FY 2013 Scholarship Grant Program Awards (12 awards)

University	Amount	Title
Alcorn State University	$199,966	Attraction and Retention of Minority Students into Nuclear Fields (Health Physics) through Education, Scholarship, and Training
Auburn University	$191,471	Auburn University Nuclear Power Generation Systems (NPGS) Scholarship Program
City College of New York	$134,114	Nuclear Energy Scholarship Program at City College of New York
Florida International University	$200,000	FIU Nuclear Scholarship (FNS) Program
Idaho State University	$173,698	Idaho State University Nuclear Education Scholarship Program
Polytechnic Institute of New York	$189,136	Polytechnic Institute of New York University Nuclear Scholarship Program
University of Texas at Austin	$80,000	University of Texas at Austin Scholarship Program
Texas A&M University – Kingsville	$199,458	Scholarship Grant Supporting Nuclear Engineering Education at Texas A&M University-Kingsville
University of Massachusetts – Lowell	$199,440	UMass Lowell Nuclear Engineering and Radiological Sciences Scholarship Program
University of Rhode Island	$128,497	URI Scholarship Program
University of Tennessee	$200,000	Scholarship Program for Excellence and Diversity in Nuclear Engineering Education at the University of Tennessee
Utah State University	$200,000	Nuclear Engineering Scholarship

FY 2013 Fellowship Grant Program Awards (17 awards)

University	Amount	Title
Georgia Institute of Technology	$400,000	The Nuclear and Radiological Engineering Fellowship Program at the Georgia Institute of Technology
Massachusetts Institute of Technology (MIT)	$400,000	Massachusetts Institute of Technology (MIT) Nuclear Education Grant Fellowship Program
North Carolina State University	$400,000	North Carolina State University's Graduate Fellowship In Nuclear Engineering
Ohio State University	$389,126	Ohio State University Fellowship Proposal
Rensselaer Polytechnic Institute	$400,000	Rensselaer Nuclear Fellowship Program
University of Florida	$357,170	University of Florida Nuclear Engineering NRC Fellowship Program
University of Michigan	$400,000	Nuclear Engineering Graduate Fellowship Program at the University of Michigan
University of Missouri-Columbia	$389,120	University of Missouri Fellowship Program in Nuclear Engineering and Health Physics
University of Missouri S&T	$400,000	Graduate Fellowships in Nuclear Engineering at Missouri S&T
University of Nevada – Reno	$399,926	The University of Nevada, Reno Fellowship Program in Materials and Thermal Science for Nuclear Energy
University of Texas at Austin	$394,903	Nuclear Education Fellowship Program at The University of Texas at Austin
Texas A&M University - College Station	$400,000	Texas Nuclear Engineering Graduate Fellowship Program
University of Utah	$389,312	Sustaining Explosive Growth of Nuclear Engineering Graduate Program at the University of Utah
Virginia Commonwealth University	$377,568	VCU Nuclear Engineering Graduate Fellowship Program
University of Wisconsin – Madison	$363,642	University of Wisconsin Graduate Fellowship Program in Nuclear Engineering
University of Illinois at Urbana-Champaign	$400,000	University of Illinois at Urbana-Champaign Nuclear Engineering Education Fellowship Program
Idaho State University	$118,699	Idaho State University Fellowship Program

Attraction and Retention of Minority Students into Nuclear Fields (Health Physics) through Education, Scholarship, and Training

Executive Summary:

Health Physics and Radiological Technology (HP/RT) is one of the new Science, Technology, Engineering, and Mathematics (STEM) curricula commenced in the fall of 2007 at Alcorn State University (ASU). ASU is the oldest member of the 1890s land grant Historically Black Colleges and Universities (HBCU) institutions with a student body consisting of at least 90% of minorities. The currently enrolled student population is mostly African-American with a significant number of female students. ASU is the only university in the state of Mississippi offering degrees (B.S and M.S) in health physics.

