

2017 Fellowship Grant Awards

Institution	Award Amount	Title
Colorado State University	\$400,000	Colorado State University Fuel Cycle Radiochemistry Fellowship Program
Purdue University	\$399,762	Nuclear Science and Engineering Fellowship Program at Purdue University
Rensselaer Polytechnic Institute	\$400,000	Training and Growing Next Generation Nuclear Engineers - Nuclear Engineering Fellowship Program at Rensselaer
University of Tennessee	\$400,000	Sustainable Pipeline of Educational Excellence for Nuclear Engineering Graduate Students at the University of Tennessee
University of Puerto Rico Mayaguez	\$399,624	The University of Puerto Rico Fellowship Program in Earthquake Engineering for Nuclear Facilities
Texas A&M University – Kingsville	\$400,000	Texas A&M University-Kingsville Nuclear Doctoral Fellowship Program
University of Missouri S&T	\$400,000	Graduate Fellowships in Nuclear Engineering at Missouri S&T (2017-2021)
University of Wisconsin – Madison	\$399,584	University of Wisconsin-Madison Graduate Fellowship Program in Nuclear Engineering
Kansas State University	\$393,820	Kansas State University Nuclear Research Fellowship Program
City University of New York (CUNY)	\$399,982	CCNY Nuclear Research Fellowship Program
Colorado School of Mines	\$400,000	Colorado School of Mines Nuclear Science and Engineering Fellowship Program
University of Texas – San Antonio	\$399,351	Graduate Fellowship Program in Nuclear Safety: Critical Thinking, Research Skills and Professional Development
Vanderbilt University	\$398,365	Vanderbilt Fellowship Nuclear Education Program 2017

Colorado State University Fuel Cycle Radiochemistry Fellowship Program

Executive Summary:

The objective of the Colorado State University Fuel Cycle Radiochemistry Fellowship program is to provide funding to support two graduate students per year over the course of four years to allow for their education and training in Radiochemistry relating to the nuclear fuel cycle as part of their M.S. or Ph.D. program. The Nuclear Regulatory Commission (NRC) will benefit from this program through the creation of a pool of nuclear scientists that are comprehensively educated in all aspects of the application of radiochemistry in the nuclear fuel cycle, including mining & milling, process chemistry in nuclear power plants, recycling of used nuclear fuel as well as nuclear safeguards and non-proliferation. This group of students is then available for employment positions at the NRC, as well as the nuclear industry and national laboratories. Graduates working in the industry will help to ease the regulatory burden by virtue of their understanding of nuclear sciences, especially radiochemistry, and the underpinnings of the regulations promulgated by the NRC.

Principal Investigator: Ralf Sudowe, ralf.sudowe@colostate.edu

Nuclear Science and Engineering Fellowship Program at Purdue University

Executive Summary:

The objective of the proposed project is to attract exceptional graduate students into a relevant graduate program and research program, such as Nuclear Engineering, Materials Engineering, and Health Sciences, who have a strong interest in the nuclear industry and prepare them for nuclear science and engineering careers (including health physics) and leadership positions. We are particularly interested in attracting strong and enthusiastic students from groups that are typically underrepresented in engineering and science, in general, and in the nuclear industry, in particular. The immediate benefit of the proposed program to the nuclear industry is clear – approximately five to ten MS and PhD graduates who will be funded between one to two years by this program will serve the industry and ultimately provide leadership. The proposed program will also provide extended benefits by positioning these future leaders to influence current students in Nuclear Engineering, Materials Engineering, and Health Physics programs and to serve as ambassadors to potential students and society at large. Previous grants under this program funded a total of 12 students and graduated 4 MS students and no PhD students. All of the funded students were either employed by the nuclear industry or are still pursuing higher education in disciplines related to nuclear engineering or radiation sciences.

