

FY 2019 Scholarship Grant Awards

Institution	Amount	Title
City College of New York (CCNY)	\$198,960	Nuclear Energy Scholarship Program at City College of New York
Florida International University	\$153,618	FIU's Nuclear Scholarship (FNS) Program for Radiochemistry, Health Physics and Others
Missouri University of Science and Technology	\$200,000	Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2019-2021)
North Carolina State University	\$200,000	Nuclear Education Program Scholarships at NC State University
Purdue University	\$200,000	Nuclear Engineering & Health Sciences Scholarship Program at Purdue University
Rensselaer Polytechnic Institute	\$200,000	Far-reaching Nuclear Engineering Excellence Scholarships
The University of Texas of the Permian Basin	\$200,000	Scholarships for Recruitment and Retention of Nuclear Engineering Students
Thomas Edison State University	\$195,892	Thomas Edison State University Scholarship Program for Qualified Students Matriculated in Nuclear Energy Engineering, Electronics Systems Engineering Technology, Radiation Protection, Cyber Security, and Information Technology Degree Programs including MS-Nuclear Energy Technology Management
University of Michigan	\$120,000	Nuclear Engineering Undergraduate Scholarship Program at the University of Michigan
University of Pittsburgh	\$200,000	Pitt Nuclear Engineering Scholarship Program
University of Tennessee	\$200,000	Undergraduate Scholarships for Recruitment, Retention, and Success in Nuclear Engineering at the University of Tennessee

University of Texas at El Paso	\$200,000	Nuclear Engineering Workforce Program (NEWP) at the University of Texas at El Paso
Virginia Commonwealth University	\$199,970	VCU Nuclear Engineering Undergraduate Scholarship Program
Western Carolina University	\$199,795	Research Incubation Program for Undergraduates in Nuclear Related Engineering Fields

Nuclear Energy Scholarship Program at City College of New York

Executive Summary:

Objectives and Benefits: The **Nuclear Energy Scholarship Program** will recruit and train up to a total of 48 full-time undergraduate students majoring in Mechanical Engineering, Chemical Engineering and Environmental Engineering programs enrolled in three nuclear engineering courses: Reactor Physics, Reactor Thermal-hydraulics, and Reactor Design, Operation and Safety. The scholarship recipients will acquire knowledge and skills needed in the design, regulation, construction and operation of existing and future advanced nuclear power plants in the US. This program will benefit the nuclear industry in securing highly skilled engineers for their workforce.

Principal Investigator: Masahiro Kawaji, mkawaji@ccny.cuny.edu

FIU's Nuclear Scholarship (FNS) Program for Radiochemistry, Health Physics and Others

Executive Summary:

The FNS Program was established Sept. 2013 with a US NRC grant. It has recruited students from FIU and Miami Dade College into (1) the Chemistry Dept. as a feeder for the Ph.D. in Radiochemistry; and (2) the B.S. in Health Physics. The creation of 10 new nuclear courses that laid the foundation for the Health Physics Specialty in Physics and the Ph.D. Radiochemistry track was funded by an NRC grant. All of the academic and nuclear research programs were developed with support of NRC grants and related cost match by FIU and laid the foundation for numerous successes. FIU's Interdisciplinary Nuclear Research and Education (INRE) Program has grown to over 50 members and over \$6.5M in current R&D projects. FIU will incorporate lessons learned from the two previous NRC scholarship grants such as funding travel for conferences, more nuclear networking events, and four Scholars Year 1 and five Scholars in Year 2. Health and Nuclear Physics, Radiochemistry, & Engineering programs are the targets. Each Scholar will receive mentoring, hands-on R&D opportunities, funding for full tuition, one trip to a conference, R&D materials and supplies. Most FIU Scholars will be minority students reflecting Miami's diverse population (61% Hispanic; 15% white/ non-Hispanic; 13% Black; 4% Asian; and 7% other minorities). FIU has 53,000 students and awards more Bachelor degrees to Hispanics than any other institution in the continental USA. It is in the top 10 in the USA in awarding degrees to Blacks. Students will be recruited to FIU from Miami Dade College (>120,000 students) and FIU Students will be targeted via emails, career counseling offices, classroom visits, and FIU events.

