FY 2014 Fellowship Grant Program Awards

Institution	Amount	Title
University of Wisconsin – Madison	$370,075	University of Wisconsin-Madison Graduate Fellowship Program in Nuclear Engineering
University of Missouri S&T Rolla	$400,000	Graduate Fellowships in Nuclear Engineering at Missouri S&T (2014-2018)
Ohio State University	$383,247	Ohio State University Fellowship Program
Kansas State University	$396,740	Kansas State University Nuclear Research Fellowship Program
Colorado State University	$387,844	Colorado State University Health Physics Fellowship Program
Virginia Polytechnic Institute and State University	$399,999	The Virginia Tech Nuclear Engineering Fellowship Program
University of Illinois	$400,000	University of Illinois at Urbana-Champaign Nuclear Engineering Education Fellowship Program
University of Iowa	$393,032	Advancing the Graduate Program in Radiochemistry at the University of Iowa
Worcester Polytechnic Institute	$400,000	WPI Nuclear Science and Engineering Graduate Fellowship Program
Purdue University	$391,620	Nuclear Engineering and Health Physics Fellowship Program at Purdue University
Florida International University	$399,978	FIU Nuclear Fellowship Program
University of California Irvine	$399,756	Opportunities for Nuclear Research and Training in Chemical Engineering and Materials Science Engineering: UC Irvine Nuclear Fellowship Program
University of California Berkeley	$400,000	University of California, Berkeley - Department of Nuclear Engineering Graduate Fellowship Program

University of Michigan	$400,000	Nuclear Engineering Fellowship Program
Vanderbilt University	$398,157	Vanderbilt Fellowship Nuclear Education Program
University of Florida	$343,213	2014 University of Florida Nuclear Engineering Program – NRC Graduate Fellowship Program
Pennsylvania State Univ.	$300,874	The Pennsylvania State University Nuclear Education Fellowship Program

University of Wisconsin-Madison Graduate Fellowship Program in Nuclear Engineering

Executive Summary:

The Nuclear Engineering and Engineering Physics Program (NEEP) in the Engineering Physics (EP) Department at the University of Wisconsin-Madison (UW-Madison) requests support for two fellowships for its Graduate Fellowship Program in Nuclear Engineering (NE), in support of outstanding doctoral students interested in nuclear power systems engineering and a career and employment in nuclear power related fields. Recipients will serve six months for each year of academic support. Employment may be with the U.S. Nuclear Regulatory Commission, other Federal agencies, State agencies, Department of Energy laboratories, nuclear-related industry, or academia in their sponsored fields of study. Prof. Douglass Henderson, Professor of Nuclear Engineering in the Department of Engineering Physics and Director of the Graduate Engineering Research Scholars (GERS) program will continue to administer the department's successful fellowship program. Prof. Henderson is currently managing the NRC Fellowship Education Grant awards from 2010, 2012 and 2013 and the GERS program in the College of Engineering (since 1999). The fellowship program has and will continue to recruit and enroll top-notch, diverse students from all engineering disciplines, and award two doctoral fellowships to obtain a Ph.D. degree in Nuclear Engineering and Engineering Physics. The recruitment, selection and program administration of the students and their progress will use proven techniques from the EP department and the GERS program. The expected time duration to obtain a Ph.D. degree will be about 48 months. Depending on the students' background, the NEEP and GERS programs will supplement the fellowships if additional time is required for degree completion. Evaluation of program success will be accomplished in two ways. First, Prof. Henderson and the EP department chair will utilize EP faculty to provide an ongoing review of each student's progress toward their degree, and second, the program will be reviewed by GERS program faculty annually as part of the UW-Madison Graduate School requirements for program quality and outcome assessment. A concerted effort will be made to recruit traditionally under-represented students into the NE program from our traditional minority-serving institutional partners and from other majority institutions through the GERS program.

