FY2023 Scholarship Executive Summaries

Institution Name	Award Amount	Title of Grant Award
Virginia Commonwealth University	$ 199,743.00	VCU Nuclear Engineering Undergraduate Scholarship Program
University of Michigan	$ 200,000.00	Nuclear Engineering and Radiological Sciences Undergraduate Scholarship Program at the University of Michigan
University of Illinois at Urbana - Champaign	$ 200,000.00	University of Illinois at Urbana-Champaign Nuclear Leadership Scholarship Program
University of Florida	$ 200,000.00	University of Florida Nuclear Engineering Undergraduate Scholarship Program
Purdue University	$ 200,000.00	Purdue University Cross-Disciplinary Nuclear Workforce Training Undergraduate Scholarship Program
University of Missouri S&T - (Rolla)	$ 199,070.00	Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2024-2027)
Rensselaer Polytechnic Institute	$ 200,000.00	Enabling Strong Growth of the Nuclear Engineering Undergraduate Scholarship Program at RPI
Idaho State University	$ 196,987.00	Idaho State University Nuclear Science Scholarship Program

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Virginia Commonwealth University

VCU Nuclear Engineering Undergraduate Scholarship Program

Executive Summary:

The primary objectives of VCU's Nuclear Engineering Undergraduate Scholarship Program are to 1) attract and retain a diverse group of talented students into VCU's unique ABET accredited Nuclear Engineering Major Concentration Option in the Mechanical Engineering BS program, and 2) to facilitate the future success of these students in a career in the nuclear industry. Between fall 2015 and fall 2023, this scholarship program awarded $559,400 to 46 students. The proposed program continuation will provide $180,000 for six $10,000 scholarships each year for the next three academic years.

In particular, the scholarships will provide additional incentive for students to choose and remain in the Nuclear Engineering Option and allow them to spend more time on coursework instead of part-time jobs. Thirty-two out of 35 awardees responding to an assessment survey stated that the scholarship allowed them to spend more time on academics and 24 out of 35 specifically mentioned that the scholarship allowed them to work fewer hours at a job or not at all. Furthermore 18 out of 35 awardees responding to the survey stated that the scholarship contributed to their decision to stay in the Nuclear Engineering Option. Thus, the scholarship program has clearly provided a valuable impact on student success in the Nuclear Engineering Option.

Furthermore, given VCU's student demographics, status as a minority serving institution (**MSI**) and situation as an urban university, the program is expected to attract a higher-than-average population of traditionally underrepresented minorities. In fall 2023, the VCU Mechanical & Nuclear Engineering (**MNE**) enrollment was 35% minority students, 25% underrepresented minority students & 15% female students. Of the 46 NRC scholarship recipients that have graduated from or are currently in the program, 14 are from underrepresented minority groups and 8 are women.
Another benefit of the scholarship program is extensive professional development, including mentorship from NE faculty advisors, a 1-credit professional course and opportunities for both undergraduate research and conference attendance. At least 15/20 (75%) of the most recent cohort of scholarship recipients have chosen to work in a research lab, and 13/20 (65%) have attended an American Nuclear Society (**ANS**) conference. VCU will provide $12,000 in cost-shared support to enable each student to attend one conference. The VCU ANS and Institute for Nuclear Materials Management (**INMM**) student sections are very active with development opportunities.

VCU has a strong tradition of collaboration with nearby nuclear companies, and these stakeholders provide scholars in the program with relevant internships or co-ops, which are required for the BS degree, and permanent employment opportunities in the nuclear industry. Based on our most recent data from previous scholarship recipients, the program has led to 27 graduates with careers in the nuclear industry. Nine work at Dominion Energy, three work at Huntington Ingalls Industries, five work at the NRC, two work at national labs and eight work in other nuclear-related jobs. In addition, four are currently in graduate school in Nuclear Engineering, and eight are still completing their undergraduate degrees at VCU. We expect the proposed continuation of the VCU Nuclear Engineering Scholarship Program to achieve similar success in leading participants into careers in the nuclear industry.

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FY2023 Scholarship Executive Summaries

University of Michigan

Nuclear Engineering and Radiological Sciences Undergraduate Scholarship Program at the University of Michigan

Executive Summary:
The primary objective of this scholarship is to encourage outstanding undergraduate students to pursue a Bachelor of Science in Engineering (BSE) degree in Nuclear Engineering and Radiological Sciences. This scholarship will provide the financial freedom for these students to pursue academic research and to participate in professional development opportunities so that they enter the nuclear industry as successful, contributing members of the workforce, capable of supporting the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. The principal benefit of this program will be to increase the quality and quantity of human resources necessary to sustain and further develop the U.S. nuclear enterprise.