Principal Investigator: David Roelant, roelantd@fiu.edu

Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2019-2021)

Executive Summary:

Statement of the Project's Objectives & Benefits: The requested NRC funding will provide undergraduate scholarships to defray the cost of fees for 26 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 70 students who are expected to be next year's Juniors and Seniors. The selection criteria will primarily be academic merit (GPA) with consideration given to financial need. This NRC scholarship grant will assist in providing a significant fraction (~4%) of the nation's approximately 620 expected graduates with a B.S. degree in Nuclear Engineering each year who would be capable of supporting the design, construction, operation and regulation of nuclear facilities and the safe handling of nuclear materials, and benefit nuclear safety and security sector. Success of the NRC grant is assured based on the outcome of our previous scholarship grants from NRC (2012-2014; 2014-2016; 2015-2017; 2016-2018; 2017-2019, 2018-2020) which have helped 135 students obtain scholarships ranging from \$1,000 to \$3,300 per semester. Eighty-five of them graduated with a B.S. degree in Nuclear Engineering. Five of them received an M.S. degree in Nuclear Engineering at Missouri S&T. Among the 85 graduates, 36 were employed in the nuclear industry, 21 students are continuing in graduate school, and the rest are employed in fields related to the nuclear industry or seeking employment.

Principal Investigator: Joshua P. Schlegel; schlegelj@mst.edu

Nuclear Education Program Scholarships at NC State University

The proposal requests funds for 10 NRC undergraduate scholarships totaling \$200,000 over two years to assist students in their pursuit of the BS in Nuclear Engineering. The program will be administered by the PI.

Program Investigator: J. Michael Doster, doster@ncsu.edu

Nuclear Engineering & Health Sciences Scholarship Program at Purdue University

Executive Summary:

Scholarship support is requested for undergraduate bachelor's degree study in the nuclear engineering and radiological health science (health physics) programs at Purdue University. Although administratively independent, the two schools are connected through collaborative faculty research, teaching courses, and most importantly through a unique formal educational option that bridges both Schools in an accelerated M.S. degree option, commonly labeled the "4+1" program, for students who complete either of the undergraduate degree programs and maintain a minimum GPA of 3.0 out of 4.0. The School of Nuclear Engineering prepares graduates to work in the nuclear engineering power sector, homeland security, regulation, and academia while the School of Health Sciences primarily concentrates on preparing graduates for careers in reactor health physics, environmental health physics and medical health physics. The main objective of this scholarship support program is to recruit, retain, monitor and mentor students of high academic ability and performance so that they graduate to become career professionals and leaders in the nuclear power industry and government laboratories and regulatory agencies.

Principal Investigator: Seungjin Kim, seungjin@purdue.edu

Far-reaching Nuclear Engineering Excellence Scholarships

Executive Summary:

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

Principal Investigator: Li (Emily) Liu, liue@rpi.edu

Scholarships for Recruitment and Retention of Nuclear Engineering Students

Executive Summary:

The present project purports to recruit and retain economically disadvantaged but academically talented students to pursue nuclear engineering education at UTPB by providing scholarships, faculty and peer mentoring, and socialization activities. The comprehensive recruitment and retention strategies of the project are aimed at doubling the matriculation of nuclear engineering track students at UTPB. In addition, the assessment efforts of this project will examine whether students who received scholarships and co-curricular programming remain in nuclear engineering track and graduate at higher rates than other students with similar backgrounds; and which retention activities achieved the highest rates of student engagement. The objectives of this proposed project are: (1) To increase the number of STEM graduates, particularly from under-represented groups, who are highly qualified to enter nuclear energy careers in industry and state and federal agencies, (2) To successfully identify and attract low-income and academically competent students to enroll in the nuclear engineering track at UTPB through the award scholarships; it is anticipated that approximately 40 students (20 students/year) will be supported, and (3) To use student support services and mentoring programs to enable the scholarship students to be retained and graduate at rates that are at least 25% higher than the current rates for students in the nuclear engineering track at UTPB.