The goal of this project is to enhance student enrollment (primarily graduate) by providing scholarships and training to qualified minority students in the department of Health Physics at ASU. Once the project is completed, it is anticipated that ASU HP department will have trained 10 to 15 future scientists in the nuclear field (graduate) which is in a great need of workforce locally and nationwide. This proposal requests funds to provide scholarships in one of the state supported institutions located in rural Mississippi.

Principal Investigator: Jermiah Billa, Billa@alcorn.edu

Auburn University Nuclear Power Generation Systems (NPGS) Scholarship Program

Executive Summary:
In 2010, Auburn University's Samuel Ginn College of Engineering interviewed 39 industry leaders nationwide about recruitment needs within the resurgent nuclear power industry. The industry requires a skilled workforce to replace retirements expected to reach 25%, over the next four years. From the educational needs and skills specified by those industry leaders, Auburn University developed a unique 17 credit-hour undergraduate engineering minor. The Nuclear Power Generation Systems (NPGS) minor is a comprehensive program that includes classroom education, on the job experience and a "hands-on" lab program to prepare graduates to be productive from day one on the job. Students are recruited by social media, literature to high school recruiters and presentations to incoming freshmen and parents at summer orientation. Women, minorities and disadvantaged individuals receive focused attention. The program has three industry sponsors: Southern Nuclear Company, TVA and Williams Industrial Services, Inc. contributing funds in addition to plant visits, internships, and cooperative education opportunities. Seventeen (17) graduates are expected in the spring/summer 2013. Growth goals are to increase the current student level to at least 100 per year from the 80 currently enrolled. Because this minor requires approximately two additional semesters of course work, the primary objective of the existing NPGS Scholarship Program is to provide financial aid for qualified students to ease the cost burden and attract more students. This scholarship program will be administered by the Office of Engineering Student Services. The planned award for the proposed 15 NRC scholarships is $4,500/year over two years.

Principal Investigator: Bob Karcher, karchcr@auburn.edu

Nuclear Energy Scholarship Program at City College of New York

Executive Summary:

Ten scholarships will be awarded to 10 qualified undergraduate and Master of Engineering students in each semester over two years. A new program called **Nuclear Engineering Concentration** was successfully launched in 2010 with an education curriculum development grant from NRC in 2009. Over the past 2.5 years, a total of 166 students have been enrolled in 7 courses offered with an average enrolment of 24 students per course. As CCNY is a minority and a Hispanic Serving Institution, the nuclear education and research program developed and NRC scholarships have provided minority students 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, 11% of the grant 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 Brookhaven National Laboratory.

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

FIU Nuclear Scholarship (FNS) Program

Executive Summary:

Establish the FIU Nuclear Scholarship (FNS) Program to support growing nuclear programs which would be expanded to corporate and Dept. of Energy support before 2015. FIU will be able to recruit students into 10 new nuclear courses currently under development with NRC Curricula Development Award, and provide them with research opportunities that will prepare them for entry into the nuclear workforce of the future. This program will be expanded with support of nuclear companies (FPL) and others. Fifteen bright FIU students will be selected for these scholarships with radiochemistry as a focus. A majority of the students will be minority students reflecting Miami's diverse population. Students already recruited to FIU Miami Dade College (over 100,000 students) will be made aware of this program. FIU undergraduates (>50,000 total students) will also be made aware of this program through emails, career counseling offices, and info booth at 5 FIU events. FIU is **cost matching 12%** to expand this opportunity. FIU awards more Bachelor degrees to Hispanics and to total minorities than any other institution in the continental USA. It is also among the top major institutions in the nation in awarding degrees to African Americans. FIU's dynamic student body reflects the vibrant diversity of South Florida with 59% hispanic-latino, 13% black, and 56% female students.

Principal Investigator: Konstantinos Kavallieratos, kavallie@fiu.edu

Idaho State University Nuclear Education Scholarship Program

Executive Summary:

Idaho State University (ISU) places great importance on building and maintaining strong nuclear science and engineering programs. Undergraduate scholarships have played an essential role in the progress made toward this goal in the past seven years. The objectives of the program proposed here are to provide (1) undergraduate scholarships to pursue degrees in nuclear science and engineering at ISU, and (2) professional development opportunities for scholars outside the academic environment.