Principal Investigator: Douglass Henderson, henderson@engr.wisc.edu

Graduate Fellowships in Nuclear Engineering at Missouri S&T (2014-2018)

Executive Summary:

Missouri University of Science & Technology (Missouri S&T) is pleased to submit this fellowship proposal for graduate students pursuing MS and PhD degrees in Nuclear Engineering. A total of $400,000 is being requested from USNRC during a four year period (Aug. 1, 2014 – July 31, 2018). Missouri S&T will provide a cash match of $20,000 and in-kind match of $139,324 for the 4 year period. The entirety of the requested USNRC funding will cover the cost of tuition and fees for 3 fellows each year for four years. In addition, the fellowships will also provide a stipend equivalent to a half-time research assistantship and support for travel to professional meetings. The fellows will be recruited nationally by advertising the fellowship to all nuclear engineering programs in the nation. The selection criteria will be academic merit (GPA, GRE scores, and recommendation letters) with consideration given to financial need. Participation of women, minorities, and students with disabilities will be encouraged and promoted (the fellowship committee members includes a minority). The fellowships will provide opportunities for high performance students to pursue research in nationally important areas in nuclear engineering in collaboration with national laboratories and nuclear industries. In addition, we have partnered with Southern University of Baton Rouge, Louisiana (HBCU) to provide Reactor Laboratory and Radiation Measurement & Spectroscopy Laboratory experience to minority graduate students by distance education in order to motivate and help them to consider nuclear related areas for their graduate education.

Principal Investigator: Hyoung Koo Lee, leehk@mst.edu

Ohio State University Fellowship Proposal – FY 2014

Executive Summary:

The Ohio State University Nuclear Engineering Program proposes to administer a fellowship program grant that will provide 30 semesters of graduate fellowship support over the duration of the project. It is anticipated that nine graduate students will receive support during the course of the program. The large numbers of fellowship semesters supported and students impacted by this program are made possible because of the large amount of cost sharing by the university and the willingness of the principal investigators to perform their duties without charge to the project. 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. OSU will cover the expense of all tuition and fees for one student per year for four years. In addition, no administrative charges or indirect costs will be made against the program. An agreement is described between OSU and two Ohio HBCUs regarding the inclusion of graduates from the minor programs at those two programs for consideration for fellowships. In addition, Areva has committed $25,000 to the continuation of financial support for two additional years for the use of the OSU nuclear reactor for regional educational purposes as leveraged funding for this proposal.

Principal Investigator: Carol Smidts,

Kansas State University Nuclear Research Fellowship Program

Executive Summary:

Kansas State University (KSU) seeks to initiate a Nuclear Research Fellowship Program with financial support from the NRC Scholarship and Fellowship Education Grant program. Total funding of $396,740 over four years is requested in order to provide fellowships to three qualified Ph.D. students for four years each. These fellowships will provide the students the opportunity to pursue graduate studies in Nuclear Engineering and gain the knowledge and skills necessary for careers in the nuclear power and related industries. Because KSU is categorized with "other institutions with significant minority enrollment," the proposed fellowship program will provide an opportunity to attract under-represented students in Nuclear Engineering. The average annual stipend for each Fellow will be $23,000, and the grant will be used to provide full support for tuition fees and health insurance coverage. Fellows will conduct numerical and experimental investigations in reactor physics, thermal-hydraulics, or other Nuclear Engineering areas relevant to the safe, efficient, and effective use of nuclear energy and radiation. The Nuclear Engineering program at KSU is home to a Mark-II TRIGA reactor. The faculty members are involved in several independent and collaborative projects on radiation detection, thermal-hydraulics, reactor physics, and computational physics. Fellows will be able to conduct research that would complement the existing research at KSU under the guidance of faculty members from the Department of Mechanical and Nuclear Engineering.

Principal Investigator: William L. Dunn, dunn@ksu.edu

Colorado State University Health Physics Fellowship Program

Executive Summary:

The objective of the Colorado State University Health Physics Fellowship program is to support four students over four years through their education and training in the Master of Science program in health physics. The Nuclear Regulatory Commission (NRC) will benefit from this program through the creation of a pool of health physicists that are comprehensively educated in operational radiation safety, radiation protection instrumentation, and radiation dosimetry for hiring into the NRC. Graduates employed in industry will help to ease the regulatory burden by virtue of their understanding of health physics and the underpinnings of the regulations promulgated by the NRC.

