FY 2015 Scholarship Grant Awards

Institution	Amount	Title
South Carolina State University	$194,880	South Carolina State University's 2015-2017 Scholarship Program in Nuclear Engineering
Missouri University S&T	$200,000	Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2015-2017)
Rensselaer Polytechnic Institute	$200,000	Enabling Strong Growth of the Nuclear Engineering Undergraduate Scholarship Program at Rensselaer Polytechnic Institute
University of Texas Austin	$80,000	Scholarship Program - The University of Texas at Austin
University of Massachusetts Lowell	$199,997	Scholarship in Nuclear Engineering and Health Physics at UML
Louisiana State University	$200,000	LSU Scholarships Program in Health Physics
Georgia Institute of Technology	$200,000	Nuclear and Radiological Engineering Scholarship Program at the Georgia Institute of Technology
University of Pittsburgh	$200,000	Pitt Nuclear Engineering Scholarship Program
University of Illinois	$200,000	University of Illinois at Urbana-Champaign Nuclear Engineering Education Scholarship Program
University of Texas A&M Kingsville	$199,999	Texas A&M University-Kingsville Nuclear Education Scholarship Program
Kansas State University	$199,770	Kansas State University Nuclear Energy Scholarship Program
University of Utah	$188,642	Scholarship Awards for Promoting Nuclear Safety Culture and Training of Undergraduate Students to Operate Nuclear Research at the University of Utah Nuclear Engineering Program
University of Tennessee	$69,782	Scholarship Program for Excellence and Diversity in Nuclear Engineering Education at the University of Tennessee

South Carolina State University's 2015-2017 Scholarship Program in Nuclear Engineering

Executive Summary:

The South Carolina State University Nuclear Engineering and Science Programs are applying for a two-year $194,880 undergraduate scholarship grant from the U.S. Nuclear Regulatory Commission. The grant will be used to provide tuition and book scholarship support in varying, need-based amounts per year to high potential undergraduate students majoring in Nuclear Engineering for up to two years. It is anticipated that, with leveraging of state, federal Pell grants, and other external scholarships, between 7 to 14 (or more) students will receive full or partial support each year from the USNRC funding. Priority will be given to sophomore and junior college transfer students who have maintained at least a 3.0/4.0 grade average.

Since 2006, the Nuclear Science and Engineering Programs at South Carolina State University have focused on producing minority Nuclear Engineers, Radiochemists, and Health Physicists. We are now the national leader in this regard. At the end of 2014, fifty six (56) graduates were produced in these three critical skills disciplines, over 95 % of whom are Black, and over 50% of whom are female. These graduates have been employed in both the civilian and federal nuclear workforce, including five (7) at the USNRC, one at Brookhaven National Laboratory, one at the Idaho National Engineering and Environmental Laboratory, and at least nine at nuclear power stations. Currently seven (7) graduates are pursuing graduate degrees in Nuclear Engineering, Radiochemistry or closely related fields at the Universities of Michigan, Illinois, Nevada-Las Vegas, Missouri, and Columbia University in New York. Students in the class of 2015 have already been accepted into graduate programs at the University of Wisconsin-Madison and the University of California-Berkeley.

In November 2013, the Nuclear Engineering Program at South Carolina State University was visited by an ABET-EAC accreditation team, and received ABET-EAC re-accreditation notification in August 2014.

Principal Investigator: Dr. Stanley Ihekweazu, sihekwea@scsu.edu

Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2015-2017)

Executive Summary:

Missouri University of Science & Technology (Missouri S&T) is pleased to submit this proposal for scholarships for undergraduate students pursuing B.S. degrees in Nuclear Engineering. A total of $200,000 ($100,000 per year) is being requested from NRC during a two year period (Oct. 1, 2015 – Sept. 30, 2017). The requested NRC funding will provide undergraduate scholarships to defray the cost of fees for 30 full-time students each year for two years. Thirty (30) high quality students with a minimum GPA of 3.0/4.0 will be selected from a pool of over 140 students who are expected to be in the next year's undergraduate class. The selection criteria will primarily be academic merit (GPA) with consideration given to financial need. The NRC scholarship grant will assist in providing a significant fraction (~5%) of the nation's approximately 630 expected graduates with a B.S. degree in Nuclear Engineering each year (2015-2017) who would be capable of supporting the design, construction, operation and regulation of nuclear facilities and the safe handling of nuclear materials. Success of the NRC grant is assured based on the outcome of our previous scholarship grants from NRC (2012-2014; 2014-2016) which have helped 87 students obtain scholarships ranging from $2,000 to $3,000 for students having GPA greater than 3.0. Fifteen of them graduated in 2013 and 17 graduated in 2014 with a B.S. degree in Nuclear Engineering. Among the graduates 22 students were employed in the nuclear industry and 8 students are continuing in graduate school in a field related to the nuclear industry.
Lee