ISU is requesting from NRC funds for eight two-year scholarships for undergraduate students in both nuclear engineering (5) and health physics (3). Funds are also requested to support the professional development of the scholars via a technical tour and participation in a professional technical conference. Previous NRC program funds have been used to leverage the groundwork of an undergraduate nuclear engineering (NE) scholarship program that will end after this, it's seventh, year at ISU, the AREVA scholarships (formerly AREVA 2+2). This program, combined with our NRC scholarship program, has enabled ISU to grow and maintain its young BS program in NE and indirectly to re-invigorate its long-standing graduate program. The NE/HP Scholarship program is multifaceted, and includes support for tuition, fees, health insurance; a modest stipend; and an annual tour of regional nuclear facilities. The faculty assists in placing the student scholars in summer internships at the Idaho National Laboratory. The NE/HP Scholarship program draws engineering students within ISU and from other locations around the state and the U.S with positive result. AREVA scholarship funding will end with the 2012-2013 academic year, but the successful program may continue with NRC scholarship funding. This proposal is for new NRC-funded scholarships to continue with the sane effective features, while satisfying any new requirements set out in the NRC Announcement of Opportunity.

The proposed ISU Nuclear Education Scholarship Program would contribute to strengthening the undergraduate nuclear science and engineering program, which in turn will help grow the graduate program. ISU believes that this program will benefit the University and the nuclear industry by helping to develop successful graduates that become an integral part of the nuclear workforce.

Principal Investigator: **Mary Lou Dunzik-Gougar,** mldg@isu.edu

Polytechnic Institute of New York University Nuclear Scholarship Program

Executive Summary:

Our primary objective is to provide scholarship support to undergraduate students at the Polytechnic Institute of New York University (NYU-Poly) who have demonstrated an interest in nuclear science and engineering and in related careers. Our Interdisciplinary Minor in Nuclear Sciences and Engineering targets students who may enter the 90-95% of occupations at nuclear installations that require technical expertise other than nuclear engineering. These students of engineering, science, and computer science, who have a demonstrated interest in exploring the world of nuclear science and engineering, are prime candidates for employment in the nuclear power industry, its related industries, and other industries that use nuclear technologies. A targeted scholarship program will encourage more students to enroll in courses for the minor, strengthen the academic profile of participating students, and lead to more and better qualified applicants for the anticipated surge of vacancies in the nuclear industries and government as the current generation of workers begin to retire and new facilities are planned, built and become operational. Since the minor is focused on career paths that make up the vast majority of positions in the nuclear industry, NYU-Poly anticipates continued success in each aspect of the program: recruitment, retention, and job placement.

Principal Investigator: Lorcan M. Folan, folan@poly.edu

University of Texas at Austin Scholarship Program

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.

Principal Investigator: Steven Biegalski, biegalski@mail.utexas.edu

Scholarship Grant Supporting Nuclear Engineering Education at Texas A&M University-Kingsville

Executive Summary:

The proposed project will offer scholarship to students who minor in our new NUCLEAR ENGINEERING minor program within the Mechanical and Industrial Engineering Department at Texas A&M University-Kingsville (TAMUK). The minor program has been developed with the NRC funded project from Aug. 2011 to Aug. 2013. The proposed scholarship will support 10 students every year. The purpose to offer this scholarship is to attract, retain high quality students to the pursue Nuclear Engineering minor program and prepare them for the career success in nuclear related fields. This scholarship will also help the students who have financial needs to complete their degree. Particular recruiting and marketing strategies to attack Hispanic and Female students are proposed. Evaluation plan and student tracking system are discussed to ensure the successful completion of this project.

Principal Investigator: Dr. Yousri Elkassabgi, Y-Elkassabgi@tamuk.edu

UMass Lowell Nuclear Engineering and Radiological Sciences Scholarship Program

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 (NE) and the Radiological Sciences (RS) program. UML has had a nuclear program since the 1960's. Recently, these programs have gone through revitalization due to senior administration support and several recent grants from NRC and DOE. This has allowed us to: hire new faculty, Drs. S. Aghara and E. Sajo; develop new courses; and upgrade our nuclear research reactor facilities. We have observed a significant increase in enrollments within physics and engineering (~26%) during the last five years.

