

FY 2014 Scholarship Grant Program Awards

Institution	Amount	Title
South Carolina State University	\$199,974	South Carolina State University's 2014-2016 Scholarship Program in Nuclear Engineering, Radiochemistry, and Health Physics
Oregon State University	\$166,320	Oregon State University Scholarship Program – Education & Collaboration
Thomas Edison State College	\$194,872	Thomas Edison State College's Scholarship Program for Qualified Students Matriculated in Nuclear Energy Engineering, Electronics Systems Engineering Technology, and Radiation Protections Baccalaureate Degree Programs
Virginia Polytechnic Institute and State University	\$194,400	The Virginia Tech Nuclear Engineering Scholarship Program
University of Missouri S&T - Rolla	\$200,000	Undergraduate Scholarships in Nuclear Engineering at Missouri S&T
Clemson University	\$200,000	Clemson University Nuclear Engineering and Radiological Sciences Scholarship Program
Purdue University	\$194,400	Nuclear Engineering and Health Sciences Scholarship Program at Purdue University
Texas Southern University	\$199,993	Medical Health Physics Scholarship Program at Texas Southern University
University of California Irvine	\$197,969	Opportunities for Nuclear Research and Training in Chemical Engineering and Materials Science Engineering: University of California, Irvine – Nuclear Scholarship Program
Virginia Commonwealth University	\$199,958	Virginia Commonwealth University (VCU) Nuclear Engineering Undergraduate Scholarship Program

University of Tennessee	\$200,000	Scholarship Program for Excellence and Diversity in Nuclear Engineering Education at the University of Tennessee
Worcester Polytechnic Institute	\$196,022	Worcester Polytechnic Institute's (WPI's) Nuclear Science and Engineering Undergraduate Scholarship Program

South Carolina State University's 2014-2016 Scholarship Program in Nuclear Engineering, Radiochemistry, and Health Physics

Executive Summary:

The South Carolina State University Nuclear Engineering and Science Programs are applying for a two-year 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 ranging from \$1,000 to \$10,000 per year to high-potential undergraduate students majoring in Nuclear Engineering, Radiochemistry, and Health Physics 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 U.S. NRC funding. Priority will be given to junior and senior 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. By the end of 2014, fifty six (56) graduates will have been produced in these three critical skills disciplines, over 95% of whom are African American, and over 50% of who are female. These graduates have been employed in both the civilian and Federal nuclear workforce, including five at the U.S. NRC, one at Brookhaven National Laboratory, one at the Idaho National Engineering and Environmental Laboratory, and at least nine at nuclear power stations. To date, two Radiochemistry graduates have received doctoral degrees in related STEM areas, and three other graduates are expected to complete doctoral requirements in 2014, including one in Nuclear Engineering and one in Radiochemistry.

In November 2013, the Nuclear Engineering Program was visited by an ABET-EAC accreditation team, and received a very favorable review for re-accreditation. We are, therefore, expecting the Nuclear Engineering program to be ABET-EAC re-accredited in August 2014.

Principal Investigator: Dr. Kenneth Lewis, klewis31@scsu.edu

Oregon State University Scholarship Program – Education & Collaboration

Executive Summary:

The Department of Nuclear Engineering and Radiation Health Physics (NERHP) at Oregon State University (OSU) prides itself with top-rated graduates at both baccalaureate and post-baccalaureate levels. The NERHP has been recognized as a highly rated, top ten program in the United States on a recurring annual basis for several decades. These accomplishments are, in no small part, a result of significant fiscal support from Federal agencies such as the Nuclear Regulatory Commission (NRC). OSU and the NERHP believe that previous scholastic grants funded through the NRC, which have been directed toward OSU, have been utilized in the most economical and advantageous manner. The NERHP strives to continue this function in the near- and long-term future so as to further enhance its already strong relationship with the NRC.