Principal Investigator: Luis Trueba, Jr., Trueba.L@utpb.edu

**Thomas Edison State University Scholarship Program for Qualified Students
Matriculated in Nuclear Energy Engineering, Electronics Systems Engineering
Technology, Radiation Protection, Cyber Security, and Information Technology Degree
Programs including MS-Nuclear Energy Technology Management**

Executive Summary:

Having successfully managed/awarded two NRC Scholarship grants by awarding 43 and 42 scholarships respectively, Thomas Edison State University now seeks funding from the NRC to administer another two-year scholarship program that will award 42 scholarships based on financial need and academic performance, to qualified University students seeking career-required technical baccalaureate degrees and matriculated in Nuclear Energy Engineering, Electronics Systems Engineering Technology, Radiation Protection, Cyber Security, Information Technology Degree Programs including MS-Nuclear Energy Technology Management. The scholarships will support qualified, high-potential students who are active-duty Navy Nuclear and other Military Service members, veterans; graduates of the Nuclear Uniform Curriculum Program (NUCP) from 28 active Community College partners; and graduates of the University's non-ABET accredited Nuclear Engineering Technology program who now wish to upgrade their degree status in order to graduate from the University's ABET-accredited Nuclear Energy Engineering Technology degree program. The University's transfer policy and acceptance of nuclear industry/military assessed training enables many students to transfer 60-80 credits toward a baccalaureate degree. In addition, the University's students usually work in nuclear energy, such as military, commercial nuclear facilities, DOE national laboratories, or are attending community college programs linked to the industry by NUCP or RCNET and are seeking career required technical baccalaureate degrees. The objective of the scholarship program is to increase student retention, help students graduate in a timely manner, and enter or experience professional growth in the nuclear safety and security sector.

Principal Investigator: Richard Coe, rcoe@tesu.edu

Nuclear Engineering Undergraduate Scholarship Program at the University of Michigan

Executive Summary:

Objectives and benefits: The objective of the fellowship is to encourage outstanding undergraduate students to pursue an undergraduate degree in Nuclear Engineering and to have the financial freedom to pursue academic research during their tenure as students. The principal benefit of this program will be to increase the quality and quantity of human resources necessary to sustain the U.S. nuclear enterprise.

Principal Investigator: Gary S. Was, gsw@umich.edu

Pitt Nuclear Engineering Scholarship Program

Executive Summary:

Pitt's Swanson School of Engineering will establish Pitt Nuclear Engineering Scholarships, each with a value of up to \$5,000 per semester for students in co-op rotations or \$10,000 per year, for up to a two-year period. The student scholars are expected to participate in the nuclear certificate program, lab research in nuclear topics, and the annual Nuclear Engineering Industry Symposium at Pitt.

The Nuclear Engineering Scholarship provides a springboard onto an industrial 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 in nuclear engineering from training received in fundamental nuclear engineering and operational response of reactor and plant systems, plant control, and nuclear safety. In this scholarship program, we further aim to broaden scholars' experience beyond the classroom to involve them in valuable lab research in nuclear science and engineering. Scholars will participate in lab research and development of cutting-edge nuclear science and technologies. They are also expected to participate the annual Nuclear Engineering Industry Symposium. Our goal is to provide students more than a nuclear certificate; we want the experiential learning opportunity to lead to graduate studies and we want our scholars to be future innovators and technical leaders of the nuclear enterprise.

Principal Investigator: Heng Ban, heng.ban@pitt.edu

Undergraduate Scholarships for Recruitment, Retention, and Success in Nuclear Engineering at the University of Tennessee

Executive Summary:

Through this solicitation, the Department of Nuclear Engineering at the University of Tennessee-Knoxville (UTK) seeks to award the equivalent of at least (40) scholarship units of up to \$5,000 each directly targeted to increase its program's excellence while also improving student retention and success. A goal of this program is to promote the enrollment of high-potential US undergraduate students from a diverse group of qualified nuclear engineering undergraduates. After enrollment, these scholarships will also be employed to reward and support high performing undergraduate students. Retention and student success in nuclear engineering will be enhanced thorough the consideration given to assist students with a strong financial need who meet the scholarship program qualifications and expectations.

