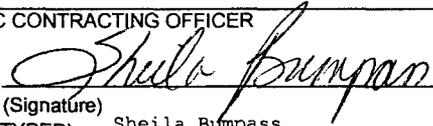


**U.S. NUCLEAR REGULATORY COMMISSION
NOTICE OF GRANT/ASSISTANCE AWARD**

1. GRANT/AGREEMENT NO. NRC-27-10-1121	2. MODIFICATION NO. 	3. PERIOD OF PERFORMANCE FROM: 09/30/10 TO: 9/30/2015	4. AUTHORITY Pursuant to Section 31b and 141b of the Atomic Energy Act of 1954, as amended
5. TYPE OF AWARD <input checked="" type="checkbox"/> GRANT <input type="checkbox"/> COOPERATIVE AGREEMENT	6. ORGANIZATION TYPE Hispanic Serving Institution DUNS - 039674494	7. RECIPIENT NAME, ADDRESS, and EMAIL ADDRESS UNIVERSITY OF HOUSTON SYSTEM UNIVERSITY OF HOUSTON-DOWNTOWN 1 MAIN ST HOUSTON TX 770021014	
8. PROJECT TITLE: University of Houston - Downtown Increasing Underrepresented in the Nuclear Industry			
9. PROJECT WILL BE CONDUCTED PER GOVERNMENT'S/RECIPIENT'S PROPOSAL(S) DATED See Program Descript AND APPENDIX A-PROJECT GRANT PROVISIONS	10. TECHNICAL REPORTS ARE REQUIRED <input checked="" type="checkbox"/> PROGRESS AND FINAL <input type="checkbox"/> FINAL ONLY <input type="checkbox"/> OTHER (Conference Proceedings)	11. PRINCIPAL INVESTIGATOR(S) NAME, ADDRESS and EMAIL ADDRESS Dr. Mary Jo Parker University Of Houston - Downtown One Main St. Houston TX 77002 parkerm@uhd.edu	
12. NRC PROGRAM OFFICE (NAME and ADDRESS) U.S. Nuclear Regulatory Commission Office of Human Resources ATTN: Tuwanda Smith, 301-415-7394 Mail Stop: O3-H8 Washington DC 20555 tuwanda.smith@nrc.gov	13. ACCOUNTING and APPROPRIATION DATA APPN. NO: 31X0200 B&R NO: 07-P-15-5C1-161 JOB CODE: N7316 BOC NO: 4110 OFFICE ID NO: SDB-27-10-1121	14. METHOD OF PAYMENT <input type="checkbox"/> ADVANCE BY TREASURY CHECK <input type="checkbox"/> REIMBURSEMENT BY TREASURY CHECK <input type="checkbox"/> LETTER OF CREDIT <input checked="" type="checkbox"/> OTHER (SPECIFY) Electronic ASAP.gov (See Remarks in Item #20 "Payment Information")	
15. NRC OBLIGATION FUNDS THIS ACTION <u> \$50,000.00 </u> PREVIOUS OBLIGATION <u> 0.00 </u> TOTAL <u> \$50,000.00 </u>	16. TOTAL FUNDING AGREEMENT NRC <u> \$450,000.00 </u> RECIPIENT <u> 0.00 </u> TOTAL <u> \$450,000.00 </u> This action provides funds for Fiscal Year in the amount of <u> See Page 2 </u>		
17. NRC ISSUING OFFICE (NAME, ADDRESS and EMAIL ADDRESS) U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Shashi Malhotra, (301)492-3604 Mail Stop TWB-01-B10M Washington, DC 20555 Shashi.Malhotra@nrc.gov			
18. Acceptance of or objections to the Terms and Conditions of Award must be Emailed to the NRC Issuing Office (Block #17) within three (3) business days following the Award issue date. NRC considers lack of response as acceptance by the grantee of the terms and conditions of award.	19. NRC CONTRACTING OFFICER <div style="text-align: right;">  (Signature) _____ (Date) <u>9/27/2010</u> </div> NAME (TYPED) <u> Sheila Bumpass </u> TITLE <u> Contracting Officer </u> TELEPHONE NO. <u> (301)492-3484 </u>		
20. PAYMENT INFORMATION Payment will be made through the Automated Standard Application for Payment (ASAP.gov) unless the recipient has failed to comply with the program objectives, award conditions, Federal reporting requirements or other conditions specified in 2 CFR 215 (OMB Circular A110).			
21. Attached is a copy of the "NRC General Provisions for Grants and Cooperative Agreements Awarded to Non-Government Recipients. Acceptance of these terms and conditions is acknowledged when Federal funds are used on this project.			
22. ORDER OF PRECEDENCE In the event of a conflict between the recipient's proposal and this award, the terms of the Award shall prevail.			
23. By this award, the Recipient certifies that payment of any audit-related debt will not reduce the level of performance of any Federal Program.			

TEMPLATE - ADM001

SUNSI REVIEW COMPLETE

ADM002

ATTACHMENT A - SCHEDULE

A.1 PURPOSE OF GRANT

The purpose of this Grant is to provide support to the "University of Houston-Downtown Increasing Underrepresented in the Nuclear Industry Program" as described in Attachment B entitled "Program Description."

A.2 PERIOD OF GRANT

1. The effective date of this Grant is September 30, 2010. The estimated completion date of this Grant is September 30, 2015.

2. Funds obligated hereunder are available for program expenditures for the estimated period: September 30, 2010 – September 30, 2015. Continued funding is subject to the availability of additional funds.

A. GENERAL

1. Total Estimated NRC Amount: \$450,000.00
2. Total Obligated Amount: \$50,000.00
3. Cost-Sharing Amount: \$0.00
4. Activity Title: University of Houston-Downtown Increasing Underrepresented in the Nuclear Industry Program
5. NRC Project Officer: Tuwanda Smith, Esq.
6. DUNS No.: 039674494

B. SPECIFIC

RFPA No.: SDB-27-10-1121
FFS: SBC10323
Job Code: N7316
BOC: 4110
B&R Number: 07P-15-5C1-161
Appropriation #: 31X0200
Amount Obligated: \$50,000.00

A.3 BUDGET

Revisions to the budget shall be made in accordance with Revision of Grant Budget in accordance with 2 CFR 215.25.

	Year 1	Year 2	Year 3	Year 4	Year 5
Direct Costs	\$83,257.00	\$83,054.00	\$82,846.00	\$82,631.00	\$82,410.00
Indirect Costs	<u>\$ 6,743.00</u>	<u>\$ 6,946.00</u>	<u>\$ 7,154.00</u>	<u>\$ 7,369.00</u>	<u>\$ 7,590.00</u>
Total	\$90,000.00	\$90,000.00	\$90,000.00	\$90,000.00	\$90,000.00

All travel must be in accordance with the University of Houston-Downtown Travel Regulations or the US Government Travel Policy absent Grantee's travel regulation.

A.4 AMOUNT OF AWARD AND PAYMENT PROCEDURES

1. The total estimated amount of this Award is \$450,000.00 for a five year period.
2. NRC hereby obligates the amount of \$450,000.00 for program expenditures during the period set forth above and in support of the Budget above. The Grantee will be given written notice by the Contracting Officer when additional funds will be added. NRC is not obligated to reimburse the Grantee for the expenditure of amounts in excess of the total obligated amount.
3. Payment shall be made to the Grantee in accordance with procedures set forth in the Automated Standard Application for Payments (ASAP) Procedures set forth below.

Attachment B – Program Description

The University of Houston-Downtown (UHD) in cooperation with Texas A & M University (TAMU) Nuclear Engineering Department, and the University of Texas-Houston Graduate School of Biomedical Sciences (UTH GSBS), propose to establish a post-baccalaureate pipeline program entitled, “**Increasing Underrepresented in the Nuclear Industry (NRC HSI/MSI IUNI)**.” This pipeline’s purpose is to support student success through research and development of relevant curriculum pieces and motivate increased numbers of underrepresented undergraduates to enter graduate studies in nuclear science, nuclear engineering, and nuclear medicine. Increasing this diverse constituency into graduate programs will make a significant impact to the workforce of major energy and medical employers throughout the Greater Houston area, the regional Texas nuclear energy arenas, and the U.S. This program establishes partnerships with 1) major graduate school programs targeting degrees in the nuclear sciences and biomedical-nuclear medicine programs, and 2) with the two nuclear power plants located in Texas. Linking these institutional partners with the successful mentoring and scholarship network the Scholars Academy at UHD provides STEM students and STEM faculty seamless access to creating pipelines and curriculum enhancements leading to increased motivation and knowledge to enter graduate education in the nuclear science arenas.