Principal Investigator:
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FY2023 Scholarship Executive Summaries

University of Illinois at Urbana – Champaign

University of Illinois at Urbana-Champaign Nuclear Leadership Scholarship Program

Executive Summary:
The outset objective of this program is to attract and retain superior undergraduate students to educate in nuclear engineering. This will be accomplished with funding from the U.S. Nuclear Regulatory Commission (NRC) and academic and administrative resources from the Department of Nuclear, Plasma, and Radiological Engineering (NPRE) in the Grainger College of Engineering at the University of Illinois at Urbana-Champaign (UIUC). The end objective of this program is to ensure that students strongly educated in nuclear engineering will enter the workforce to take on leadership positions in support of the design, construction, operation, and regulation of nuclear facilities as well as the safe handling of nuclear materials. The specific goals of this program are to support at minimum ten students, ranging from sophomore to senior standing, on scholarships for the three-year duration period of the program.

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FY2023 Scholarship Executive Summaries

University of Florida

University of Florida Nuclear Engineering Undergraduate Scholarship Program

Executive Summary:
The objective of the 2023 University of Florida Nuclear Engineering Undergraduate Scholarship Program is to produce high quality engineers who benefit the various sectors of the nuclear industry. The goal of this proposal is to provide 5-10 scholarships of up to $10,000 to undergraduates in the nuclear engineering program each year for three years, pursuing either a B.S. degree in nuclear engineering, or a degree in a related engineering discipline with a minor in nuclear engineering. The program will be administered and managed by Dr. Andreas Enqvist, Director of the Nuclear Engineering Program. He will coordinate different functions, including marketing, recruitment, review of scholarship applications, and selection of recipients. The selection process will be conducted using a set of parameters with appropriate weighting for consistency and transparency and use a committee to select the scholarship recipients. The committee will meet annually to select (or renew) scholarship recipients from the pool of new applicants and existing recipients. The committee, with assistance from the coordinator within the Department's Academic Services Office, will submit a periodic report to the NRC Project Manager electronically to ensure reporting requirements are met as intended.

The 2023 University of Florida Nuclear Engineering Undergraduate Scholarship Program intends to award scholarships to individuals pursuing nuclear science, engineering, health physics, and other disciplines that may be beneficial in developing and maintaining a nuclear workforce. Students must be enrolled in our undergraduate bachelor's degree program. Eligible candidate will be ensured to have good academic standing, competitive GPA, and be classified as full-time students. The selection of awardees will be done by a The NEP Undergraduate Scholarship Committee. After the scholarships are awarded, the UF NEP Undergraduate Scholarship Committee, will monitor educational progress of each scholarship recipient. We will track progress in courses and progress towards degree. This will be noted in a semester-by-semester report that will be retained by the Principal Investigator of the project. Students receiving a 2023 University of Florida Nuclear Engineering Undergraduate Scholarship will be required to sign the terms and conditions form indicating they accept service agreement terms for the NRC scholarship.

Scholarship students will be monitored for academic progress as previously mentioned. Further they will be encouraged to interact more frequently with the NE undergraduate coordinator and the NE program director. The students have excellent support in the academic services office in the department. Specifically, for NRC scholars the mentoring will also include assistance and encouragement to explore internships and contacts in industry & government that could be pathways for completing their service requirement post-graduation. This is all aimed to achieve the programs' primary objective: to support scholarships for nuclear science, engineering, health physics, and related disciplines to develop a workforce capable of supporting the design, construction, operation, and regulation of nuclear facilities as well as the safe handling of nuclear materials. Related disciplines supported by this funding are intended to benefit the nuclear safety and security sector broadly.

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Purdue University

Purdue University Cross-Disciplinary Nuclear Workforce Training Undergraduate Scholarship Program

Executive Summary:
The objectives of the Cross-Disciplinary Nuclear Workforce Undergraduate Scholarship at Purdue University are (a) to recruit, retain, and mentor domestic nuclear science and engineering students of high academic ability and performance in an undergraduate program with a particular focus on underrepresented and minority groups, (b) to provide scholars with high quality education and research opportunities with minimal financial burden, (c) to cultivate undergraduate students to become career professionals and leaders who can contribute expertise to the nuclear engineering community, and (d) to create a consistent and sustainable workforce in various sectors of nuclear science and engineering including the nuclear power industry, national laboratories, regulatory agencies and other nuclear-related government agencies. The program highlights include a focus on recruitment to broaden participation and academic diversity. leveraging of our prior NRC support at Purdue within the existing PI team; unique multi-tiered mentorship provided by faculty, current graduate students, and recent Purdue graduates; engagement in undergraduate research, summer programs, and professional conferences; leveraging institutional support; and a novel nuclear workforce seminar series. The careful program design, management, and evaluation will enable Purdue to build a lasting community of students, faculty, and researchers focusing on two areas integral for nuclear energy growth: health physics and nuclear energy materials, ensuring the University will continually prepare and train a qualified pool of students for successful careers in the nuclear industry.

