This program will ensure that the best and brightest students are well prepared to join the nuclear workforce following a very strong, competitive graduate education in nuclear engineering. The NRC Fellowship resources will be used to attract, mentor and support at least three (3) graduate students each year for the four year duration of the award.

Principal Investigator: Rizwan Uddin, rizwan@illinois.edu

Nuclear Engineering Graduate Fellowship Program at the University of Michigan

Executive Summary:

The Department of Nuclear Engineering and Radiological Sciences (NERS) proposes a Nuclear Engineering (NE) Graduate Fellowship Program that will provide support for 2 students per year for 4 years as NE Fellows. Fellows will be US citizens or permanent residents. The MS Fellows will receive 1 year support with a guarantee of an additional term of support from Department resources if needed to complete their MS degree. The NE PhD students will be supported by the NE Fellowship for up to 2 years. NERS will provide cost sharing to cover the costs of supporting 2 students per year, regardless of MI residency status. Fellowship support will include 12 months of support at the standard graduate student stipend rate and medical benefits and tuition/fees. Oversight for the NE Fellowship Program will be provided by the NE Fellowship Committee consisting of NERS faculty and staff. This committee will select the NE Fellows, monitor their progress, and evaluate the effectiveness of the NE Fellowship Program.

Principal Investigator: Annalisa Manera, manera@umich.edu

The University of Nevada, Reno Fellowship Program in Materials and Thermal Science for Nuclear Energy

Executive Summary:

For over 20 years, faculty members at the University of Nevada, Reno (UNR) have been involved in externally-funded research on the performance and reliability of materials in advanced nuclear power applications and the safety of packaging used for transfer, storage and transport of nuclear materials. This work has been funded by the Nuclear Regulatory Commission (NRC), the Department of Energy (DOE), Nuclear Energy University Program (NEUP), National Laboratories, the State of Nevada and industry. The proposed grant will continue a Fellowship Program in Materials and Thermal Science for Nuclear Energy that supports outstanding students to earn graduate degrees at UNR. The aim is to increase the number and quality of students graduating with MS and Ph.D. degrees at UNR who are able to support the design, construction, operation, and regulation of nuclear facilities, and the safe handling of nuclear materials. Fellows will be encouraged to spend one summer at the NRC, a National Laboratory, or an industrial nuclear facility in order to gain work experience and develop professional contacts to help find an appropriate nuclear related professional placement after graduation.

Principal Investigator: Dev Chidambaram, dcc@unr.edu

Pitt Nuclear Engineering Graduate Fellowship Program

Executive Summary:

Pitts Swanson School of Engineering (SSOE) will establish two (2) Graduate Fellowships, using talent from diverse engineering disciplines to help develop a U.S. workforce to support the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. This Program will attract highly qualified graduate students into the Swanson Schools Nuclear Engineering Program, for an enriched graduate experience along four facets:

1. Research: In areas that will advance the current state of the art in nuclear power.
2. Service: Engagement by the student in professional societies, to build a commitment to engage in professional service and become strategically networked in the nuclear community.
3. Industry engagement: Funding to conduct graduate internships in cooperation with active industry segments, providing a broad spectrum of opportunities that will be directly relevant to future nuclear industry contributions.
4. Leadership: Training in cross-cutting skills for leadership of engineering activity in both professional and research capacities, creating “fast starters” who will be more valuable to the nuclear enterprise. Through this work, the Fellows will receive an educational experience that leads to a Ph.D. and either a graduate certificate or M.S. in Nuclear Engineering. The innovative program partnership with Westinghouse and Bettis labs offers a unique education and training opportunity for the Fellows, and Pitt is committed to sustain the nuclear program with recent faculty hiring and tuition cost-share for the project.

Principal Investigator: Daniel G. Cole, dgcole@pitt.edu

VCU Nuclear Engineering Graduate Fellowship Program

Executive Summary:

Virginia Commonwealth University's department of Mechanical and Nuclear Engineering offers a unique graduate education which is a hybrid of two major engineering fields: Nuclear and Mechanical Engineering. Graduates of the program can earn a M.S. and Ph.D. in Mechanical and Nuclear Engineering and benefit from a broad interdisciplinary education and perform intensive research projects in areas at the intersection of the two primary disciplines. Researchers with cross-disciplinary skills are highly attractive to industry, federal government agencies, and national laboratories. VCU's Nuclear Engineering Graduate Fellowship Program seeks to attract and educate qualified students in the field of mechanical and nuclear engineering. Special emphasis will be placed on recruiting and providing opportunities to qualified US students through strategic partnerships with institutions such as the Virginia Military Institute (VMI) and the Commonwealth Center for Advanced Manufacturing (CCAM). The fellowships will cover tuition and fees, along with a monthly stipend for two students over a span of four years. VCU's Nuclear Engineering Graduate Fellowship Program will be used to recruit, retain and support qualified individuals who can intellectually and professionally contribute to the various fields of nuclear science and technology.

Principal Investigator: Karla Mossi, kmmossi@vcu.edu

Virginia Tech Multi-campus Nuclear Engineering Fellowship Program

Executive Summary:

The objective of this proposal is to offer graduate fellowships to students who are enrolled in the Virginia Tech Nuclear Engineering Program (VT-NEP) at Blacksburg and National Capital Region campuses. These fellows will pursue graduate education in Nuclear Engineering with focus areas of nuclear power, nuclear security, nonproliferation and safeguards. The Principal Investigator will be responsible for planning, directing and executing of this proposal.

This fellowship program will enable VT-NEP to recruit and educate highly qualified nuclear engineers and scientists. These graduates will support the United States' nuclear industry and government and, more specifically, the State of Virginia's nuclear power industry and its various government agencies.

Principal Investigator: Alireza Haghighat, haghighat@vt.edu

WPI Nuclear Sciences and Engineering Graduate Fellowship Program

Executive Summary:

The Worcester Polytechnic Institute Nuclear Science and Engineering Program (NSE) requests support for two Graduate Fellowships in years 1 and 2 and one Graduate Fellowship in years 3 and 4 who will participate in an enhanced education and research program described within. To maximize the impact of this NSE Graduate Fellowship program and because we propose an enhanced scholastic and research program, our goal is to rotate this award among our NSE Research Assistants (taking account of the additional Fellowships that would be provided by this program). We therefore plan to support six different students over the four-year period and will target entering graduate students and students who previously have not been NSE fellows. The WPI Fellowship Administrator will oversee an application and selection process aimed to obtain the best and brightest recipients for this program. Candidates will be assessed based on their academic achievements and their commitment and interest in the nuclear field.

Prior to starting this fellowship, a candidate must sign an agreement to pursue at least 6 months of employment within the nuclear industry for each year or partial year of fellowship support. As a fellow, the student will pursue an enhanced project-based educational program designed to enhance the fellow's professional success and to increase his/her leadership potential in the nuclear energy field. These program elements have the additional benefit of helping maintain the student's interest in nuclear energy and better incorporating the student into the NSE professional community.

Principal Investigator: David C. Medich, dcmedich@wpi.edu