UHD, established in 1974, provides access to quality higher education at the undergraduate level (and at one of the most affordable tuition rate in Texas). UHD continues to have the **most diverse student population** of any liberal arts university in the Western U.S., according to *U.S. News & World Report*. The motto for UHD is **Excellence-Opportunity-Diversity**. Our new President of UHD is Dr. William V. Flores, who is a recognized national leader for such efforts.

The Greater Houston Metropolitan Area, presently home to more than 4 million people, has experienced one of the largest population increases in the nation during the past decade. As both the energy, chemical, and medical capital of the world, Houston offers excellent career opportunities in industrial chemistry, engineering and biomedical/medical fields. Houston is home to NASA’s Johnson Space Center, a facility that continues to engage UHD students in undergraduate research. UHD is only a 10-minute drive or rail ride from the Texas Medical Center (TMC) which employs more than 70,000 healthcare workers, educators, and researchers and is a longtime research and educational partner with UHD. The premier graduate program for nuclear engineering and nuclear science is located a mere 90 minutes northwest of the UHD at TAMU. With the South Texas Project Nuclear Operating Company (STP NOC) just 1.5 hours southwest of Houston and Comanche Peak Nuclear Power Plant (CP NPP) a mere four hours north of Houston, UHD’s partnership with TAMU nuclear engineering program and UTH GSBS nuclear medicine program, to produce increased numbers of underrepresented post-graduates

prepared to impact nuclear fields of study, works to form a pipeline of success for the nuclear industry and the underrepresented student.

UHD, located in Harris County, and at the northern edge of the central business district of downtown Houston, was ranked by the U.S. Census Bureau as the second fastest growing area in the nation during 1990-1996 (Census Bureau, 1996). Most of this growth has been in Houston's Hispanic population. **Our rapidly expanding Hispanic student body makes UHD one of the main centers of higher education for Hispanics in Texas.** UHD is recognized as a Hispanic Serving Institution (HSI) as well as a Minority Serving Institution (MSI). Ethnic diversity of the 12,500 students enrolled in fall 2009 mirrors the multicultural and multilingual character of the City of Houston: 37% Hispanic; 29% African-American; 22% Caucasian; 10% Asian; and 2% Other. 62% of the UHD students are female. UHD has a full complement of over 40 baccalaureate degrees in the arts, sciences, business, and engineering technology.

The **broader impact** of **NRC HSI/MSI IUNI** will be to encourage, support, and remove barriers for minority students, most of whom will be FTIC, financially needy students, to complete four-year college STEM degrees, and continue post-baccalaureate degree programs of study in the areas of nuclear engineering, nuclear sciences, and biomedical/nuclear medical degrees as a result of this pipeline of encouragement with graduate programs, such as TAMU, UTH GSBS, and Texas nuclear energy plant facilities (Choy, S, 2001; Hira, R., 2007). This pipeline becomes effective and successful because of undergraduate scholarship support, mentoring support, and summer research, seminars, and internship partnerships with named graduate school partners.

Scholars Academy (SA) is an academically competitive program in UHD's CST that promotes scholarship and student success for undergraduates majoring in science, technology, engineering, and mathematics (**STEM**). Its **mission** is to increase the number of academically competent students graduating in STEM. Given UHD's demographics, SA has made a significant impact on increasing numbers of traditionally underrepresented minorities and women baccalaureates in STEM and transitioning them into graduate school. SA has established a five-point STEM model yielding not only student success, but also a template for replication. The five-point model includes: Point 1: Scholarship Support - Barriers to underrepresented project participants are eliminated through academic scholarships. Academic scholarship support ranges from \$4000 to \$5000 per year with stipulations ; Point2: Mentoring - Assignment of SA students to faculty mentor and peer mentor groups. Through these groups STEM students will received advisement for course selection and major declaration (occurs within the first semester), mandatory networking sessions, feedback on curriculum vitae (CV) development, and sponsored field trips arranged by the faculty mentor to broaden the landscape of STEM career/research possibilities. Mentoring support encourages and supports SA members maintenance of those academic standards associated with the SA and associated with increased persistence/retention and graduation rates. The mentoring and peer mentoring activities will last the whole 2 years SA program; Pre-Start week-long orientation session for entering SA students and parents (early August), a core College Success Program (CSP) course for freshmen and transfer students, and tuition scholarship support Point 3: Seminar/Field trips -STEM seminars/field trips by faculty mentors or guest faculty (provided as a mechanism to further broaden and/or provide detailed understanding of STEM career/research possibilities; intervention series per semester presented by faculty mentors; Point 4: Graduate School Preparation - Exposure and preparation for graduate school entrance following baccalaureate graduation through 1) Graduate School and Internship Fair, 2) GRE Prep course as elective credit, and 3) free practice test arranged through Kaplan (GRE, MCAT, DAT, all other graduate entrance exams) each semester, and has been giving these workshops for over

15 years to undergraduates and other interested parties. Topics including: the admissions process, advice on choosing the right graduate school for you, what to include in your personal statement, tips on increasing your interview skills will be included. Students that participate fully in these workshops on average increase their combined Verbal and Quantitative GRE scores by 250 points; and Point 5: Scholarly Research Scholarly research opportunities by PhD faculty-mentored research occurs on-site and off-site in NSF-funded labs, followed by sponsored research in competitive, state and national research programs across the U.S., and support for professional conference dissemination of research findings, and possibly co-authorships of published research.

SA currently has 150 members. Within the UHD College of Sciences and Technology (CST), SA begins its eleventh year with over 360+ alumni members. With an SA retention and graduation rate of first time in college (FTIC) students of 67% and 47%, respectively, SA/UHD continues to produce research-minded, diverse STEM graduates as calculated by Texas Higher Education Coordinating Board formulas) (THECB, 2010). The first class established the benchmarks from which future success arose. From a start of 40% minority and 45% female, membership has increased by a multiple of 14 to yield 81% minority and 53% female enrollment in STEM during this period. Currently, SA accounts for an 82% level of first generation students. More profound is the impact the SA has on student graduates, long after completion of their baccalaureate degrees. With a 51% medical school acceptance rate, SA members continue to pursue post-baccalaureate degrees. Over 34% of all SA members continue on to graduate school in pursuit of graduate or professional programs; whereas over 48% of SA graduates continue to work in STEM areas, after having completed their undergraduate degree. Also, over 75% of all SA graduates either work in STEM areas or have continued on to pursue post-baccalaureate degrees upon completing their undergraduate STEM studies. SA has a proven record of recruitment, retention, completion and entrance of females and other underrepresented minorities into graduate or professional levels of education.

Texas A & M University Nuclear Engineering Department offers the largest nuclear engineering program in the U.S. With a current overall student enrollment of over 250 undergraduate and over 100 graduate students and a faculty of 21, the program is ranked second in 2009, nationally, in graduate studies among public universities. Student composition within the nuclear engineering department is comprised of 81% male and 19% female, and of those, 26% are underrepresented minorities. Graduate degrees offered include: 1) Master of Science in nuclear engineering, 2) Master of Engineering, 3) Master of Science with Nonproliferation Option, 4) Master of Science or Master of Engineering with Nuclear Materials Option, 5) Ph.D. degree plans, 6) Master of Science in Health Physics (HLP), and 7) Ph.D. degree plan in HLP. Research facilities include two research reactors, a fuel cycle and materials laboratory, and seven accelerators (including a microbeam device for determining the response to ionizing radiation on a cell-by-cell basis) (TAMU Nuclear Engineering, 2010).