Principal Investigator: Alexander Brandl, alexander.brandl@colostate.edu

The Virginia Tech Nuclear Engineering Fellowship Program

Executive Summary:

This proposal will provide stipends, tuition, and fringe benefits to five Ph.D. graduate students who will be enrolled in the Nuclear Engineering PhD or Direct-Ph.D. programs within the Mechanical Engineering Department at Virginia Tech. The awardees will be named Virginia Tech Nuclear Engineering Fellows. To stretch the Nuclear Regulatory Commission funds and support more students, each student's Advisor will provide matching funds so that 50% of the funds would be from the NRC Fellowship program and the remainder will come from the Advisor's federal grants, startup funds or other funding. Our Nuclear Engineering PhD program is new program which makes it difficult to attract the best students. This fellowship program is therefore vital to aid in recruiting top students to Virginia Tech's program. The University's and Department's recruitment and mentoring programs, including programs for under-represented groups, the Department's nuclear research activities, and its connections with the nuclear industries in Virginia and National Labs will ensure that the project's goal of attracting, preparing, and retaining individuals in nuclear careers will be fully met.

Principal Investigator: Mark Pierson, mark.pierson@vt.edu

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

Executive Summary:

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 and support at least three (3) graduate students each year for the four year duration of the award. The program will be coordinated with support from our major nuclear industry partners, Exelon and Sargent & Lundy.

Principal Investigator: James F. Stubbins, stubbin@illinois.edu

Advancing the Graduate Program in Radiochemistry at the University of Iowa

Executive Summary:

The goal of the proposed graduate fellowship program is to enhance our current efforts in interdisciplinary radiochemistry research at the University of Iowa and develop new and lasting industrial/government partnerships. Faculty members involved in radiochemical research at the University of Iowa are quickly becoming renowned experts in radioanalytical separations, nuclear forensics, actinide chemistry, and ligand design for medical applications. These fellowship awards (three per year with a stipend of $25,000 each) will attract and retain students in radiochemistry and will be combined with a pathway program to industrial or government employment after graduation. Advancing the graduate program in radiochemistry is the next step after the successful creation of an undergraduate BA degree in Chemistry with Radiochemistry focus that was developed as part of a NRC Faculty Development Award. The University of Iowa is strongly supportive of these initiatives in radiochemistry education and has leveraged $130,000 to enhance the proposed graduate fellowship program. Supporting graduate students as they engage in cutting-edge radiochemistry research will facilitate our efforts to become an internationally and nationally recognized program that will attract and prepare high-caliber students for the nuclear workforce. With success in expanding our radiochemistry program through these initiatives, we expect to have developed into an internationally-recognized leader in radiochemistry research, teaching, and service to the field.

Principal Investigator: Tori Z. Forbes, tori-forbes@uiowa.edu

WPI Nuclear Science and Engineering Graduate Fellowship Program

Executive Summary:
The Worcester Polytechnic Institute Nuclear Science and Engineering (NSE) Program requests support for two graduate students per year for four years who will participate in an enhanced educational program described within. To maximize the impact of this fellowship program, we plan to support eight different students over the four year period and will target prospective and entering graduate students or students who have not received prior NSE Fellowship funding. Our goal is to develop a highly talented and competent post-baccalaureate degree workforce to support the national objective for reinvigorating the nuclear power industry.

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. The requested funding for this program is $400,000 over four years. Each fellow will receive a 12 month stipend of $30,000 and have his/her tuition and fees waived. This level of financial support is very competitive and therefore will be attractive to our prospective candidates.