The objective is to capitalize on these developments; we are requesting $199,440 from NRC to boost our recruitment and retention efforts at UML in our NE and RS 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 our NE and RS undergraduate and graduate programs.

Principal Investigator: Sukesh Aghara, Sukesh_Aghara@uml.edu

NEEPRI-NRC Scholarships

Executive Summary:

The NEEPRI-NRC Scholarships program will enable the Nuclear Engineering minor program at the University of Rhode Island to offer ten scholarships per semester to students enrolled in the nuclear engineering minor. The nuclear engineering minor was established with support from the NRC curriculum Award during 2008-2012. The nuclear engineering minor consists of an additional 18 semester credits in nuclear engineering courses added to requirements for mechanical, chemical, electrical, industrial, civil, or ocean engineering BS degrees which are all ABET accredited. The proposed scholarship program leverages the existing NRC education grant funded program, faculty, staff, and facilities to recruit and encourage a much wider population of students to participate in the nuclear option under NEEPRI. The scholarships will be offered to students that meet the eligibility requirements as established by the NRC and the NEEPRI program. The program will implement a comprehensive and inclusive recruiting and selection process. Comprehensive formative and summative evaluation plans have been formulated to assess the effectiveness of the scholarship program. The program will be supported by the Rhode Island Nuclear Science Center by providing access to the classroom, laboratory, and reactor facilities as well as staff support.

Principal Investigator: Bahram Nassersharif, bn@uri.edu

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 forty (40) scholarship units each directly targeted to increase its program's excellence and diversity, both. A specific goal of this scholarship program is to explicitly increase the enrollment of high-potential US undergraduate students with a special emphasis upon groups who 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. Of particular focus are new students entering nuclear engineering (front-end) as well as those at the senior level who may be contemplating graduate school (back end).

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

Scholarship Program at Utah State University

Executive Summary:

Utah State University's Nuclear Energy Scholarship Program will competitively select and award 18 scholarships per year to junior and seniors students interested in pursuing a nuclear related career. These students will be encouraged to get research experience by working with faculty members with nuclear research programs in the recently established nuclear engineering research center, Thermohydraulics and Materials Properties Research Center at USU. The scholarship students will also have opportunities to tour the TRIGA reactor at the University of Utah and tour the Idaho National Laboratory. The 2009 NRC Scholarship program at USU attracted top undergraduate students to nuclear engineering and produced graduate students pursuing nuclear research at USU and other universities as well as nuclear related employment. The success of the 2009 NRC Scholarship program also boosted the number of PhD students focusing on nuclear engineering research at USU. This proposed scholarship program will further enhance the emerging nuclear program at USU and attract and retain top students to pursue careers in nuclear energy.

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

The Nuclear and Radiological Engineering Fellowship 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 nuclear and radiological engineering fellowship program. The fellowship program will provide 8 one-year fellowships (2 fellowships each year for 4 years) for highly qualified graduate students. The proposed fellowships will cover up to the cost of tuition, mandatory student fees, books and supplies, and stipends. The fellowship program will focus on the recruiting and retention of top nuclear engineering students who come to Georgia Tech to obtain an MS or Ph.D. degree in nuclear engineering.

Principal Investigator: Farzad Rahnema, farzad@gatech.edu

Massachusetts Institute of Technology (MIT) Nuclear Education Grant Fellowship Program

Executive Summary:

The MIT Nuclear Education Grant fellowship program, administered in the department of Nuclear Science & Engineering with U.S. NRC grant funds, is expected to strengthen the ability of the department of Nuclear Science and Engineering to attract talented graduate students by providing an additional means to offer full financial aid to those students who are undecided between the field of nuclear science and engineering and other engineering disciplines.