NERHP seeks funding through the NRC Scholarship program to provide the following awards to highly deserving undergraduate students within the OSU NERHP over a two-year period:

- 12 Undergraduate *Educational* Scholarships each of \$6,000 value for a two-year period, providing a total of 24 educational scholarships during the grant period.
- 10 Undergraduate *Collaborative* Scholarships each of \$500 value for a two-year period, providing a total of 20 undergraduate collaborative scholarships during the grant period.
- During the two-year period the NERHP will support an 10 additional students.

The requested funds provide fiscal support at an undergraduate level and significantly enhance the mission of the NERHP to most effectively educate students in the field of nuclear engineering and radiation health physics.

Principal Investigator: Dr. Wade Marcum, Wade.Marcum@oregonstate.edu

Thomas Edison State College's Scholarship Program for Qualified Students Matriculated in Nuclear Energy Engineering, Electronics Systems Engineering Technology, and Radiation Protections Baccalaureate Degree Programs

Executive Summary:

Thomas Edison State College (College) seeks funding from the NRC to establish and administer a two-year scholarship program that will award twenty-five (25) \$2,000 scholarships, and ten (10) \$4,000 scholarships per year, based on need and academic performance, to qualified College matriculated students in the Nuclear Energy Engineering Technology, Electronics Systems Engineering Technology, and Radiation Protection Baccalaureate Degree Programs. The scholarships will support qualified, high-potential students who are active-duty Navy Nuclear students, other Military Service members, and veterans; graduates of the Nuclear Uniform Curriculum Program (NUCP) from 28 active community college partners; and graduates of the College's non-ABET accredited Nuclear Engineering Technology program who now wish to upgrade their degree status in order to graduate from the College's ABET-accredited Nuclear Energy Engineering Technology degree program. The College's transfer policy and acceptance of nuclear industry/military assessed training enables many students to transfer 60-80 credits toward a baccalaureate degree. This creates needs for small scholarships of shorter duration. In addition, the College's students usually work in the nuclear field, such as military commercial facilities and national laboratories, or are attending community college programs linked to the industry by NUCP or RCNET.

Principal Investigators: Dr. Richard Coe, rcoe@tesc.edu; Dr. Donald Cucuzzella, dcucuzzella@tesc.edu

The Virginia Tech Nuclear Engineering Scholarship Program

Executive Summary:

This proposal would provide a total of eighteen (18) \$10,000 scholarships to undergraduate students who will be enrolled in the Minor in Nuclear Engineering program. Over the two years of the grant, awards will be given to nine students per year for a total of 18 students. Select students may receive a scholarship award up to two consecutive years. The awardees will be named Virginia Tech Nuclear Engineering Scholars. The scholarship program will be open to all students in the sciences or engineering who have been enrolled in the Nuclear Engineering Minor program that satisfy the minimum required GPA. 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 laboratories will ensure that the project's goal of attracting, preparing, and retaining individuals in nuclear careers will be fully met.

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

Undergraduate Scholarships in Nuclear Engineering at Missouri S&T

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 (Aug. 1, 2014 – July 31, 2016). 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. Participation of women, minorities, and students with disabilities will be encouraged and promoted. The NRC scholarship grant will assist in providing a significant fraction (~5%) of the nation's approximately 650 expected graduates with a B.S. degree in Nuclear Engineering each year (2014-2016) 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 grant from NRC (from 2012-2014), which helped 57 students obtain scholarships ranging from \$2,000 to \$3,000 for students having GPA > 3.0. Fifteen of them graduated in 2013 with a B.S. degree in Nuclear Engineering. Among the graduates 10 students were employed in the nuclear industry and 3 students are continuing in graduate school in a field related to the nuclear industry.

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

Clemson University Nuclear Engineering and Radiological Sciences Scholarship Program

Executive Summary:

Scholarships are requested to support 15 undergraduate students per year at Clemson University. Scholarship students will be required to pursue the new Nuclear Engineering and Radiological Sciences (NERS) minor. As part of the minor, scholars will be encouraged to participate in a summer internship with an outside partner such as a national laboratory, utility, or regulatory agency. This will provide scholars with an opportunity both to interact with a practicing professional and to apply their academic knowledge in the nuclear sector.