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

Enabling Strong Growth of the Nuclear Engineering Undergraduate Scholarship Program at Rensselaer Polytechnic Institute

Executive Summary:

The project will directly and greatly contribute to developing and maintaining the nuclear workforce by promoting two important goals. Firstly, it is committed to creating and supporting a community diverse in many ways: diversity students and students from various and different backgrounds. Secondly, it places emphasis on improving the engineering thinking of students through innovative nuclear-related research. The Nuclear Engineering program and Rensselaer Polytechnic Institute are committed to utilizing this opportunity to power up the next generation nuclear engineers.

Principal Investigators: *Dr. Li (Emily) Liu*, liue@rpi.edu; *Dr. Yaron Danon*, danony@rpi.edu

Scholarship Program - The University of Texas at Austin

Executive Summary:

A nuclear option at The University of Texas at Austin has been in existence for over forty years. The earliest known course was Nuclear Reactor Operation and Maintenance and was first offered in 1957. Throughout its long history, the nuclear program has had a commitment to educating the brightest students in the United States and abroad: a commitment that grows stronger as the program expanded to encompass health physics, radiation engineering, research reactor beam port experiments, radioactive waste management and reactor and computational nuclear engineering.

The scholarships supported by this grant will recruit top undergraduate students into The University of Texas at Austin Nuclear Certificate for Nuclear Safety, Security, and Environmental Protection. Recruiting for the program will utilize resources in the Cockrell School of Engineering Scholarship Program office and the Equal Opportunity in Engineering (EOE) Program. Four scholarships will be awarded each year that cover the cost of tuition. It is important to note that scholarship recipients will be eligible to apply for out-of-state tuition waivers. This is of great consequence to out-of-state student due to the roughly $26,000 difference between in-state and out-of-state tuition rates.

Principal Investigator: Erich Schneider, eschneider@mail.utexas.edu

Scholarship in Nuclear Engineering and Health Physics at UML

Executive Summary:

The University of Massachusetts Lowell (UML) is requesting scholarship grants from the U.S. Nuclear Regulatory Commission (NRC) to enhance its enrollments of qualified students in the Nuclear Engineering and the Radiological Sciences (healthy physics) program referred to collectively as nuclear programs from here forward. UML has had a nuclear program since the 1960's, these programs have gone through revitalization due to **intuitional support** and investment in the nuclear programs supplemented by several recent grants in nuclear area from NASA, NSF, NRC, DoS and DOE. The nuclear programs in the last 5 years: (1) hired new faculty - 3 in engineering and 2 in physics in last 5 years; (2) redesigned the curriculum and (3) upgrade our nuclear research facilities – advance computing lab, detector lab. The enrollments within physics and engineering (~26%) has increased by ~26% in the last five years at UML. The nuclear programs have benefited from these increases in enrollments both in numbers and quality (higher average SAT scores). A total of 17 students were supported from the NRC scholarship grant awarded in 2013. The NRC scholars have either secured a job in the nuclear industry or are continuing on the studies in nuclear programs. **The objective** is to continue to capitalize on these developments; we are requesting $199,997 from NRC to boost recruitment and retention efforts at UML in the nuclear programs. We propose to distribute up to 5 ($8,000) scholarships at the sophomore/junior level, and 5 ($10,000) scholarships at the junior/senior level per year for a total of at least 15 scholarships in the next two years. **The benefit** of the NRC scholarship program at UML will be the development of a targeted recruitment plan to strengthen the undergraduate nuclear programs.