The MIT Nuclear Education Grant fellowship program will also provide students with opportunities to work on research projects that are relevant to the U.S. NRC and the nuclear industry. Many of these research projects are being conducted with nuclear industry support and/or involvement, thus creating opportunities for direct and meaningful interactions among the students and nuclear industry.

Principal Investigator: Jacopo Buongiorno, jacopo@mit.edu

North Carolina State University's Graduate Fellowship In Nuclear Engineering (NCSU–GFINE)

Executive Summary:

The primary objective of NCSU–GFINE is to enhance the ability of NCSU's Department of Nuclear Engineering to recruit and retain outstanding individuals and to provide incentive to the sponsored graduate students to maintain high academic performance. In addition, the selection formula will slightly favor minorities, women, and persons with disabilities in order to further promote diversity in the department's graduate student population. Ultimately, the collective effort by US educational institutions to raise the admission standards and to diversify their graduate student populations, as proposed here for NCSU, will translate into a highly competent and diverse cadre of leaders for the nuclear engineering endeavor at large. The benefit to the nation from NCSU–GFINE is that it will contribute to the production of a highly competitive group of advanced-degree nuclear engineers capable of assuming leadership positions in their area of specialization within the field of nuclear engineering. The diverse profile of NCSU–GFINE fellows will be reflective of the US's population and supportive of the nation's goals of achieving social justice and economic equity for underprivileged groups. The so-developed workforce will be best positioned to lead the nation's charge to reinvigorate its nuclear industry, and will shepherd the design, construction, operation, and regulation of new and innovative nuclear facilities, while maintaining the safety and security of processes for the handling of requisite nuclear materials. The commitment by NCSU's Department of Nuclear Engineering and College of Engineering to the success of NCSU–GFINE is evidenced by a cost-sharing contribution. The support of industry for the Department and its mission, and their interest in NCSU–GFINE is evidenced by Areva's contribution to the cost-sharing arrangement.

Principal Investigators: Yousry Y. Azmy, yyazmy@ncsu.edu; K. Linga (KL) Murty, murty@ncsu.edu

Ohio State University Fellowship Proposal

Executive Summary:

The Ohio State University Nuclear Engineering Program proposes to administer a fellowship program grant that will effectively support three graduate students over the duration of the project. In order to enable some fellowship students to participate in summer internships, it is anticipated that support will be provided to four graduate students for differing time periods over the four year program. Thirty-one total semesters of fellowship will be supported by this program. It is assumed that two of the four of the students will take one summer off for an internship. The proposal describes the manner in which candidates would be recruited, fellows selected, and the effectiveness of the program periodically reviewed and improved. Special effort is involved in the recruiting program to attract qualified students from under-represented groups. In order to maximize the number of fellowships, OSU is providing substantial cost sharing. OSU will cover the expense of all tuition and fees for one of the students (four years). In addition, no administrative charges or indirect costs will be made against the program. An agreement is described between OSU and two Ohio HBCUs regarding the inclusion of graduates from the minor programs at those two programs for special consideration for fellowships. In addition, Areva has committed to the continuation of financial support for two additional years for the use of the OSU nuclear reactor for regional educational purposes as leveraged funding for this proposal.

Principal Investigator: Richard S. Denning, denning.8@osu.edu

Rensselaer Nuclear Fellowship Program

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 standard 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 Investigators: Wei Ji, jiw2@rpi.edu ; Peter F. Caracappa, caracp3@rpi.edu

Nuclear Engineering Program (NEP) at the University of Florida (UF)

Executive Summary:

The goal of this proposal is develop a fellowship program within the Nuclear Engineering Program (NEP) at the University of Florida (UF) for students pursuing a graduate education in Nuclear Engineering. This program will be coordinated by a team of three faculty in NEP, including the Program Director, and two additional faculty. This committee will coordinate different functions, including advertisement, recruitment, review of fellowship proposals, and selection of recipients. The selection process will be conducted using a set of parameters with appropriate weighting for consistency and transparency. The Committee will meet annually to select (or renew) fellows from the pool of new fellowship applicants and existing recipients. The Committee, with assistance from each student's Ph.D. advisor, will monitor the educational program of each fellow, and prepare and submit a semiannual progress report and a final report to the NRC Project Manager electronically. We are requesting 2 fellowships/year over 4 years.