The NERS program is a new undergraduate minor built on 30 years of experience of the graduate-only Nuclear Environmental Engineering and Science academic program housed within the Department of Environmental Engineering and Earth Science. The minor will enrich engineering and science undergraduates with knowledge on nuclear specific topics, including introduction to nuclear engineering, environmental health physics, radioactive waste management, environmental risk assessment, the nuclear fuel cycle, radiation detection and measurement. The scholarship program is expected to attract the top students from: Chemical Engineering, Civil Engineering, Electrical Engineering, Environmental Engineering, Materials Science and Engineering, Mechanical Engineering, and Physics, for participation in the NERS minor.

Principle Investigators: Dr. Lindsay Shuller-Nickles, lshulle@clemson.edu; Dr. Timothy DeVol, devol@clemson.edu

Nuclear Engineering and Health Sciences Scholarship Program at Purdue University

Executive Summary:

Scholarship support is requested for undergraduate bachelor's degree study in the nuclear engineering or radiological health science (health physics) programs at Purdue University. Although administratively independent, there is close collaboration between the faculty and education programs. The two schools are connected through common faculty research, exchange of professors in teaching parts of required 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 and other important areas such as homeland security, regulation, and academia while the School of Health Sciences primarily concentrates on preparing their radiological health science program 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, such as the Nuclear Regulatory Commission, Environmental Protection Agency, and Department of Homeland Security.

Principal Investigators: Dr. Audeen Fentiman, fentiman@purdue.edu; Dr. Linda H. Nie, hnie@purdue.edu

Medical Health Physics Scholarship Program at Texas Southern University

Executive Summary:

Texas Southern University (TSU) is one of the nation's largest Historically Black Colleges and Universities (HBCUs), located within Houston, soon to be third largest metropolis in the country. Through previous and ongoing support, the Department of Physics at TSU (TSU-Physics) boasts the only Environmental Health Physics (EHP) program in Houston. Through the previous grant NRC-38-07-495 (including three successive continuations: 2007-2012), TSU-Physics was able to establish the EHP program through the development of a comprehensive curriculum (approved by the State of Texas in 2008, refer to http://em.tsu.edu/catalog/08catalog/222_science_and_tech.pdf pgs. 487-490), including the acquisition of crucial student training laboratory equipment. This effort resulted in the graduation of five students: 1) Mr. Brandon Georgetown; 2) Mr. Biruk Desta; 3) Ms. Samantha Everett; 4) Mr. John Metyko; and 5) Mr. Michael Smith. All are either employed full-time and/or in graduate school.

Paralleling this, in 2008 a Faculty Development grant was awarded (NRC-38-08-973) for three years supporting the research efforts of Dr. Elena Stefanova. These funds have already been expended, and Dr. Stefanova, who initiated the EHP program, returned to the Bulgarian Academy of Sciences. The new scientific director of the EHP program is Dr. Mark Harvey, whose research in medical health physics was supported through an NRC Faculty Development grant (NRC-38-10-935).

Since December 2013, a new Technology Building has been completed, with ample and dedicated modern facilities benefiting our EHP program. We will leverage upon the success of the existing EHP program to develop specialty courses for a new medical physics track by exploiting the commonalities represented by these two disciplines (e.g., basic radiation physics, radiation biology, etc.).

In anticipation of this expanded capacity, we are requesting further support for scholarships for high-achieving students interested in a career in medical health physics. The objectives of the scholarship program outlined in this proposal will compliment both the EHP program and current research interest of the faculty at TSU by:

1. Providing students strong theoretical and technical competencies in radiation physics, safety and protocol
2. Increasing the number of underrepresented students choosing careers in medical health physics
3. Providing students with summer internship opportunities in research at regional tier one universities and hospitals, and
4. Introducing students to safety issues associated with therapeutic and diagnostic applications of radiation in medical facilities.