Principal Investigator: Allen Garner, algarner@purdue.edu

Training and Growing Next Generation Nuclear Engineers - Nuclear Engineering Fellowship Program at Rensselaer

Executive Summary:

The project will offer fellowship support for graduate students to pursue education and careers in the nuclear 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 is intended to develop and maintain the nuclear workforce 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 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

Sustainable Pipeline of Educational Excellence for Nuclear Engineering Graduate Students at the University of Tennessee

Executive Summary:

The Department of Nuclear Engineering at the University of Tennessee- Knoxville (UTK) seeks to award the equivalent of seven (7) one-year fellowships targeted to maintain a sustainable pipeline of educational excellence available to all our nuclear engineering graduate students. The aim of this fellowship program would be to fund an equivalent of 7 one-year fellowships during the next 4 years with the proposed approach. The key goal of this proposal is to maintain an infrastructure of continuous flow of opportunities and educational excellence for all our graduate nuclear engineering students. The sustainability feature of this proposal is built within our ability to combine our strong, growing and diverse portfolios of external support from our various sponsors alongside the support from the US NRC to develop coherent and well-defined paths for the educational success of our graduate students.

Principal Investigator: G. Ivan Maldonado, Ivan.Maldonado@utk.edu

The University of Puerto Rico Fellowship Program in Earthquake Engineering for Nuclear Facilities

Executive Summary:

This 4-year fellowship program is aimed to recruit and support outstanding students to pursue MS and PhD degrees in civil engineering with an emphasis in earthquake engineering for nuclear facilities. Our goal is to actively contribute to the development of a workforce capable of supporting the civil design, construction, and assessment of nuclear facilities. In order to retain the most talented students, an attractive “fellowship package” has been designed that support the fellows in the form of tuition payments, monthly stipends, computational resources and travel support to conferences and summer internships. Following the proven successful training framework from a previous NRC UPRM fellowship program, the fellows training will consist of carefully selected research projects and specialized graduate coursework. To provide the graduate fellows acquaintance with the state-of-the-art research on seismic assessment of nuclear facilities and exposure to the nuclear industry, we have partnered with Idaho National Laboratory (INL) and Rizzo Associates. They will provide technical support and research guidance to ensure that the research performed is relevant and benefit the nuclear industry broadly. With an almost 100% Hispanic enrollment (40% female), the College of Engineering at UPRM has a major responsibility on the education and training of US Hispanic engineers. The proposed fellowship program was carefully designed to encompass and leverage current research and educational efforts in nuclear engineering at UPRM while enhancing the participation and education of students from underrepresented groups.

Principal Investigator: Aidcer L. Vidot-Vega, aidcer.vidot@upr.edu

Texas A&M University-Kingsville Nuclear Doctoral Fellowship Program

Executive Summary:

The objectives of the proposed nuclear fellowship program at Texas A&M University-Kingsville (TAMUK), a Hispanic Serving Institution (HSI), are aimed at enhancing the nuclear tracks in the existing Sustainable Energy System Engineering (SESE) and Environmental Engineering (EVEN) Ph.D. programs, and recruiting and retaining highly qualified individuals to conduct nuclear related research towards doctoral degrees. Nuclear thrusts at TAMUK include neutronics, thermal-hydraulics, advanced reactors, material erosion by ions, radiation dosimetry, and environmental protection and restoration at uranium mining sites. The program will support up to five doctoral students, each of whom will be supported for two years, including a monthly stipend, in-state tuition, and conference travel. The recipients will investigate and solve various doctoral-level engineering problems guided by the nuclear faculty members at TAMUK. One of the benefits of the execution of this program at TAMUK is producing exceptional doctoral graduates with interdisciplinary backgrounds while emphasizing a nuclear engineering core research area. With the fellowship support, the two TAMUK Ph.D. programs will contribute to a professional workforce by training future leaders for nuclear industry, research facilities, military and government agencies and reinvigorate the nuclear society. In addition, the cutting edge research will not only advance knowledge and influence the frontiers of the nuclear research field, but also benefit the TAMUK undergraduate nuclear engineering minor program and increase nuclear awareness among underrepresented minority groups.

Principal Investigator: Xue Yang, Xue.Yang@tamuk.edu

Graduate Fellowships in Nuclear Engineering at Missouri S&T (2017-2021)

Executive Summary:

Missouri University of Science & Technology (Missouri S&T) is pleased to submit this fellowship proposal for graduate students pursuing PhD degrees in Nuclear Engineering. The entirety of the requested USNRC funding will provide a stipend equivalent to a half-time research assistantship for two fellows each year for four years. In addition, the fellowships will also support for travel to professional meetings and lab supplies. Missouri S&T will waive tuition and supplemental fees for the selected fellows. 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. 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.