Principal Investigator: Simon Philpot, sphil@mse.ufl.edu

Nuclear Engineering Fellowship Program

Executive Summary:

The University of Michigan Department of Nuclear Engineering and Radiological Sciences propose a Nuclear Engineering (NE) Graduate Fellowship Program that will provide support 2 students per year for 4 years as NE Fellows. Fellows must be US citizens or permanent residents. The MS Fellows will receive one year (12 months) support with a guarantee of an additional term of support from Department resources. The NE PhD students will be supported by the NE Fellowship for up to two years. Oversight for the NE Fellowship Program will be provided by the NE Fellowship Committee, which will select the NE Fellows, monitor their progress, and evaluate the effectiveness of the NE Fellowship Program.

Principal Investigators: William R. Martin, wrm@umich.edu

University of Missouri Fellowship Program in Nuclear Engineering and Health Physics

Executive Summary:

The University of Missouri-Columbia is requesting four fellowships to educate and train graduate students in Nuclear Engineering and Health Physics. Faculty managing these fellowships are currently housed in the Nuclear Science and Engineering Institute (NSEI) at the University. The specific areas of research for the fellows will be chosen from issues associated with licensing, safety, and design of small modular reactors (SMR), dry cask and interim storage of spent nuclear fuel, filtered venting of containments, measurements of material properties associated with life extension and aging of nuclear reactors, radiation protection and safety, advanced computations for nuclear fuel and source terms, proliferation resistant nuclear reactor designs and fuel cycles, radiation and neutron detectors, probabilistic threat and risk predictions and analyses. Currently (2012-2013), NSEI has 59 graduate students; we can easily accommodate four new graduate students in the proposed areas, who will be selected such that they certainly meet and possibly exceed NRC criteria of eligibility. The fellows will work with faculty who are recognized nationally and internationally for their research and scholarly productivity. Students will also have access at the highest powered university research reactor in the nation for their research, and also opportunities for research with industry, national laboratories, and internationally. The progress of the fellows will be closely monitored, and the program will be evaluated continually to ensure the success of the fellows towards their graduate degrees, and eventual participation in the nuclear community.

Principal Investigator: Sudarshan K. Loyalka, loyalkas@missouri.edu

Graduate Fellowships in Nuclear Engineering at Missouri S&T (2013-2017)

Executive Summary:

The entirety of the requested USNRC funding will completely cover the cost of tuition and fees for 3 fellows each year for four years. In addition, the fellowships will also provide a stipend equivalent to a half-time research assistantship. 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. Participation of women, minorities, and students with disabilities will be encouraged and promoted (the fellowship committee members includes a woman and two minorities). The fellowships will provide opportunities for high performance students to pursue research in nationally important areas in radiochemistry, nuclear materials and health physics in collaboration with national laboratories. In addition, we have partnered with Southern University of Baton Rouge, Louisiana (HBCU) to provide Reactor Laboratory and Radiation Measurement & Spectroscopy Laboratory experience to minority graduate students by distance education in

Principal Investigator: Arvind Kumar, kumar@mst.edu

The University of Nevada, Reno Fellowship Program in Materials and Thermal Science for Nuclear Energy

Executive Summary:

Since 1992, the University of Nevada, Reno (UNR) has conducted externally-funded research on the response of spent nuclear fuel transport casks to fire accident conditions, and performance and reliability of materials in advanced nuclear power applications. This work has been funded by the NRC, DOE, NEUP, National Laboratories, the State of Nevada and a private corporation. The proposed grant will continue a Fellowship Program in Materials and Thermal Science for Nuclear Energy that supports outstanding students to earn graduate degrees at UNR. The goal is to increase the number and quality of students receiving MS and Ph.D. degrees at UNR who are able to support the design, construction, operation, and regulation of nuclear facilities, and the safe handling of nuclear materials. Fellows will be encouraged to spend one summer at the NRC, a National Laboratory, or an industrial nuclear facility in order to gain work experience and develop professional contacts that will help them find an appropriate nuclear related professional placement after graduation. Entire amount of the requested funding will go towards supporting graduate Fellows.