Other Collaborative Partners: The University of Texas-Houston Graduate School of Biomedical Sciences (UTH GSBS) is the graduate program for both the University of Texas M.D. Anderson Cancer Center and the University of Texas Health Science Center. A number of our faculty conduct research in areas related to biophysics, radiation biology, nuclear medicine, and medical physics. These range from mathematical/statistical modeling to altered molecular structure/function to cellular/tissue response to radiation, to development of therapy. Further, our Program in Medical Physics (PMP) combines principles of physics and engineering with those of biology and medicine for diagnosis and treatment of human disease while ensuring the safety of the public, the patients, and the health care providers. South Texas Project Nuclear Operating Company (STP NOC) is an industry leader, as an electric generating station. As one

of the newest, largest nuclear power facilities in the nation, STP NOC produces electricity to two million Texas homes (STP NOC, 2004). Comanche Peak Nuclear Power Plant will also join in.

B.1. Aims and Objectives for NRC HSI/MSI IUNI:

With an increasing labor force expected to mirror the growing Hispanic population in the U.S., the labor force is expected to change in composition across demographic groups (BLS, 2007). Changing workforce demographics demand that the underrepresented be brought into the undergraduate and graduate educational pipeline to address growing needs in STEM areas across nuclear sciences and medicine arenas. The current STEM talent pool does not fully represent the American labor force. Several factors should be considered in addressing this imbalance including: 1) the need for increased federal research funding, 2) increased scholarships, 3) improved participation rates of women/underrepresented minorities, and 4) easier access to STEM careers by non-traditional students or re-entry by former workers (CPST, 2007; Hira, 2007). Of special importance in addressing the increased need of Hispanics, and other underrepresented, in the STEM labor force, during the college years, is the need for scholarship support as a component of college completion. Also, the need to use a mentored system which encourages the feel of a small family unit, familiarity among students/faculty, and a network promoting sustained interactions among students and faculty (Santiago, 2007). **NRC HSI/MSI IUNI** establishes a pipeline system of support through mentored research experiences, seminar learning experiences, scholarship support and enhanced curriculum pieces targeting increased underrepresented STEM undergraduates completing the baccalaureate degree and continuing to post-baccalaureate education.

B.1.1. Aims

The well-defined and focused project aims include: 1) Increase the number of underrepresented STEM students entering graduate programs in nuclear sciences, nuclear engineering, and nuclear medicine through establishment of pipeline partnerships and enhanced curriculum developed with graduate program input, 2) Institution of scholarship, mentorship, and research opportunities creating a network of support for underrepresented STEM students, while also encouraging graduate degrees in the nuclear engineering sciences after baccalaureate graduation through partnered, mentored activities, and 3) Developing enhanced course materials focused on eventual development of a course sustaining underrepresented STEM students entering graduate level nuclear sciences initiated through establishment of industry partnerships, field trips, summer and academic research opportunities, and seminar series.

Objective 1: Utilize the successful Scholars Academy program activities to increase exposure and understanding of nuclear sciences, nuclear engineering, and nuclear medicine graduate fields and programs : The successful STEM student support activities conducted and initiated by the SA will be utilized, including: 1) Student/Faculty Peer Mentoring Teams established by UHD; 2) SA orientations conducted at the beginning of each academic semester; 3) Seminars/fieldtrips focusing on nuclear sciences, nuclear engineering, nuclear medicine, and STEM-related careers with partners, 5) STEM tutoring services offered to all STEM majors; 6) Undergraduate summer research experiences on-site, internationally, and off- site with project partners; 7) Freshmen undergraduate students will be required to attend a one-week College START Program at UHD, involving UHD student/faculty mentors, SA personnel, and partnership organizations; 8) A parent/student information and dinner colloquium will precede the College START Program, involving an orientation to undergraduate education and the SA program; 9)

The UHD SA Graduate School & Internship Fair (GSIF) provides a venue for industry and graduate schools to recruit STEM majors and from which all named grant partners will participate; 10) The UHD Student Research Conference (SRC) will showcase over 100 student research posters, where project participants will be required to participate annually; and 11) GRE Prep Course to prepare students for graduate programs. This program specifically target competencies needed by STEM undergraduate mastery of graduate school entrance exams.

Objective 2: Establish a STEM Bridge Recruitment Program with feeder high schools and community colleges: Establish a close cooperative academic relationship, with Houston area high schools/community colleges with high minority populations. Active year-round recruitment by the SA program for the project will be established. Recruitment materials, offsite visits, and invitations to attend the SA GSIF and SRC on campus will be scheduled. SA/UHD will hold open house onsite events targeting these bridges.

Objective 3: Establish Research Opportunities and Stipends Supporting Pipeline to Graduate Nuclear Engineering/Nuclear Medicine Programs: Undergraduate research experiences significantly motivate students to remain in STEM careers and provide the confidence and skills necessary for successful entrance into advanced degrees and/or the job market; thus, year-round research provided through the project at UHD and through graduate school and industry partners. Undergraduates will be mentored by experienced PhD STEM faculty members. Research stipends provide financial support, rather than the participants working part-time jobs off-campus in unrelated STEM areas. The stipends will be staggered based on research experience. Similar graduate level summer research mentoring will be initiated with TAMU graduate level nuclear sciences/nuclear engineering and UTHSC GSBS nuclear medicine summer research opportunities.

Objective 4: Provide Scholarship Assistance to STEM Undergraduates Supporting Retention, Persistence, and Graduation Success:

Barriers to underrepresented project participants are eliminated through academic scholarships. Support extends to conference registrations, travel costs to attend/present at local/national scientific conferences, and summer onsite, offsite, and international research opportunities. To be eligible, project participants must be approved for admissions to UHD and accepted by the SA application faculty review committee. Academic scholarships of \$4,000 per year would require a minimum 12-hour college course load, as well as being a U.S. citizen or permanent resident, and maintain good academic standing in the SA.

Objective 5: Establish STEM Career Seminar Series/Field trip Experiences focused on Nuclear Engineering/Nuclear Medicine Graduate Programs and the Nuclear Industry Partners:

SA will establish summer internships/research, a nuclear sciences seminar series of at least 8 series per year focusing on topics such as: nuclear safety, security involving environmental protection, careers, leadership within nuclear science arenas, various research initiatives in the areas of nuclear sciences, graduate admissions information sessions, and others as developed by project partners. Fieldtrips giving first-hand exposure and knowledge of graduate level possibilities and careers in nuclear sciences will be scheduled. Both seminars and field trips work to enlighten, motivate, and encourage participants to enter study in nuclear sciences.

Objective 6: Establish Summer Curriculum Enhancement with Partner Laboratories/Facilities Leading to Course Development: Co-PIs will work with all partners to create an enhanced curriculum piece for STEM courses they teach. Support from other pending NRC grants will allow development of a dedicated course. Course enhancements can relate to hardware /software reliability, common-mode failures, and implications for reactor

control systems.

B.2. Methodology

Recruitment begins with the entire UHD campus, the CST college and all bridge feeder systems. SA student scholars are excellent recruiters in attracting high caliber students into **NRC HSI/MSI IUNI** program. Thus, these students will be included in recruitment efforts at area high schools and community colleges, such as Lone Star College System, Houston Community College System, and San Jacinto College System. UHD, the SA, and HUNSTEM websites provide an internet recruitment presence. Print media, such as posters, flyers, and brochures, explain the nature of the project. Also, during annual fall and spring UHD Career Days, UHD Admission initiatives, and SA K-20 Educational and Industry/Business Council meetings, special recruitment announcements will be extended to recruitment targets. High school Principals, counselors, and community college department chairs and deans will receive electronic versions of all print materials promoting UHD, SA, and the project (see Objective 2).

Following admissions to UHD, all project participants must apply and be accepted to the SA. The selection process involves interested students filling out an application for entry into the SA. The criteria will be: 1) Acceptance into UHD, if new or transfer student, 2) A cumulative GPA of 3.0 in High School or at UHD if already enrolled, 3) A declared STEM major, 4) A one-page essay describing their interest in STEM and commitment to fulfilling the terms of the program, 5) Two letters of recommendation from high school math/science teachers or faculty members from their community college or UHD STEM faculty member, and 6) Review by the SA Faculty Review Committee. Application materials will be maintained online at the SA website.

Removal of barriers to underrepresented STEM participant success is crucial. This support comes in the form of academic scholarships and summer research stipends, foundational to retention and graduation as undergraduates, and allowing preparation and entrance into graduate programs in the nuclear sciences, nuclear engineering, nuclear medicine, and STEM careers (see Objective 4).