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

Nuclear Engineering and Health Physics Fellowship Program at Purdue University

Executive Summary:

The objective of the proposed project is to attract exceptional graduate students who have a strong interest in working in the nuclear industry and to prepare them for Nuclear Engineering and Health Physics careers and leadership positions. We are particularly interested in attracting strong and enthusiastic students from groups that are typically underrepresented in engineering, in general, and in the nuclear industry in particular. The immediate benefit of the proposed program to the nuclear industry is clear – a group of at least four Ph.D. graduates and two M.S. graduates who will serve the industry and provide leadership. However, there will be extended benefits. Our proposed program will highlight those students who are preparing for leadership in the nuclear industry and put them in a position not only to influence current students in the Nuclear Engineering and Health Physics programs but also to serve as ambassadors to potential students and society at large. Using a previous grant under this program, we funded a total of 8 students and graduated 4 Masters' students and 1 PhD student. All of the students we funded were either employed by the nuclear industry or are still pursuing higher education in Nuclear Engineering or Radiation Sciences.

Principal Investigator: Audeen W. Fentiman, fentiman@purdue.edu

FIU Nuclear Fellowship Program

Executive Summary:

Objective: Establish the FIU Nuclear Fellowship (FNF) Program to support FIU's growing nuclear program which would be expanded over the next 2 years to include support from Dept. of Energy and Industry. A total of 16 fellowships (4/yr) will be funded to create a pipeline of nuclear student graduates for nuclear industry, national labs and academia.

Benefits: FIU will recruit and support 4 students each year for 4 years who will work on nuclear projects in the Departments of Chemistry, Physics, and in the College of Engineering. Two of these students will be Chemistry & Biochemistry Ph.D. students, and two will be M.S. students within the developing Master's in Applied Radiological Sciences (MARS) degree or in existing M.S. programs which support nuclear research and curricula. This program will be expanded with support of companies, the U.S. Dept. of Energy and others. FIU's growing nuclear program is currently supported with FIU funding and $400,000 from two NRC grants, for curriculum development and for undergraduate scholarships. Each FNF student will receive mentoring, hands-on research opportunities, and fellowship support of $23,460/yr for Ph.D. or $15,000/yr for M.S./MARS students. Tuition will be entirely cost-shared by FIU. Most fellows will be minority, reflecting the diverse Miami population. Fellows will be recruited externally and internally through our existing Nuclear Scholarship Program.

Principal Investigator: Konstantinos Kavallieratos, kavallie@fiu.edu

Opportunities for Nuclear Research and Training in Chemical Engineering and Materials Science Engineering: UC Irvine Nuclear Fellowship Program

Executive Summary:

The objective of this proposal is to establish a fellowship program to offer competitive nuclear fellowships to recruit the best and brightest graduate students into careers in R&D and academic research in nuclear science and engineering applications. UC Irvine already has important infrastructure in place to support such an endeavor including the UC Irvine TRIGA reactor facility, a summer reactor operator training program, and graduate coursework on nuclear radiochemistry and the nuclear fuel cycle. Active collaborations with national laboratories include Idaho National Laboratory, Pacific Northwest National Laboratory and Los Alamos National Laboratory, giving students opportunities for internships and networking. UC Irvine is also a partner in a NNSA nuclear security consortium led by UC Berkeley which focuses on training students to become experts in nuclear safety, security and policy. Strong ties with faculty at several minority-serving institutions (Florida A&M, an HBCU, Cal State Long Beach, a HSI, and University of Texas-Pan American, also a HSI) provide opportunities for students from these institutions to conduct research every summer in nuclear research at UC Irvine in order to prepare them for graduate work in nuclear energy at UC Irvine. Ongoing activities funded by DOE NEUP and other federal agencies will be used to leverage funds from the NRC fellowship in order to support students and offer them a unique training experience in the cross-cutting field of nuclear chemical engineering and nuclear materials science.

Principal Investigators: Mikael Nilsson, nilssonm@uci.edu

University of California, Berkeley - Department of Nuclear Engineering Graduate Fellowship Program

Executive Summary:

The Department of Nuclear Engineering at University of California, Berkeley (UCB) is the only nuclear engineering (NE) department in California and applications for admission to our graduate program have increased steadily. However, due to limited funding, we have not been able to admit as many of the qualified applicants as we would like. In the proposed fellowship program, we will award two 3-year graduate fellowships for Ph.D. students and two 1-year graduate fellowships for M.S. students to support a total of four students. Utilizing the existing opportunities and systems readily available in the College of Engineering and the Nuclear Engineering Department at UC Berkeley, we will establish an effective system for recruitment, selection, monitoring/mentoring, and feedback. The Principal Investigator Chairs the NEED Committee and is an ex-officio member of the Scholarship Policy Coordination Committee of the American Nuclear Society. Through these programs she has experience administering and coordinating scholarships. The Co-PIs have similar experiences in scholarship programming. All proposing professors are also experienced at mentoring and teaching undergraduate students.