Principal Investigator: Dev Chidambaram, dcc@unr.edu

Nuclear Education Fellowship Program at The University of Texas at Austin

Executive Summary:

Over the four year performance period, one line will support three MS students while the other will support two MS or PhD students. The fellowships awarded for AY 2013-14 through 2016-17 will run for up to two years for the MS students and up to three years for the MS/PhD students.

The prestigious nature of the fellowship award will be emphasized when the fellowships are advertised nationally. We plan to utilize the fellowships to expand our applicant pool by advertising in venues such as American Nuclear Society national and student conferences and distribution of promotional materials to faculty colleagues at target institutions. In addition, we will utilize the UT Equal Opportunity in Engineering Office to distribute the publicity information to professional societies targeting minorities and underrepresented groups such as SWE, NSBE and SHPE. Receipt of fellowship support is intended to be a significant achievement; to reinforce the importance of the award, we plan to pay the fellows a stipend approximately fifteen percent higher than that typical of graduate students in our program.

The student application process and the ongoing evaluation procedure for the fellowship recipients been designed to ensure that a high-quality, diverse group of students become fellows, that these students produce outstanding work while they are supported, and that they meet the fellowship obligation of employment within our industry.

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

Texas Nuclear Engineering Graduate Fellowship Program

Executive Summary:

The Department of Nuclear Engineering at Texas A&M University (TAMU) proposes to continue the four-year Texas Nuclear Engineering Graduate Fellowship Program, established under sponsorship of the U.S. NRC in Fall 2009. This program will provide two fellowships per year for students pursuing Ph.D. or M.S. degrees in Nuclear Engineering and Health Physics within the Department of Nuclear Engineering at TAMU (over the course of 4 years, 8 fellows will be selected). The fellowships will cover tuition, fees, stipends, and support for travel to professional conferences.

The fellowship program has an integrated structure that promotes the fellowship recipients' academic and professional success from recruitment to employment in the nuclear sector. The following components will be combined into an efficient and effective program: (1) Recruiting program, (2) Fellowship recipient selection process, (3) Retention program, and (4) Employment program.

The program will continue to attract top-ranked graduate applicants to our department, while promoting participation of minorities, and will foster student creativity and allow for student initiated research.

Principal Investigator: Jean C. Ragusa, jean.ragusa@tamu.edu

SUSTAINING EXPLOSIVE GROWTH OF NUCLEAR ENGINEERING GRADUATE PROGRAM AT THE UNIVERSITY OF UTAH

Executive Summary:

We became one of the fastest growing programs in the country in last two years: as of fall of 2012, we have 29 graduate students but just two tenure faculty in comparison to 9 graduate students in fall of 2011. Our program has been successfully attracting the students from within our university, but also from other national and international nuclear programs. We were recipients of the fellowship program in 2012 and although with a funding at the modest level (two MS students per year), this resulted in an explosive interest among the students across many different engineering, science and medical disciplines, especially at the University of Utah, to apply for our graduate program in seeing nuclear engineering as their new and finite profession. As of fall 2012, we have six (or more) students coming from our minor in nuclear engineering into our graduate program. In addition, during 2012/2013 we will hire two new faculty at assistant/associate levels. Thus, this new fellowship award program will help us sustain our growth and will certainly add to the popularity of our graduate program in attracting outstanding students from within our university but also from across the country.

Baseline objectives of this fellowship program are to contribute in preparing the outstanding graduates to become career professionals and leaders in the nuclear sector and government regulatory agencies. Additionally, support of a fellowship program at the University of Utah will continue to increase the number of highly qualified undergraduate students entering our graduate program and thus create the opportunities for their career success and leadership roles within the nuclear sector.