Every **NRC HSI/MSI IUNI** participant receives undergraduate enrichment and mentored support through the SA program. This enrichment occurs throughout the full undergraduate experience, thereby supporting increased retention, motivation, career development, and culture-building activities, all culminating in increased graduation rates, and increases in post-baccalaureate entry to graduate school/professional schools associated with partner institutions (see Objective 1). A special course, core to the development of community and undergraduate knowledge, is offered through the SA, entitled College Success Program (CSP) course. The SA Director teaches this course each semester. Entering freshmen and transfer students gain study and leadership skills from the course. Also, mentoring is foundational to the project.

A major component supporting successful mentored research opportunities, as part of the project, is established through Objectives 3 and 6. Opportunities for research thrive through: 1) on-site UHD Co-PIs working in chemistry/nuclear science relevant research, 2) on-site UHD Co-PI leading collaborative international research opportunities in the area of thermal properties of hydrocarbon bearing rocks, 3) on-site UHD Co-PI research in the area of health industrial chemistry and health physics, and 4) off-site partner TAMU/USRG-led summer research on nuclear energy topics create a pipeline from undergraduate to graduate program to industry level research opportunities for the project participants.

Undergraduate seminars and field trips will be conducted through the partnerships of the project and focused on topics and facilities presented by project partners (see Objective 5). Topics which directly impact and influence participants into the pipeline to graduate level nuclear science, engineering, and medicine degree programs create the basis of all seminar series and field trips.

All facets of support and scholarship yielding student retention and graduation will be tracked by the SA Director (UHD PI) and Program Manager (UHD Senior Personnel).

B.3. Plan of Operation

The **NRC HSI/MSI IUNI** project anticipates a Oct. 1, 2010 start date. Planning and coordination begins immediately upon notification, and in part, during the proposal process. Because creating a pipeline between SA/UHD and TAMU forms a critical product of the project, one PI is needed, acting as the leader and responsible party for the project at each end of the undergraduate-to-graduate pipeline. UHD PI will coordinate all institutional-partnership communications and activities. All grant reports will be the responsibility of the UHD PI. SA Program manager will assist in preparation of all financial reports. UHD PI will initiate conference calls and email to support development of the enhanced curriculum piece by all project Co-PIs and partners.

B.3.1. SA/UHD Roles and Responsibilities: SA/UHD will plan, coordinate and implement all undergraduate recruitment, coordinate scholarships through UHD Financial Aid office, and interface with all project partners to establish field trips/seminars/research schedules and opportunities annually (see Objectives 1-6). Timelines and applications will also be established.

Evaluation of the project is critical. Evaluation occurs through monitoring progress each semester. Evaluation is the primary role of the UHD PI. UHD PI and Program Manager monitor all academic progress to ensure a full-time status is maintained, grade point averages satisfy SA requirements, co-curricular support activities are satisfied, research activities are undertaken, and progress toward on-time graduation occurs for all participants. SA Program manager is responsible for maintaining tracking data, by establishing pre-post semester online survey, and maintaining Access tracking system for program evaluation, effectiveness, and longitudinal THECB data on graduate school admissions. UHD PI is responsible for data reports for expected products and results. Pre-post summer research experience surveys will be administered by UHD PI and Program Manager. If academic progress falters, meetings with PI, Program Manager, and mentor faculty will ensue, thereby establishing a plan for return to academic progress (such as mandatory tutoring/ summer coursework).

UHD Co-PIs will lead summer research activities on-site and through coordinated efforts with TAMU PI. Recruitment activities will be led by Program Manager, who will disseminate all announcements of recruitment events, seminars, fieldtrips, and other support activities information. UHD PI, Co-PIs and Program manager develop in-house summer research programs targeting project participants. SA Director and Program manager oversee recruitment all summer research opportunities. International research opportunities in Poland will be established by UHD Co-PIs explicitly for the project. The project expects to support annual summer research projects with all named partners. SA GSIF and SRC will include all **NRC HSI/MSI IUNI project** partners in presentations.

Project PIs, Co-PIs, and Program Manager will hold an annual one-day meeting in late July to review program evaluation data, examine any modifications which may be needed to ensure academic and program progress of the project. Quarterly reports will be reviewed with TAMU PI and all Co-PIs or Senior Personnel of the project at this time.

B.3.2. TAMU Roles and Responsibilities: TAMU will primarily provide REU and SURP competitive research programs which will be accessed by UHD students through normal competitive applications. One or two summer experiences will be supported through NRC HSI/MSI budget each summer. Arrangements for these experiences will be established by the UHD PI with TAMU Nuclear Health Physics professor, Dr. John Ford.

Dr. Ford will host Co-PIs through arranged field trips, workshops, and tours. At this time, planning time will occur between Co-PIs and Dr. Ford in examining possible curriculum enhancements to current UHD courses, thus better incorporating related nuclear topics. Examples of activities include: 1) tour of the nuclear science center and the reactor research facilities at TAMU, 2) tour of the electron beam sterilization facility and the cyclotron, 3) workshops on radiation detection and use of detection equipment, and 4) nuclear power plant tours and use within research.

UHD PI in arranging TAMU-sponsored seminar topics for the project. Topics can include: applications of medical isotopes, advanced reactor designs, nuclear security and proliferation risks, risk management in the nuclear industry, advanced radiation transport calculations, nuclear fuels and materials analysis, microfluids, and materials analysis, space weather and cosmic rays, and ethics in the nuclear industry. UHD PI will also arrange two planning meetings each summer for Co-PIs and partners supportive of curricular enhancements. Enhancements will be based on industry needs, as relayed by industry partners, and graduate program needs as relayed by TAMU professor/s.

TAMU SURP and REU representatives will be invited to host a table at SA/UHD student events. TAMU NUEN and industry partners will be invited to provide seminar topics during the fall/spring semesters. Speaker presentations could include: the American Nuclear Society, the Institute of Nuclear Materials Management, and Health Physics Society.

B.3.3. Project Partners Roles and Responsibilities. All project partners will participate in the SA/UHD GSIF and SRC events to inform STEM participants of internship and off-site research opportunities in the areas of nuclear sciences, nuclear engineering, and nuclear medicine within their facilities. Seminar presentations, research opportunities, and field trips will be arranged with all partners. Also, all partners will be involved in planning phases of curriculum enhancement development.

B. 4. Timetable

The following annual timetable includes benchmark elements comprising the **NRC HSI/MSI IUNI** project, crucial to support of the undergraduate-to-graduate pipeline of the project, development of curriculum enhancements, and integral to an overview of the project's components of success

Benchmark Activity	Responsible Party	Month	Grant Years	Report
Human Subjects submitted to UHD IRB	UHD PI	Sept.	1	Internal
Recruitment of participants (8-10) annually	SA/UHD	May-July Oct-Jan	1 2 3 4 5	Access db
Development of NRC HSI/MSI IUNI program brochure for recruitment; research application materials	SA/UHD	Sept.-Oct.	1 2 3 4 5	Internal
Planning Seminars/ Fieldtrips schedule determined and finalized	SA/UHD, project partners	Aug	1 2 3 4 5	Internal
SA/UHD Undergrads enter SA; support begins	SA/UHD	Aug, Jan	1 2 3 4 5	Ongoing
Pre-post semester surveys	SA/UHD	Aug, Dec, Jan, May	1 2 3 4 5	Yes
Academic tracking (continuous)	SA/UHD	Aug, Dec, Jan, May	1 2 3 4 5	Yes
Seminar events to include:	SA/UHD/ all project partners	Sept-Nov, Feb-April	1 2 3 4 5	Internal:
Field trips taken to include: TAMU Nuclear	SA/UHD All project partners: TAMU NEUN, UTHSC GSBS, STP NOC, CP NPP	Sept – Nov, Feb-April	1 2 3 4 5	Ongoing
GSIF Event (annual)	SA/UHD onsite; All project partners participating	Oct	1 2 3 4 5	Internal seeking info
Summer Research Application Planning- Aug; Dissemination-Jan; Acceptances-Mar; Research star-June	SA/UHD on-site All project partners participating	Aug, Jan, Mar	1 2 3 4 5	Internal & for reports
Development of Flyers for research opportunities	SA/UHD-on-site TAMU/USRG off-site; industry partners	Dec-Jan	1 2 3 4 5	
Summer Research Application	SA/UHD international	Jan-Mar	1 2 3 4 5	Internal
Summer Research Application	TAMU off-site	Jan-Mar	1 2 3 4 5	Internal
Student Research Conf (annual)	UHD	April	1 2 3 4 5	Internal
Pre-post summer research surveys	SA/UHD	June, Aug	1 2 3 4 5	Yes
Mentored Summer Research occurs	SA/UHD on-site SA/UHD int'l TAMU off-site	June-Aug	1 2 3 4 5	Yes
Co-PIs planning with partners for key initial curricular topics	SA/UHD Co-PIs/ partners	June-Aug	1 2 3 4 5	Yes
Co-PIs implement curricular enhancements; PI assesses by semester	Co-PIs / PI	Aug-Dec. / Jan-May	1 2 3 4 5	Yes
Annual Project team evaluation review meeting	SA/UHD TAMU	July-Aug alternating sites	1 2 3 4 5	Yes
Performance Report	SA/UHD	Jan, July	1 2 3 4 5	Yes
Financial Report	SA/UHD, TAMU NEUN	Mar, June, Sept, Dec	1 2 3 4 5	Yes