Principal Investigator: Rachel Slaybaugh, slaybaugh@berkeley.edu

Nuclear Engineering Fellowship Program

Executive Summary:

The University of Michigan Department of Nuclear Engineering and Radiological Sciences (NERS) propose a Nuclear Engineering (NE) Graduate Fellowship Program that will provide support for 2 students per year for 4 years as NE Fellows. Fellows must be US citizens or permanent residents. The MS Fellows will receive one year (12 months) 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 two years. The University of Michigan will provide cost sharing to cover the costs of supporting two students per year, regardless of residency status in Michigan. 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.

Objectives and benefits: The objective is to encourage outstanding graduate students to enter the UM Graduate Program in Nuclear Engineering and Radiological Sciences and obtain an advanced degree related to nuclear energy. The benefits of this program include an increase in the quality and quantity of human resources needed to sustain the nuclear enterprise.

Principal Investigators: William R. Martin, wrm@umich.edu

Vanderbilt Fellowship Nuclear Education Program

Executive Summary:

Objective and Benefits:
The focus of this project is to provide funding for four Master's students to complete Vanderbilt University's Health Physics Program. Students will complete two years of academic studies and develop and write a Master's thesis. Collaboration with external entities (e.g. US national laboratories) will be pursued, to broaden the students' learning experiences.

Principal Investigator: Michael G. Stabin, michael.g.stabin@vanderbilt.edu

2014 University of Florida Nuclear Engineering Program – NRC Graduate Fellowship Program

Executive Summary:

The goal of this proposal is to augment the current University of Florida NRC Graduate Fellowship Program within the Nuclear Engineering Program (NEP) at the University of Florida (UF) for students pursuing a graduate education in Nuclear Engineering with two new 4-year fellowships. This program is coordinated by a team of three faculty in NEP, including the Program Director, and two additional faculty. Professor Simon Phillpot, Interim Director of the Nuclear Engineering Program will be responsible for the fellowship program. He will be assisted by Professors Ed Dugan and James Baciak to form the UF NEP NRC Fellowship Committee. This committee will coordinate different functions, including advertisement, recruitment, review of fellowship proposals, and selection of recipients. The selection process will be conducted using a set of parameters with appropriate weighting for consistency and transparency. The Committee will meet annually to select (or renew) fellows from the pool of new fellowship applicants and existing recipients. The Committee, with assistance from each student's Ph.D. advisor, will monitor the educational program of each fellow, and prepare and submit a semiannual progress report and a final report to the NRC Project Manager electronically.

Principal Investigator: Simon Phillpot, sphil@mse.ufl.edu

The Pennsylvania State University Nuclear Education Fellowship Program

Executive Summary:

The Pennsylvania State University's Department of Mechanical and Nuclear Engineering is committed to maintaining its rich history by strengthening its prominent nuclear engineering program. This proposal describes a plan to create two graduate fellowships in nuclear engineering utilizing funds from the U.S. Nuclear Regulatory Commission's (NRC) Nuclear Education Program Fellowship Grant Program. Each fellowship will be for a four year period with each individual fellowship award beginning in Fall 2014 semester and continuing through the Spring 2019 semester. This amount is approximately equivalent to our graduate research assistant support and will provide the fellows with full tuition and fees coverage. 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 49 graduate students enrolled in nuclear engineering at Penn State University Park. In addition, there are 97 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 49 on-campus nuclear engineering graduate students, 78% are doctoral students and 60% are U.S. citizens.

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 7 Masters of Science, 24 Masters of Engineering and 7 PhD 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. These new fellowships will attract academically strong students to continue in or to enter studies in nuclear engineering. We are confident that the recipients of these fellowships will become the future leaders in nuclear science and engineering.

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