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

VCU Nuclear Engineering Graduate Fellowship Program

Executive Summary:

VCU's Nuclear Engineering Graduate Fellowship Program seeks to award fellowships to two graduate students pursing doctoral studies in the field of mechanical and nuclear engineering. Special emphasis will be placed on motivating students from underrepresented groups to compete in the process. Virginia Commonwealth University's department of Mechanical and Nuclear Engineering offers a unique doctoral program which is a combination of two major engineering fields: Nuclear and Mechanical. Such an interdisciplinary academic program is highly attractive to industry, federal government agencies and national laboratories. VCU is currently the only university in Virginia to offer graduates degrees in nuclear engineering, including the state approved MS and PhD degrees in Mechanical and Nuclear Engineering. The fellowships are expected to cover tuition and fees, along with a monthly stipend for the two students over a span of four years. VCU's Nuclear Engineering Graduate Fellowship Program will be very helpful for VCU's department of mechanical and nuclear engineering to recruit, retain and support promising individuals who can intellectually and professionally contribute to the various fields of nuclear science and technology.

Principal Investigator: Dr. Karla Mossi, kmmossi@vcu.edu

University of Wisconsin Nuclear Fellowship Program

Executive Summary:

The Nuclear Engineering and Engineering Physics Program (NEEP) in the Engineering Physics (EP) Department at the University of Wisconsin-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 NRC, other Federal agencies, State agencies, Department of Energy laboratories, nuclear-related industry, or academia in their sponsored fields of study. Prof. Douglass Henderson, Professor of Nuclear Engineering in the Department of Engineering Physics and Director of the Graduate Engineering Research Scholars (GERS) program will continue to administer the department's successful fellowship program. Prof. Henderson is currently managing the NRC Fellowship Education Grant awards from 2008, 2009, 2010 and 2012 and the GERS program in the College of Engineering (since 1999). 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 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 be accomplished in two ways. First, Prof. Henderson and the EP department chair will utilize EP faculty to provide an ongoing review of each student's progress toward their degree, as well as interactions with the nuclear power industry during summer internships. Second, the program will be reviewed by GERS program faculty annually as part of the UW-Madison Graduate School requirements for program quality and outcome assessment. A concerted effort will be made to recruit traditionally under-represented students into the NE program from our traditional minorityserving institutional partners and from other majority institutions through the GERS program.

Principal Investigator: Douglass Henderson, henderson@engr.wisc.edu

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

Executive Summary:

The objectives of this program are to attract and educate top US graduate students in nuclear engineering. This will be accomplished with the financial resources from the NRC and the academic and administrative resources from the Department of Nuclear, Plasma and Radiological Engineering (NPRE) at the University of Illinois. This program will ensure that the best and brightest students are well prepared to join the nuclear workforce following a very strong, competitive graduate education in nuclear engineering. The NRC Fellowship resources will be used to attract and support at least three (3) graduate students each year for the four year duration of the award. The program will be coordinated with support from our major nuclear industry partners, Exelon and Sargent & Lundy.

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

Idaho State University Fellowship Program

Executive Summary:

Idaho State University (ISU) is requesting grant funding for two, single year graduate fellowships given over the four-year award period. The awards are designed to go to master's (M.S.) and doctoral (Ph.D.) degree students, and will be distributed equally between the Nuclear Engineering Program and the Health Physics Program.

The ISU Nuclear Engineering Program and Health Physics Program are well suited to successfully recruit, select and mentor students that will receive NRC fellowships because of the close ties to the INL and the participation in the Center for Advanced Energy Studies (CAES). Through the development of a Fellowship Program, a selection and management committee will assure that only the most qualified students will receive a fellowship award. The committee will also track the progress of the fellows both in school and after. The ISU administration and the state of Idaho are committed to effectively support nuclear science and engineering education in the state of Idaho. This has been evidenced by recent state funding to CAES to supplement faculty at the three universities. A strong partnership with Idaho National Laboratory (INL) has resulted in the development of programs specifically designed to educate students to serve in the nuclear energy profession. Ultimately, ISU believes that this program will help develop successful graduates that will become an integral part of the nuclear workforce.

Principal Investigator: Jason T. Harris, harrjas@isu.edu.