We view this scholarship opportunity as a robust way to strengthen the health physics program at TSU, while also becoming a major contributor of underrepresented professionals to the radiological workforce in the Greater Houston area in the expanding field of radiation safety and applied nuclear science.

Principal Investigator: Dr. Mark Harvey, harveymc@tsu.edu

Opportunities for Nuclear Research and Training in Chemical Engineering and Materials Science Engineering: University of California, Irvine – Nuclear Scholarship Program

Executive Summary:

The objective of this proposal is to offer eight competitive nuclear scholarships per year to recruit the best and brightest undergraduate students into careers in the nuclear field. The University of California, Irvine (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 undergraduate coursework on nuclear radiochemistry, radioisotopes, and the nuclear fuel cycle. Students who receive scholarships will participate in nuclear energy related research full time in their first summer. Active collaborations with Idaho National Laboratory, Pacific Northwest National Laboratory, and Los Alamos National Laboratory will give students opportunities for additional internships and networking. UC Irvine is also a partner in an 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 University, an HBCU; California State University-Long Beach, an HSI; and University of Texas-Pan American, also an HSI) allow for undergraduate students from these institutions to conduct nuclear research at UC Irvine in the summers, and these students are also eligible for the nuclear scholarships. Ongoing research activities funded by DOE NEUP and other Federal agencies will be used to leverage funds from the NRC scholarship in order to offer students a unique training experience in the field of cross-cutting nuclear chemical engineering and nuclear materials science engineering.

Principal Investigators: Dr. Mikael Nilsson, nilssonm@uci.edu; Dr. Martha Mecartney, martham@uci.edu

Virginia Commonwealth University (VCU) Nuclear Engineering Undergraduate Scholarship Program

Executive Summary:

The primary objective of Virginia Commonwealth University's (VCU's) Nuclear Engineering Undergraduate Scholarship Program is to attract and retain talented students into VCU's unique ABET accredited Nuclear Engineering 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 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 minorities and female 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 provide relevant internships or co-ops, which are required for the BS degree, and permanent employment opportunities in the nuclear industry to the scholars enrolled in the program. The proposed program will provide nine \$10,000 scholarships each year for two years.

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

Scholarship Program for Excellence and Diversity in Nuclear Engineering Education 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 up to 40 scholarship units of up to \$5,000 each directly targeted to increase both its program's excellence and diversity. A specific goal of this scholarship program is to promote the enrollment of high-potential U.S. undergraduate students with an emphasis upon groups who have been traditionally underrepresented in the nuclear engineering 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 successfully implemented scholarship program from previous NRC grant awards received at UTK.

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

Worcester Polytechnic Institute's (WPI's) Nuclear Science and Engineering Undergraduate Scholarship Program

Executive Summary:

The Worcester Polytechnic Institute Nuclear Science and Engineering (NSE) Program requests support for 8 undergraduate student scholarships per year for 2 years, who each will receive a \$10,000 scholarship and participate in an enhanced educational program described within. To maximize the impact of this scholarship program, we plan to support 16 different students over the two-year period. This award will target junior and senior NSE students, although very promising and committed freshmen and sophomores also will be considered. Our goal is to develop a highly talented and competent workforce to support the national objective for reinvigorating the nuclear power industry.

The WPI Scholarship 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 \$196,022 over two years.

Prior to starting this scholarship, 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 scholarship support. As a scholar, the student will pursue an enhanced project-based educational program designed to enhance the scholar's professional success 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 Investigators: Dr. David C. Medich, decmedich@wpi.edu; Dr. Germano Iannacchione, gsiannac@wpi.edu; Dr. Richard Sisson, sission@wpi.edu; Dr. Peter Miraglia, pqmiraglia@wpi.edu