Expected Products and/or Results

Increased retention and graduation rates of underrepresented STEM students at the undergraduate level will be accomplished by providing scholarship support, peer and faculty mentoring, seminars, mentored research, and field trip experiences targeting the promotion of nuclear sciences, nuclear engineering, and nuclear medicine as graduate fields of study and future STEM career fields. The project will, over five years, motivate, education, train, and graduate at least 24 undergraduates who will enroll in graduate level programs of nuclear engineering, nuclear sciences, or nuclear medicine, thus establishing a workforce pipeline.

Promotion of and increased representation of underrepresented STEM students exposed to graduate school programs, identified with nuclear engineering and nuclear medicine programs, will increase dramatically because of the **NRC HSI/MSI IUNI** project. Partners will offer targeted recruitment for summer research experiences, at least onsite two field trips per semester (total 4-6 per year) over the life of the grant, a series of two seminars per semester (total 4 per year), and summer research stipends for project participants selected.

Creation of enhanced curriculum pieces at one to two topics per year will be developed, implemented, assessed, and refined within the focus of the Co-PIs. Discussions with appropriate academic unit personnel will be undertaken for creation of a course at the end of the award period. Finally, an NRC curriculum development proposal will be undertaken as part of the curriculum enhancement aspect of the project.

NRC HSI/MSI IUNI expects to increase underrepresented STEM students entering nuclear engineering and nuclear medicine graduate programs minimally by 3% to 4% (4-6 students) annually over the life of the grant.

B.6. Evaluation and Dissemination

In addition to specifications as outlined in the RFP, **NRC HSI/MSI IUNI** will follow all UHD Policies and Procedures as relevant to the undergraduate component and TAMU Policies and Procedures as relevant to graduate program and summer research components and UTH GSBS Policies and Procedures as relevant to graduate program and summer research components, including monthly account verifications using the university's financial PeopleSoft system. Data management complies with the Privacy Act of 1974, the Freedom of Information Act (Public Law 93-579 codified in 5 Uniform Standard Code 552a), and the State of Texas Open Records Act. Performance management of the **NRC HSI/MSI IUNI** data will include many indicators of success (i.e. academic progress and co-curricular activity) gathered and stored for each Academy member. UHD IRB requests and procedures will be strictly maintained and followed. Data results, when disseminated, will be addressed in aggregate state for participants and partners.

Data collection for the project will establish and maintain an Access database, building on existing baseline data from the participant applicants to SA and to Admissions at UHD, and will provide venues for electronic tracking of program indicators. Tracking will include academic standing, retention, and graduation history, median family income levels, education attainment levels. Example data fields tracked of SA members include: contact information; ethnicity; gender; citizenship; parents' education levels; household information (language spoken, size, income level, participation in lunch programs); and prior high school/college records. All SA members have additional data tracked related to student progress and outcomes: cohort tracking; declared major; assigned peer and faculty mentors; scholarships and amounts received; academic progress; conferences attended; posters/papers presented; research; college graduation date; and also planned/actual post-baccalaureate activities. Existing online pre-post survey questionnaires will provide long-term data assessment for program improvement and evaluation purposes for all grant-related activities.

Tracking will also be collected by semester pre-post online surveys (participant and partners), designed to prompt attitude and opinion responses at key intervals in the program administration, pre-program, mid-program, and final program. Pre-post surveys will evaluate summer research experiences, as well. Annual evaluation studies will provide longitudinal information to link the quantitative and qualitative aspects of the project, as well as the ongoing success level of the project. Studies will constitute a narrative bridge between the statistical outcome measurements and the cultural responses to **NRC HSI/MSI IUNI** activities. In this manner, the collaborative program evaluation will be able to track numbers and percentage increases in student diversity as well as to capture a evaluation measurement of collaborative **NRC HSI/MSI IUNI** efforts, from the partner and student beneficiaries' perspective.

Through use of the SA Alumni organization, program graduates will be tracked bi-annually as to graduate/professional school continuation, type of employment/STEM related, employer, contact information update, and future educational plans. UHD Alumni Services Office will also track graduates on a monthly basis, thus both tracking systems will be merged to provide the most up-to-date post-undergraduate tracking system possible. Finally, the Texas Higher Education Coordinating Board (THECB) will be used to track each participant of the **NRC**

HSI/MSI IUNI following UHD graduation and entrance into a graduate program of study. This will allow tracking of every participant that has entered a Texas post-baccalaureate program, thus providing data on those entering the nuclear sciences, nuclear engineering, and/or nuclear medicine graduate programs, as well as effectiveness of the project as a pipeline.

Dissemination efforts will occur through recognized conference presentation submissions of annual program findings, such as American Physical Society (APS), Health Physics Society (HPS), SACNAS, American Nuclear Society (ANS), and the Council on Undergraduate Research (CUR). PI and Co-PIs will lead the submission efforts to professional organizations. Further dissemination will include reports to the SA K-20 and Industry/Business Development Council members, and project participants' submissions to recognized student conferences.

B.7. PROJECT MANAGEMENT AND ORGANIZATIONAL CAPACITY

NRC HSI/MSI IUNI will be housed and managed by the UHD CST SA. Since Fall 1999, the SA has awarded over 2,880 scholarships to STEM students. 335 of these students have graduated from SA thus far, and we estimate 45 graduates this and the following academic years. SA is the only university-level STEM program to receive the prestigious **STAR Award** from the THECN for "an exceptional contribution toward the goals in Closing the Gaps of Higher Education Plan for Texas." The SA was also featured by NSF in the **FY 2008 White House budget request**, which was made public on February 5, 2007 – which is accessible online (www.nsf.gov/about/budget/fy2008/pdf/29_fy2008.pdf).

B.7.1. Applicants Experience

A recent grant success example- UHD and San Jacinto College North (SJCN) in October, 2003 established a five-year \$1,965,000 joint program, "Expanding Pathways to Success in Science at UHD and SJCN (EPSS)," through the National Science Foundation - STEP initiative. A complete description of this recognized program is online (<http://hunstem.uhd.edu/EPSS>). Summary data from this effort is detailed below:

Summary EPSS Student Data for Fall 2003 - Spring 2008

Science majors	320	226 to 356
Receiving EPSS financial support per semester	26	0 to 38
Students participating in undergraduate research: UHD students SJCN	150 20	0-178 0 to 24
Off-campus student research presentations	No projection	61
Students traveled outside of Houston-STEM conf	No projection	110
STEM seminars presented	No projection	92
STEM field trips	No projection	76
STEM majors	No projection	478 to 637
Total Enrollment in Science	4000	3406 to 4135
Major enrollment in upper level science courses: Cellular Biology Organic Chemistry Quantitative Analysis General Biochemistry	No projections	60% 25% 34% 37%
Undergraduates in SA	No projection	120 to 190
SJCN Transfers into Natural Science UHD	66	48
SJCN Transfers graduated from UHD	No projection	9
STEM graduates pursuing advanced degrees	69	69

Attachment C – Standard Terms and Conditions

The Nuclear Regulatory Commission's Standard Terms and Conditions for U.S. Nongovernmental Grantees

Preface

This award is based on the application submitted to, and as approved by, the Nuclear Regulatory Commission (NRC) under the authorization 42 USC 2051(b) pursuant to section 31b and 141b of the Atomic Energy Act of 1954, as amended, and is subject to the terms and conditions incorporated either directly or by reference in the following:

- Grant program legislation and program regulation cited in this Notice of Grant Award.
- Restrictions on the expenditure of Federal funds in appropriation acts, to the extent those restrictions are pertinent to the award.
- Code of Federal Regulations/Regulatory Requirements - 2 CFR 215 Uniform Administrative Requirements For Grants And Agreements With Institutions Of Higher Education, Hospitals, And Other Non-Profit Organizations (OMB Circulars), as applicable.