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FY2023 Scholarship Executive Summaries

University of Missouri S&T - (Rolla)

Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2024-2027)

Executive Summary:
The objective of the proposed project is to support the development of a qualified nuclear workforce by recruiting and training high-quality students. To that end, between five (5) and ten (10) students each year will receive scholarships under this award. The selected students will receive between $4,500 and $10,000 each per academic year ($2,250 to $5,000 per semester) to partially defray the cost of tuition and fees. In addition to financial support from the scholarship program, students selected for NRC scholarships will have a number of other benefits. Those who participate in either undergraduate research supported by a faculty member or in the reactor operations program at MSTR will also receive between $600 and $1,200 in funding to support their project or role as part of their scholarship. MSTR is further committed to supporting scholarship students by providing no-cost access to irradiation and characterization facilities for research projects as well as no-cost training and support for students involved in both research and reactor operations training. The expected value of these contributions is estimated to be $6,000 per student for reactor operator training and/or up to $3,000 per student in support of undergraduate research. Each scholarship recipient will also be assigned an advisor in NERS. The role of the advisor will be to act as a mentor. They will help students choose appropriate coursework, provide guidance in professional challenges, and support the student's professional development and networking efforts. The advisor will also assist the student in finding appropriate summer employment opportunities. Missouri S&T already has strong relationships with Curium Pharmaceuticals, TransWare Enterprises, and Ameren Missouri. Each of these companies typically recruit one to four interns from Missouri S&T each year and already employ numerous NERS alumni. Scholarship recipients will also be provided with a number of professional development opportunities. They will have the opportunity to join the NERS advisory board for lunch at their annual meeting for a valuable networking opportunity and will be invited to attend a short social with the NERS faculty, recruiters, and alumni as part of the yearly Nuclear Engineering career fair at Missouri S&T. These activities will allow scholars the opportunity to interact with NERS's extensive alumni network. Finally, each year the NRC scholarship recipients will work with the PI to develop competitive resumes and improve their interview skills in preparation for the Missouri S&T Fall Career Fair, which typically occurs during the third week of September each year, as well as a smaller career fair that takes place in the spring semester. NERS is also committing $4,000 each year to support registration and travel expenses for NRC scholars to attend professional conferences.

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FY2023 Scholarship Executive Summaries

Rensselaer Polytechnic Institute

Enabling Strong Growth of the Nuclear Engineering Undergraduate Scholarship Program at RPI

Executive Summary:
Just as the quality and loading of fuel in the core determines a nuclear reactor's power output and efficiency, so too is the strategic recruiting and development of students critically important to the vitality and future of the nation's university based nuclear engineering programs. The Nuclear Engineering (NE) program and Rensselaer Polytechnic Institute (RPI) are committed to utilizing this opportunity to **bring talented, enthusiastic, and diverse students into nuclear engineering fields to create a future powerhouse of multidisciplinary nuclear careers**. The proposed program consists of *NE program capabilities and commitments, recruitment activities / marketing strategies, selection process, management structure and program administration, student academic/technical support and assistance, evaluation plan, institutional support and sustainability, and partnerships with other programs and institutions*. If funded, NE faculty will work with the active American Nuclear Society (ANS) and Women in Nuclear (WIN) student chapters immediately to implement recruitment, application, selection, supporting, and evaluation processes.

Benefits: The project will directly and greatly contribute to recruiting, educating, retaining, and advancing the nuclear workforce by promoting three important goals / benefits. 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 an inclusive community, diverse in many ways, with enthusiastic students from different backgrounds. And lastly, these scholarship recipients will become nuclear knowledge/education ambassadors who facilitate community understanding and acceptance.

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Idaho State University

Idaho State University Nuclear Science Scholarship Program

Executive Summary:
The objective of the Idaho State University (ISU) Nuclear Education Scholarship Program is to provide financial support and professional development opportunities to undergraduate students in nuclear engineering and health physics BS degree programs. ISU is requesting from NRC funds for 5 two-year tuition scholarships during each of 3 years and to support the professional development of the scholars via opportunities including technical tours, participation in professional technical conferences, and training as an operator for ISU's nuclear reactor. In addition to the obvious financial benefits experienced by the scholars themselves, this scholarship program will benefit the broad nuclear industry by contributing to the education and development of successful graduates who enter the nuclear work force. Previous NRC scholarship awards to Idaho State have been successfully administered and have played a significant role in attracting and retaining students in our nuclear science and engineering degree programs.

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