Principal Investigator: Dr. Sukesh Aghara, Sukesh_Aghara@uml.edu

LSU Scholarships Program in Health Physics

Executive Summary:

The long term objective of this project is to increase the number of well-trained radiation professionals in the national and regional workforces. The objective of this project is to attract well-qualified undergraduate students to study Health Physics at LSU. We request $200,000 for scholarships and other training costs for undergraduate students who complete Health Physics coursework. The benefits of this project to the NRC include increase the workforce with 24 graduates holding BS degrees in Physics or Engineering with a Minor in Nuclear Science (i.e., Health Physics), increased representation of women and minorities in the nuclear workforce, and increased training activity in a state of relevance to the NRC's mission. An additional benefit will be to subsequently increase the size and diversity of the pool of applicants seeking an MS degree in Health Physics. LSU has in place the scientific, educational, and administrative staff and processes to successfully complete this project.

Principal Investigator: Wayne D. Newhauser, Newhauser@lsu.edu

Nuclear and Radiological Engineering Scholarship 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 NRC scholarship program in nuclear and radiological engineering. The proposed scholarship program will provide 10 two-year scholarships in the amount of $20,000 for highly qualified students at Georgia Tech. The proposed scholarships will cover up to the cost of tuition, mandatory student fees, books and supplies as determined by the Georgia Tech Bursars Office, up to 2 years for a total of $20,000 for each recipient. The scholarships will be used to retain top NRE students and to recruit highly qualified students into the Nuclear and Radiological Engineering Program.

Principal Investigator: Farzad Rahnema, farzad@gatech.edu

Pitt Nuclear Engineering Scholarship Program

Executive Summary:

Pitt's Swanson School of Engineering will establish ten (10) Pitt Nuclear Engineering Scholarships, each with a value of up to $10,000 per year for up to a two-year period. The Nuclear Engineering Scholarship provides a springboard onto a commercial or graduate path to support the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. Pitt students receive significant value through the undergraduate certificate program from training received in the fundamental physics and operational response of reactor and plant systems, plant control, and nuclear safety. In this scholarship program, we aim to broaden scholars' experience beyond the classroom and to expose them further to the nuclear industry and to provide scholars valuable experience in nuclear science and engineering. Scholars participating in this program will be made aware of key industry trends, the development and implementation of cutting edge improvements, and industry-relevant research in nuclear science and engineering. Our goal it to provide students more than a certificate; we want our graduates to be valuable and knowledgeable contributors to the nuclear industry. To this end, and in addition to earning the Nuclear Engineering certificate, we will expect all Pitt Nuclear Engineering Scholars to do two (2) things: They must participate annually in a Nuclear Engineering Industry Symposium, and they must participate in an experiential learning opportunity related to nuclear engineering. Through this two-fold approach, the undergraduate scholars have a springboard experience that sets them onto a commercial or graduate studies path to better support the design, construction, operation, and regulation of nuclear facilities as leading contributors within the nuclear enterprise.

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

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

Executive Summary:

The objectives of this program are to attract and retain superior undergraduate students to educate in nuclear engineering. This will be accomplished with financial resources from the NRC and academic and administrative resources from the Department of Nuclear, Plasma and Radiological Engineering (NPRE) at the University of Illinois at Urbana-Champaign (UIUC). This program will ensure that the best and brightest students will join the nuclear workforce following a very strong, competitive education in nuclear engineering. The specific goals are to support at least ten (10) undergraduate students each year under this program. The program will be complemented with support from our major nuclear industry partner, Exelon Corporation.

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

Texas A&M University-Kingsville Nuclear Education Scholarship Program

Executive Summary:

In 2011, an NRC funded nuclear minor program was successfully established at Texas A&M University-Kingsville (TAMUK), a Hispanic Serving Institution. As a result of this NRC program, over the past 3 years, more than one hundred students have been enrolled in 5 nuclear core courses offered by the program. This program offers minority students a great opportunity to gain knowledge, experience, skills, and connections to start their professional careers in the US nuclear industry. The primary objective of this scholarship program is to recruit top undergraduate students from all STEM majors to the nuclear minor program. Particular recruiting strategies to attract Hispanic and female students are proposed. In addition, ~5% of the fund will be used to enhance the nuclear education by organizing field trips to nuclear power plants in Texas, Texas A&M University nuclear department, and American Nuclear Society student conference. The current NRC nuclear scholarship program boosted the nuclear enrollment and developed a number of successful graduates for industry and graduate schools. The key benefit of the continuation of the nuclear education scholarship program is that it will increase and promote student involvement in the nuclear area and strengthen the ties between university and industry.