To assist with finding additional guidance for selected items of cost as required in 2 CFR 220, 2 CFR 225, and 2 CFR 230 these URLs to the Office of Management and Budget Cost Circulars are included for reference:

A-21 (now 2CFR 220):	http://www.whitehouse.gov/omb/circulars/a021/print/a021.html
A-87 (now 2CFR 225):	http://www.whitehouse.gov/omb/circulars/a087/print/a087-all.html
A-122 (now 2 CFR 230)	http://www.whitehouse.gov/omb/circulars/a122/print/a122.html
A-102, SF 424:	http://www.whitehouse.gov/omb/circulars/a102/print/a102.html
Form 990:	http://www.irs.gov/pub/irs-pdf/i990-ez.pdf

Any inconsistency or conflict in terms and conditions specified in the award will be resolved according to the following order of precedence: public laws, regulations, applicable notices published in the Federal Register, Executive Orders (EOs), Office of Management and Budget (OMB) Circulars, the Nuclear Regulatory Commission's (NRC) Mandatory Standard Provisions, special award conditions, and standard award conditions.

By drawing funds from the Automated Standard Application for Payment system (ASAP), the recipient agrees to the terms and conditions of an award.

Certifications and representations. These terms incorporate the certifications and representations required by statute, executive order, or regulation that were submitted with the SF424B application through Grants.gov.

I. Mandatory General Requirements

The order of these requirements does not make one requirement more important than any other requirement.

1. Applicability of 2 CFR Part 215

a. All provisions of 2 CFR Part 215 and all Standard Provisions attached to this grant/cooperative agreement are applicable to the Grantee and to sub-recipients which meet the definition of "Grantee" in Part 215, unless a section specifically excludes a sub-recipient from coverage. The Grantee and any sub-recipients must, in addition to the assurances made as

part of the application, comply and require each of its sub-awardees employed in the completion of the project to comply with Subpart C of 2 CFR 215 Part 180 and include this term in lower-tier (subaward) covered transactions.

b. Grantees must comply with monitoring procedures and audit requirements in accordance with OMB Circular A-133. <

http://www.whitehouse.gov/omb/circulars/a133_compliance/08/08toc.aspx >

2. Award Package

§ 215.41 Grantee responsibilities.

The Grantee is obligated to conduct such project oversight as may be appropriate, to manage the funds with prudence, and to comply with the provisions outlined in 2 CFR 215.41. Within this framework, the Principal Investigator (PI) named on the award face page, Block 11, is responsible for the scientific or technical direction of the project and for preparation of the project performance reports. This award is funded on a cost reimbursement basis not to exceed the amount awarded as indicated on the face page, Block 16., and is subject to a refund of unexpended funds to NRC.

The standards contained in this section do not relieve the Grantee of the contractual responsibilities arising under its contract(s). The Grantee is the responsible authority, without recourse to the NRC, regarding the settlement and satisfaction of all contractual and administrative issues arising out of procurements entered into in support of an award or other agreement. This includes disputes, claims, protests of award, source evaluation or other matters of a contractual nature. Matters concerning violation of statute are to be referred to such Federal, State or local authority as may have proper jurisdiction.

Subgrants

Appendix A to Part 215—Contract Provisions

Sub-recipients, sub-awardees, and contractors have no relationship with NRC under the terms of this grant/cooperative agreement. All required NRC approvals must be directed through the Grantee to NRC. See 2 CFR 215.180 and 215.41.

Nondiscrimination

(This provision is applicable when work under the grant/cooperative agreement is performed in the U.S. or when employees are recruited in the U.S.)

No U.S. citizen or legal resident shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity funded by this award on the basis of race, color, national origin, age, religion, handicap, or sex. The Grantee agrees to comply with the non-discrimination requirements below:

Title VI of the Civil Rights Act of 1964 (42 USC §§ 2000d et seq)

Title IX of the Education Amendments of 1972 (20 USC §§ 1681 et seq)

Section 504 of the Rehabilitation Act of 1973, as amended (29 USC § 794)

The Age Discrimination Act of 1975, as amended (42 USC §§ 6101 et seq)

The Americans with Disabilities Act of 1990 (42 USC §§ 12101 et seq)

Parts II and III of EO 11246 as amended by EO 11375 and 12086.

EO 13166, "Improving Access to Services for Persons with Limited English Proficiency."

Any other applicable non-discrimination law(s).

Generally, Title VII of the Civil Rights Act of 1964, 42 USC § 2000e et seq, provides that it shall be an unlawful employment practice for an employer to discharge any individual or otherwise to discriminate against an individual with respect to compensation, terms, conditions, or privileges of employment because of such individual's race, color, religion, sex, or national origin. However, Title VII, 42 USC § 2000e-1(a), expressly exempts from the prohibition against discrimination on the basis of religion, a religious corporation, association, educational institution, or society with respect to the employment of individuals of a particular religion to perform work connected with the carrying on by such corporation, association, educational institution, or society of its activities.

Modifications/Prior Approval

NRC prior written approval may be required before a Grantee makes certain budget modifications or undertakes particular activities. If NRC approval is required for changes in the grant or cooperative agreement, it must be requested of, and obtained from, the NRC Grants Officer in advance of the change or obligation of funds. All requests for NRC prior approval must be made, in writing (which includes submission by e-mail), to the designated Grants Specialist and Program Office no later than 30 days before the proposed change. The request must be signed by both the PI and the authorized organizational official. Failure to obtain prior approval, when required, from the NRC Grants Officer may result in the disallowance of costs, termination of the award, or other enforcement action within NRC's authority.

Lobbying Restrictions

The Grantee will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

The Grantee shall comply with provisions of 31 USC § 1352. This provision generally prohibits the use of Federal funds for lobbying in the Executive or Legislative Branches of the Federal Government in connection with the award, and requires disclosure of the use of non-Federal funds for lobbying.

The Grantee receiving in excess of \$100,000 in Federal funding shall submit a completed Standard Form (SF) LLL, "Disclosure of Lobbying Activities," regarding the use of non-Federal funds for lobbying within 30 days following the end of the calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed. The Grantee must submit the SF-LLL, including those received from sub-recipients, contractors, and subcontractors, to the Grants Officer.

§ 215.13 Debarment And Suspension.

The Grantee agrees to notify the Grants Officer immediately upon learning that it or any of its principals:

- (1) Are presently excluded or disqualified from covered transactions by any Federal department or agency;
- (2) Have been convicted within the preceding three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State

antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, receiving stolen property, making false claims, or obstruction of justice; commission of any other offense indicating a lack of business integrity or business honesty that seriously and directly affects your present responsibility;

(3) Are presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b); and

(4) Have had one or more public transactions (Federal, State, or local) terminated for cause or default within the preceding three years.

b. The Grantee agrees that, unless authorized by the Grants Officer, it will not knowingly enter into any subgrant or contracts under this grant/cooperative agreement with a person or entity that is included on the Excluded Parties List System (<http://epls.arnet.gov>).

The Grantee further agrees to include the following provision in any subgrant or contracts entered into under this award:

'Debarment, Suspension, Ineligibility, and Voluntary Exclusion

The Grantee certifies that neither it nor its principals is presently excluded or disqualified from participation in this transaction by any Federal department or agency. The policies and procedures applicable to debarment, suspension, and ineligibility under NRC-financed transactions are set forth in 2 CFR Part 180.'

Drug-Free Workplace

The Grantee must be in compliance with The Federal Drug Free Workplace Act of 1988. The policies and procedures applicable to violations of these requirements are set forth in 41 USC 702.