Principal Investigator: J. Wesley Hines, jhines2@utk.edu

Nuclear Engineering Workforce Program (NEWP) at the University of Texas at El Paso

Executive Summary:

The objective of this project is to develop a nuclear engineering workforce program (NEWP) to develop the workforce needed to design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. A cohort of 10 rising junior undergraduate students will receive scholarships. Beyond the scholarships, students are given the opportunity to take a nuclear engineering technical track (consisting of 4 electives) which will enhance their fundamental understanding of nuclear technology, provided experiential learning experiences (through site visits to various DOE/NNSA/Plant partners) that enable the students to gain a first-hand understanding of reactor technologies, and provided undergraduate research experiences where the students will engage with the disruptive technologies that will give them a competitive edge in the workforce. A comprehensive evaluation plan has been developed to continuously monitor student performance and ensure the NRC service agreement is met upon graduation. The program will be sustained through continued educational and experimental learning experiences along with the securing of additional competitive educational and research funding by the UTEP faculty and partners.

Principal Investigator: Calvin Stewart, cmstewart@utep.edu

VCU Nuclear Engineering Undergraduate Scholarship Program

Executive Summary:

The primary objective of VCU's Nuclear Engineering Undergraduate Scholarship Program is to attract and retain talented students into VCU's unique ABET accredited Nuclear Engineering Major Concentration Option in the Mechanical Engineering BS program, and to facilitate their future success in a career in the nuclear industry. In particular, the scholarships will provide additional incentive for students to choose and remain in the nuclear engineering option. Furthermore, given VCU's student demographics and its situation as an urban university, the program is expected to attract a higher than average population of traditionally underrepresented students. At the same time, due to the large presence of nuclear industry stakeholders in the proximity of VCU and the strong tradition of collaboration between VCU's nuclear program and the local nuclear companies, these stakeholders are expected to be able to provide relevant internships or co-ops, which are required for the BS degree, and permanent employment opportunities in the nuclear industry to the scholars in the program. The scholarship program awarded ten scholarships totaling \$95,000 in 2015-2016, \$99,400 in 2016-2017, and 80,000 in 2017-2018. Four new and three renewing scholarships totaling \$35,000 were awarded for fall 2018. These scholarships are expected to be renewed for an additional \$35,000 for the spring 2019 semester. The proposed program expansion will provide nine \$10,000 scholarships each year for the two subsequent academic years.

Principal Investigator: John E. Speich, jespeich@vcu.edu

Research Incubation Program for Undergraduates in Nuclear Related Engineering Fields

Executive Summary:

Western Carolina University (WCU) proposes this two-year program to fund six scholarships of \$5,000.00 per semester for specially selected, highly motivated engineering students specializing in electric power, mechanical and electrical disciplines, jointly called EPME, students who are pursuing an educational emphasis in nuclear power and who desire to contribute to the nuclear-related national workforce. The main objective is to use these scholarships to recruit and retain students who will sustain our existing program for serving nuclear-related academia and industry, leveraging WCU's engineering project based learning sequence. This will be achieved by engaging students in nuclear-related undergraduate research (UgR) projects. Our secondary objective is to increase the quality, quantity and diversity of students seeking these engineering degrees. This project based learning program will, by design, benefit WCU's ongoing programs of recruiting, retaining and educating students, who include traditionally underrepresented groups (including but not limited to minorities, women, economically disadvantaged, first generation, and persons with disabilities), into the nuclear sector. A fraction of the proposal also covers support for faculty and costs to cover administration, mentoring, recruiting, marketing, and curriculum related activities.

Principal Investigator: H. B. Karayaka, hbkarayaka@wcu.edu