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

Kansas State University Nuclear Energy Scholarship Program

Executive Summary:

Ten scholarships each worth $2,500 will be awarded to 10 qualified undergraduate students in each semester over two years. During last 5 years, 262 students have opted for nuclear option in the Department of Mechanical and Nuclear Engineering, which has a total average enrollment of about 800 students per year. K-State is categorized as an institution with significant minority enrollment and is committed to increase minority enrollment, especially in STEM programs. NRC scholarships will help in attracting the potential graduate students and minority students in Nuclear Engineering program with an opportunity to gain the knowledge, experience and skills needed to enter professional careers in the nuclear industry. A major fraction (80%) of the new NRC scholarship grant will be used as scholarships to attract a significant number of students in Mechanical and Chemical Engineering as well as Physics majors to study nuclear engineering. Additionally, more than $14,000 will be used to enhance the scholarship program by inviting guest speakers from the nuclear industry, National Laboratories and government agencies to meet with and talk to the students, and also by organizing field trips to nuclear power plants and other nuclear laboratories such as Oak Ridge and Idaho National Laboratories, and the Wolf Creek Nuclear power plant in the state of Kansas.

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

Scholarship Awards for Promoting Nuclear Safety Culture and Training of Undergraduate Students to Operate Nuclear Research at the University of Utah Nuclear Engineering Program

Executive Summary:

The Utah Nuclear Engineering Program (UNEP) is applying for a two-year scholarship grant to establish the Nuclear Engineering Scholarship Award Program (NESAP) aimed at recruiting high-performing undergraduate students into research reactor operating class and in engaging them into lab-based learning & practicing of the principles of nuclear safety culture. Unique industrial-level training of nuclear engineering students, based on Corrective Action software by the DevonWay Company is applied to daily operation and maintenance of UNEP nuclear engineering facility and labs inclusive of daily communication and classes' laboratory practices. It provides to UNEP students a unique experience as daily activities at the facility mirror the rigor of nuclear power plants operation in the USA; that includes learning of the regulations and policies, principles of reactor design and operation, practical learning of reactor operation and reactor physics, and handling of nuclear materials. The UNEP students thus have become uniquely skilled in being trained in the mindset of nuclear power plant operation. Moreover, we provide training classes in preparation of our students for senior reactor operator license exam administrated by the US NRC. Students trained in the principles of safety culture and/or in operating research reactor therefore become knowledgeable of the aspects and specifics as related to design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. Nuclear engineers will play a vital role in the development and implementation of current and future nuclear power reactor designs to meet ever changing national power requirements and to comply with clean air standards. The UNEP therefore became uniquely positioned to provide such engineers for the growing nuclear renaissance.

The total will be distributed among 10 NESAP *Platinum* Scholars (reactor operation training and license), 20 NESAP *Gold* Scholars (safety culture training and development) and 6 NESAP *Silver* Scholars (summer interns). These scholars will be recognized as UNEP ambassadors in engaging, retaining and inspiring other engineering and science students in considering UNEP minor and/or graduate programs and in encouraging them to support the jobs in nuclear industry as their future careers. This scholarship program will be structured to enhance recruitment and retention strategies, and support the monitor & mentor practices regarding incoming undergraduate students of high academic ability and performance.

Principal Investigator: Tatjana Jevremovic, Tatjana.Jevremovic@utah.edu

Scholarship Program for Excellence and Diversity in Nuclear Engineering Education at the University of Tennessee

Executive Summary:

A specific goal of this scholarship program is to promote the enrollment of high-potential US undergraduate students and community college transfers, and to present these opportunities to qualified candidates who may have been traditionally underrepresented in the nuclear engineering (NE) field; including African-American, Hispanic/Latino, and female domestic students. Likewise, these scholarships will also be employed to reward high-performing students at every level during their undergraduate curriculum, regardless of their ethnic or gender background, but with some consideration given to assist students with a strong financial need who meet the qualifications and expectations. This program would effectively be a continuation of an already implemented and successful scholarship program from previous NRC awards received at UTK.

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