Implementation of E.O. 13224 -- Executive Order On Terrorist Financing

The Grantee is reminded that U.S. Executive Orders and U.S. law prohibits transactions with, and the provision of resources and support to, individuals and organizations associated with terrorism. It is the legal responsibility of the Grantee to ensure compliance with these Executive Orders and laws. This provision must be included in all contracts/sub-awards issued under this grant/cooperative agreement.

Award Grantees must comply with Executive Order 13224, Blocking Property and Prohibiting Transactions with Persons who Commit, Threaten to Commit, or Support Terrorism. Information about this Executive Order can be found at: www.fas.org/irp/offdocs/eo/eo-13224.htm.

Procurement Standards. § 215.40

Sections 215.41 through 215.48 set forth standards for use by Grantees in establishing procedures for the procurement of supplies and other expendable property, equipment, real property and other services with Federal funds. These standards are furnished to ensure that such materials and services are obtained in an effective manner and in compliance with the provisions of applicable Federal statutes and executive orders. No additional procurement standards or requirements shall be imposed by the Federal awarding agencies upon Grantees, unless specifically required by Federal statute or executive order or approved by OMB.

Travel

Travel is an appropriate charge to this award and prior authorization for specific trips are not required, as long as the trip is identified in the Grantee's original program description and original budget. All other travel, domestic or international, must not increase the total estimated award amount. Trips that have not been identified in the approved budget require the written prior approval of the Grants Officer.

Travel will be in accordance with the US Government Travel Regulations at: www.gsa.gov/federaltravelregulation and the per diem rates set forth at: www.gsa.gov/perdiem.

Travel costs to the grant must be consistent with provisions as established in Appendix A to 2 CFR 220 (J.53)

Property Management Standards

Property standards of this award shall follow provisions as established in 2 CFR 215.30.

Equipment procedures shall follow provision established in 2 CFR 215.34.

Procurement Standards

Procurement standards of this award shall follow provisions as established in 2 CFR 215.40.

Intangible and Intellectual Property

Intangible and intellectual property of this award shall generally follow provisions established in 2 CFR 215.36.

Inventions Report - The Bayh-Dole Act (P.L. 96-517) affords Grantees the right to elect title and retain ownership to inventions they develop with funding under an NRC grant award ("subject inventions"). In accepting an award, the Grantee agrees to comply with applicable NRC policies, the Bayh-Dole Act, and its Government-wide implementing regulations found at Title 37, Code of Federal Regulations (CFR) Part 401. A significant part of the regulations require that the Grantee report all subject inventions to the awarding agency (NRC) as well as include an acknowledgement of federal support in any patents. NRC participates in the trans-government Interagency Edison system (<http://www.iedison.gov>) and expects NRC funding Grantees to use this system to comply with Bayh-Dole and related intellectual property reporting requirements. The system allows for Grantees to submit reports electronically via the Internet. In addition, the invention must be reported in continuation applications (competing or non-competing).

Patent Notification Procedures- Pursuant to EO 12889, NRC is required to notify the owner of any valid patent covering technology whenever the NRC or its financial assistance Grantees, without making a patent search, knows (or has demonstrable reasonable grounds to know) that technology covered by a valid United States patent has been or will be used without a license from the owner. To ensure proper notification, if the Grantee uses or has used patented technology under this award without license or permission from the owner, the Grantee must notify the Grants Officer. This notice does not necessarily mean that the Government authorizes and consents to any copyright or patent infringement occurring under the financial assistance.

Data, Databases, and Software - The rights to any work produced or purchased under a NRC federal financial assistance award are determined by 2 CFR 215.36. Such works may include

data, databases or software. The Grantee owns any work produced or purchased under a NRC federal financial assistance award subject to NRC's right to obtain, reproduce, publish or otherwise use the work or authorize others to receive, reproduce, publish or otherwise use the data for Government purposes.

Copyright - The Grantee may copyright any work produced under a NRC federal financial assistance award subject to NRC's royalty-free nonexclusive and irrevocable right to reproduce, publish or otherwise use the work or authorize others to do so for Government purposes. Works jointly authored by NRC and Grantee employees may be copyrighted but only the part authored by the Grantee is protected because, under 17 USC § 105, works produced by Government employees are not copyrightable in the United States. On occasion, NRC may ask the Grantee to transfer to NRC its copyright in a particular work when NRC is undertaking the primary dissemination of the work. Ownership of copyright by the Government through assignment is permitted under 17 USC § 105.

Records retention and access requirements for records of the Grantee shall follow established provisions in 2 CFR 215.53.

Organizational Prior Approval System

In order to carry out its responsibilities for monitoring project performance and for adhering to award terms and conditions, each Grantee organization shall have a system to ensure that appropriate authorized officials provide necessary organizational reviews and approvals in advance of any action that would result in either the performance or modification of an NRC supported activity where prior approvals are required, including the obligation or expenditure of funds where the governing cost principles either prescribe conditions or require approvals.

The Grantee shall designate an appropriate official or officials to review and approve the actions requiring NRC prior approval. Preferably, the authorized official(s) should be the same official(s) who sign(s) or countersign(s) those types of requests that require prior approval by NRC. The authorized organization official(s) shall not be the principal investigator or any official having direct responsibility for the actual conduct of the project, or a subordinate of such individual.

Conflict Of Interest Standards of this award shall follow provisions as established in 2 CFR 215.42 Codes of Conduct.

Dispute Review Procedures

a. Any request for review of a notice of termination or other adverse decision should be addressed to the Grants Officer. It must be postmarked or transmitted electronically no later than 30 days after the postmarked date of such termination or adverse decision from the Grants Officer.

b. The request for review must contain a full statement of the Grantee's position and the pertinent facts and reasons in support of such position.

c. The Grants Officer will promptly acknowledge receipt of the request for review and shall forward it to the Director, Office of Administration, who shall appoint a review committee consisting of a minimum of three persons.

d. Pending resolution of the request for review, the NRC may withhold or defer payments under the award during the review proceedings.

e. The review committee will request the Grants Officer who issued the notice of termination or adverse action to provide copies of all relevant background materials and documents. The committee may, at its discretion, invite representatives of the Grantee and the NRC program office to discuss pertinent issues and to submit such additional information as it deems appropriate. The chairman of the review committee will insure that all review activities or proceedings are adequately documented.

f. Based on its review, the committee will prepare its recommendation to the Director, Office of Administration, who will advise the parties concerned of his/her decision.

Termination and Enforcement. Termination of this award by default or by mutual consent shall follow provisions as established in 2 CFR 215.60.

Monitoring and Reporting § 215.51

a. Grantee Financial Management systems must comply with the established provisions in 2 CFR 215.21

- Payment – 2 CFR 215.22
- Cost Share – 2 CFR 215.23
- Program Income – 2 CFR 215.24
 - Earned program income, if any, shall be added to funds committed to the project by the NRC and Grantee and used to further eligible project or program objectives.
- Budget Revision – 2 CFR 215.25
 - In accordance with 2 CFR 215.25(e), the NRC waives the prior approval requirement for items identified in sub-part (e)(1-4).
 - The Grantee is not authorized to rebudget between direct costs and indirect costs without written approval of the Grants Officer.
 - Allowable Costs – 2 CFR 215.27

b. Federal Financial Reports

Effective October 1, 2008, NRC transitioned from the SF-269, SF-269A, SF-272, and SF-272A to the Federal Financial Report (SF-425) as required by OMB:

http://www.whitehouse.gov/omb/fedreg/2008/081308_ffr.pdf

http://www.whitehouse.gov/omb/grants/standard_forms/ffr.pdf

http://www.whitehouse.gov/omb/grants/standard_forms/ffr_instructions.pdf

The Grantee shall submit a "Federal Financial Report" (SF-425) on a quarterly basis for the periods ending 3/31, 6/30, 9/30, and 12/31 or any portion thereof, unless otherwise specified in a special award condition. Reports are due no later than 30 days following the end of each reporting period. A final SF-425 shall be submitted within 90 days after expiration of the award.

Period of Availability of Funds 2 CFR § 215.28

a. Where a funding period is specified, a Grantee may charge to the grant only allowable costs resulting from obligations incurred during the funding period and any pre-award costs authorized by the NRC.

b. Unless otherwise authorized in 2 CFR 215.25(e)(2) or a special award condition, any extension of the award period can only be authorized by the Grants Officer in writing. Verbal or written assurances of funding from other than the Grants Officer shall not constitute authority to obligate funds for programmatic activities beyond the expiration date.

c. The NRC has no obligation to provide any additional prospective or incremental funding. Any modification of the award to increase funding and to extend the period of performance is at the sole discretion of the NRC.

d. Requests for extensions to the period of performance shall be sent to the Grants Officer at least 30 days prior to the grant/cooperative agreement expiration date. Any request for extension after the expiration date shall not be honored.