Principal Investigator: Hyoung Lee, leehk@mst.edu

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. 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 the assessment of 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 utilize EP faculty to provide an ongoing review of each student's progress toward their degree, and will be in accordance with the principles and policies of the UW-Madison Graduate School Fellowships. The program will recruit students into the NE program from majority institutions and from our traditional minority-serving institutional partners through the GERS program and the South Carolina State University program articulation agreement.

Principal Investigator: Douglass Henderson, dlhender@wisc.edu

Kansas State University Nuclear Research Fellowship Program

Executive Summary:

Kansas State University (KSU) seeks to continue a Nuclear Research Fellowship Program with financial support from the NRC Scholarship and Fellowship Education Grant program. 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 of close collaboration with minority serving institutions and involvement in other societies with campus diversity goals, the proposed fellowship program will provide an opportunity to attract under-represented students in nuclear engineering. The grant will be used to provide full support for tuition and fees. Fellows will conduct numerical and experimental investigations in reactor physics, thermal-hydraulics, radiological engineering or other nuclear engineering areas relevant to the safe, efficient, and effective use of nuclear energy and radiation under supervision of KSU faculty. The faculty members are involved in several independent and collaborative projects on radiation detection, thermal-hydraulics, reactor physics, and health physics. The previous NRC fellowship program has helped KSU to recruit three nuclear engineering Ph.D. students, who plan to graduate in 2018. The continuation of this program will directly assist KSU in increasing the number of nuclear engineering Ph.D. graduates, which is a direct measure of the success of KSU's research program.

Principal Investigator: Hitesh Bindra, hbindra@ksu.edu

CCNY Nuclear Research Fellowship Program

Executive Summary:

The Energy Institute focuses on advanced electricity generation and storage technologies, in particular, advanced nuclear reactors which will be constructed in the US over the next twenty to thirty years. As CCNY is a minority and a Hispanic Serving Institution, the objective of the proposed fellowship program is to recruit and provide minority students with the knowledge, experience and skills needed to enter careers in the nuclear industry, National Laboratories or government agencies. The fellowship students will conduct numerical and experimental investigations of thermalhydraulics problems relevant to advanced reactor design, operation and safety in the Nuclear Thermal-hydraulics and Safety Research Laboratory of the Energy Institute.

Principal Investigator: Masahiro Kawaji, kawaji@ccny.cuny.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

Graduate Fellowship Program in Nuclear Safety: Critical Thinking, Research Skills and Professional Development

Executive Summary:

The long term goal is to create a workforce pipeline for the nuclear industry. The overall objective of this fellowship program is to broaden the participation of underrepresented graduate students in the areas of risk assessment and environmental protection pertinent to nuclear engineering by providing assistance, research opportunities and professional development. Three aims will accomplish the overall objective: (1) Create a Civil and Environmental Engineering and Environmental Science (CEEES) Fellowship Program in Nuclear Safety; (2) Create a Critical Thinking and Research Skills Workshop Series; (3) Provide students with hands on research and professional development. The proposed program consists of an integrated approach to expose underrepresented students to graduate school. It involves assistances, research training, and workshops that increase critical thinking and professional skills in order to attract and retain more underrepresented Master and Doctoral students in science and engineering. The proposed program is significant because it recognizes the need of training a diverse work force that will eventually contribute to improvements in nuclear safety practices, it enhances how we educate and engage underrepresented students in STEM fields; and will provide them the skills needed to succeed in the nuclear field.

Principal Investigator: Heather Shipley, heather.shipley@utsa.edu

Vanderbilt Fellowship Nuclear Education Program 2017

Executive Summary:

As with previous efforts, the goal is to train 4 graduate students in a 2 year program to obtain a Master's degree with a Health Physics emphasis. These students should have immediate employment prospects, given the current critical shortage of health physicists. The Vanderbilt program is a strong, widely recognized program that has successfully trained and found employment for all of its funded students to date.

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