Automated Standard Application For Payments (ASAP) Procedures

Unless otherwise provided for in the award document, payments under this award will be made using the Department of Treasury's Automated Standard Application for Payment (ASAP) system < <http://www.fms.treas.gov/asap/> >. Under the ASAP system, payments are made through preauthorized electronic funds transfers, in accordance with the requirements of the Debt Collection Improvement Act of 1996. In order to receive payments under ASAP, Grantees are required to enroll with the Department of Treasury, Financial Management Service, and Regional Financial Centers, which allows them to use the on-line method of withdrawing funds from their ASAP established accounts. The following information will be required to make withdrawals under ASAP: (1) ASAP account number – the award number found on the cover sheet of the award; (2) Agency Location Code (ALC) – 31000001; and Region Code. Grantees enrolled in the ASAP system do not need to submit a "Request for Advance or Reimbursement" (SF-270), for payments relating to their award.

Audit Requirements

Organization-wide or program-specific audits shall be performed in accordance with the Single Audit Act Amendments of 1996, as implemented by OMB Circular A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

<http://www.whitehouse.gov/omb/circulars/a133/a133.html> Grantees are subject to the provisions of OMB Circular A-133 if they expend \$500,000 or more in a year in Federal awards.

The Form SF-SAC and the Single Audit Reporting packages for fiscal periods ending on or after January 1, 2008 must be submitted online.

1. Create your online report ID at <http://harvester.census.gov/fac/collect/ddeindex.html>
2. Complete the Form SF-SAC
3. Upload the Single Audit
4. Certify the Submission
5. Click "Submit."

Organizations expending less than \$500,000 a year are not required to have an annual audit for that year but must make their grant-related records available to NRC or other designated officials for review or audit.

III. Programmatic Requirements

Performance (Technical) Reports

- a. The Grantee shall submit performance (technical) reports electronically to the NRC Project Officer and Grants Officer as specified in the special award conditions in the same frequency as the Federal Financial Report unless otherwise authorized by the Grants Officer.
- b. Unless otherwise specified in the award provisions, performance (technical) reports shall contain brief information as prescribed in the applicable uniform administrative requirements 2 CFR §215.51 which are incorporated in the award.
- c. The submission for the six month period ending March 31st is due by April 30th. The submission for the six month period ending September 30th is due by October 31st.

Unsatisfactory Performance

Failure to perform the work in accordance with the terms of the award and maintain at least a satisfactory performance rating or equivalent evaluation may result in designation of the Grantee as high risk and assignment of special award conditions or other further action as specified in the standard term and condition entitled "Termination".

Failure to comply with any or all of the provisions of the award may have a negative impact on future funding by NRC and may be considered grounds for any or all of the following actions: establishment of an accounts receivable, withholding of payments under any NRC award, changing the method of payment from advance to reimbursement only, or the imposition of other special award conditions, suspension of any NRC active awards, and termination of any NRC award.

Other Federal Awards With Similar Programmatic Activities

The Grantee shall immediately provide written notification to the NRC Project Officer and the Grants Officer in the event that, subsequent to receipt of the NRC award, other financial assistance is received to support or fund any portion of the program description incorporated into the NRC award. NRC will not pay for costs that are funded by other sources.

Prohibition Against Assignment By The Grantee

The Grantee shall not transfer, pledge, mortgage, or otherwise assign the award, or any interest therein, or any claim arising thereunder, to any party or parties, banks, trust companies, or other financing or financial institutions without the express written approval of the Grants Officer.

Site Visits

The NRC, through authorized representatives, has the right, at all reasonable times, to make site visits to review project accomplishments and management control systems and to provide such technical assistance as may be required. If any site visit is made by the NRC on the premises of the Grantee or contractor under an award, the Grantee shall provide and shall require his/her contractors to provide all reasonable facilities and assistance for the safety and convenience of the Government representative in the performance of their duties. All site visits and evaluations shall be performed in such a manner as will not unduly delay the work.

IV. Miscellaneous Requirements

Criminal and Prohibited Activities

- a. The Program Fraud Civil Remedies Act (31 USC §§ 3801-3812), provides for the imposition of civil penalties against persons who make false, fictitious, or fraudulent claims to the Federal government for money (including money representing grant/cooperative agreements, loans, or other benefits.)
- b. False statements (18 USC § 287), provides that whoever makes or presents any false, fictitious, or fraudulent statements, representations, or claims against the United States shall be subject to imprisonment of not more than five years and shall be subject to a fine in the amount provided by 18 USC § 287.
- c. False Claims Act (31 USC 3729 et seq), provides that suits under this Act can be brought by the government, or a person on behalf of the government, for false claims under federal assistance programs.
- d. Copeland "Anti-Kickback" Act (18 USC § 874), prohibits a person or organization engaged in a federally supported project from enticing an employee working on the project from giving up a part of his compensation under an employment contract.

American-Made Equipment And Products

Grantees are hereby notified that they are encouraged, to the greatest extent practicable, to purchase American-made equipment and products with funding provided under this award.

Increasing Seat Belt Use in the United States

Pursuant to EO 13043, Grantees should encourage employees and contractors to enforce on-the-job seat belt policies and programs when operating company-owned, rented or personally-owned vehicle.

Federal Employee Expenses

Federal agencies are generally barred from accepting funds from a Grantee to pay transportation, travel, or other expenses for any Federal employee unless specifically approved in the terms of the award. Use of award funds (Federal or non-Federal) or the Grantee's provision of in-kind goods or services, for the purposes of transportation, travel, or any other expenses for any Federal employee may raise appropriation augmentation issues. In addition, NRC policy prohibits the acceptance of gifts, including travel payments for Federal employees, from Grantees or applicants regardless of the source.

Minority Serving Institutions (MSIs) Initiative

Pursuant to EOs 13256, 13230, and 13270, NRC is strongly committed to broadening the participation of MSIs in its financial assistance program. NRC's goals include achieving full participation of MSIs in order to advance the development of human potential, strengthen the Nation's capacity to provide high-quality education, and increase opportunities for MSIs to participate in and benefit from Federal financial assistance programs. NRC encourages all applicants and Grantees to include meaningful participations of MSIs. Institutions eligible to be considered MSIs are listed on the Department of Education website:

<http://www.ed.gov/about/offices/list/ocr/edlite-minorityinst.html>

Research Misconduct

Scientific or research misconduct refers to the fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results. It does not include honest errors or differences of opinions. The Grantee organization has the primary

responsibility to investigate allegations and provide reports to the Federal Government. Funds expended on an activity that is determined to be invalid or unreliable because of scientific misconduct may result in a disallowance of costs for which the institution may be liable for repayment to the awarding agency. The Office of Science and Technology Policy at the White House published in the Federal Register on December 6, 2000, a final policy that addressed research misconduct. The policy was developed by the National Science and Technology Council (65 FR 76260). The NRC requires that any allegation be submitted to the Grants Officer, who will also notify the OIG of such allegation. Generally, the Grantee organization shall investigate the allegation and submit its findings to the Grants Officer. The NRC may accept the Grantee's findings or proceed with its own investigation. The Grants Officer shall inform the Grantee of the NRC's final determination.

Publications, Videos, and Acknowledgment of Sponsorship

Publication of the results or findings of a research project in appropriate professional journals and production of video or other media is encouraged as an important method of recording and reporting scientific information. It is also a constructive means to expand access to federally funded research. The Grantee is required to submit a copy to the NRC and when releasing information related to a funded project include a statement that the project or effort undertaken was or is sponsored by the NRC. The Grantee is also responsible for assuring that every publication of material (including Internet sites and videos) based on or developed under an award, except scientific articles or papers appearing in scientific, technical or professional journals, contains the following disclaimer:

“This [report/video] was prepared by [Grantee name] under award [number] from [name of operating unit], Nuclear Regulatory Commission. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the view of the [name of operating unit] or the US Nuclear Regulatory Commission.”