

Grant and Cooperative Agreement

CHOOSE ONE:

- COOPERATIVE AGREEMENT
- GRANT

CHOOSE ONE:

 EDUCATION FACILITIES RESEARCH SDCR TRAINING

1. GRANT/COOPERATIVE AGREEMENT NUMBER NRC-HQ-60-17-G-0028		2. SUPPLEMENT NUMBER		3. EFFECTIVE DATE 06/30/2017		4. COMPLETION DATE	
5. ISSUED TO NAME/ADDRESS OF RECIPIENT (No., Street, City/County, State, Zip) UNIVERSITY OF CALIFORNIA, LOS ANGELES Attn: [REDACTED] 11000 KINROSS AVENUE, SUITE 102 BOX 951406 LOS ANGELES CA 900951406				6. ISSUED BY U.S. NRC - HQ Mailing Address: Acquisition Management Division Mail Stop: TWFN-8E06M Washington DC 20555-0001			
7. TAXPAYER IDENTIFICATION NO. (TIN)				9. PRINCIPAL INVESTIGATOR/ORGANIZATION'S PROJECT OR PROGRAM MGR. (Name & Phone) [REDACTED]			
8. COMMERCIAL & GOVERNMENT ENTITY (CAGE) NO. [REDACTED]							
10. RESEARCH, PROJECT OR PROGRAM TITLE Research and Education Program Towards a Probabilistic Resilience Assessment Model for Nuclear Facilities							
11. PURPOSE See Schedule							
12. PERIOD OF PERFORMANCE (Approximately) 06/30/2017 through 06/29/2020							
13A. AWARD HISTORY				13B. FUNDING HISTORY			
PREVIOUS	\$0.00			PREVIOUS	\$0.00		
THIS ACTION	\$450,000.00			THIS ACTION	\$30,000.00		
CASH SHARE	\$0.00			TOTAL	\$30,000.00		
NON-CASH SHARE	\$0.00						
RECIPIENT SHARE	\$150,000.00						
TOTAL	\$450,000.00						
14. ACCOUNTING AND APPROPRIATION DATA 2017-X0200-IUPNSE-60-60D099-52-S-164-1148-4110							
PURCHASE REQUEST NO.		JOB ORDER NO.		AMOUNT		STATUS	
RES-17-0189							
15. POINTS OF CONTACT							
	NAME		MAIL STOP	TELEPHONE		E-MAIL ADDRESS	
TECHNICAL OFFICER	NANCY V. HEBRON-ISREAL		TWFN10B56	301-415-6996		Nancy.Hebron-Isreal@nrc.gov	
NEGOTIATOR							
ADMINISTRATOR	M'LITA R. CARR			301-415-6869		MLita.Carr@nrc.gov	
PAYMENTS							
16. THIS AWARD IS MADE UNDER THE AUTHORITY OF: Pursuant to Section 31b and 141b of the Atomic Energy Act of 1954, as amended.							
17. APPLICABLE STATEMENT(S), IF CHECKED:				18. APPLICABLE ENCLOSURE(S), IF CHECKED:			
<input type="checkbox"/> NO CHANGE IS MADE TO EXISTING PROVISIONS				<input type="checkbox"/> PROVISIONS <input type="checkbox"/> SPECIAL CONDITIONS			
<input type="checkbox"/> FDP TERMS AND CONDITIONS AND THE AGENCY-SPECIFIC REQUIREMENTS APPLY TO THIS GRANT				<input type="checkbox"/> REQUIRED PUBLICATIONS AND REPORTS			
UNITED STATES OF AMERICA				COOPERATIVE AGREEMENT RECIPIENT			
CONTRACTING/GRANT OFFICER			DATE	AUTHORIZED REPRESENTATIVE			DATE
M'LITA R. CARR [REDACTED]			06/29/2017				

Grant and Cooperative Agreement

ITEM NO. (A)	ITEM OR SERVICE (Include Specifications and Special Instructions) (B)	QUANTITY (C)	UNIT (D)	ESTIMATED COST	
				UNIT PRICE (E)	AMOUNT (F)
	<p>CFDA Number: 77.006</p> <p>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 200.</p> <p>Payment:</p> <p style="padding-left: 40px;">ASAP GRANT FUNDS REIMBURSEMENT SYS US TREASURY</p> <p>Period of Performance: 06/30/2017 to 06/29/2020</p>				

Attachment A - Schedule

A.1 PURPOSE OF GRANT

The purpose of this Grant is to provide support to the "Research and Education Program Towards a Probabilistic Resilience Assessment Model for Nuclear Facilities" as described in Attachment B entitled "Program Description."

A.2 PERIOD OF GRANT

1. The effective date of this Grant is June 30, 2017. The estimated completion date of this Grant is June 29, 2020.
2. Funds obligated hereunder are available for program expenditures for the estimated period: June 30, 2017 – June 29, 2020.

A.3 GENERAL

- | | |
|--------------------------------|---|
| 1. Total Estimated NRC Amount: | \$450,000.00 |
| 2. Total Obligated Amount: | \$30,000.00 |
| 3. Cost-Sharing Amount: | \$150,000.00 |
| 4. Activity Title: | Research and Education Program Towards a Probabilistic Resilience Assessment Model for Nuclear Facilities |
| 5. NRC Project Officer: | Nancy Hebron-Isreal |
| 6. DUNS No.: | 092530369 |

A.4 AMOUNT OF AWARD AND PAYMENT PROCEDURES

1. The total estimated amount of this Award is \$600,000.00 for the three year period; inclusive of \$150,000.00 in cost share.
2. NRC hereby obligates the amount of \$30,000.00 for program expenditures during the period set forth above and in support of the Budget above. 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 Recipient in accordance with procedures set forth in the Automated Standard Application for Payments (ASAP) Procedures set forth below.

A.5 AVAILABILITY OF FUNDS

1. Funding for this award is available through the date specified in Section A.2.2.
2. Additional funding for subsequent periods is optional and contingent upon and subject to the availability of funds as well as satisfactory performance of the most recent performance period.

A.6 BUDGET

Revisions to the grant award budget shall be made in accordance with Revision of Grant Budget in accordance with [2 CFR § 200.308](#).

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET SUMMARY						
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. [REDACTED]	[REDACTED]			[REDACTED]	[REDACTED]	[REDACTED]
2.						[REDACTED]
3.						[REDACTED]
4.						[REDACTED]
5. Totals				[REDACTED]	[REDACTED]	[REDACTED]
SECTION B - BUDGET CATEGORIES						
6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY					Total (5)
	(1) NRC-HQ-60-17-FOA-000 1	(2)	(3)	(4)	(5)	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]						[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	144,999.93	150,397.10	154,602.97		450,000.00
[REDACTED]						[REDACTED]

Standard From 424A (Rev. 7-97)
Prescribed by OMB Circular A-102

ATTACHMENT B - PROJECT DESCRIPTION

1. Proposed Faculty Development Program

Overview

Much has been accomplished in developing tools and methods for performing probabilistic risk assessment (PRA) of nuclear facilities. *PRA* seeks to estimate the frequency of initiating events that cause damage to the nuclear core (Level 1), the release of radioactive material from the power plant (Level 2) and the consequences in terms of negative impacts to the surrounding environments (Level 3) (USNRC, 2014). A similar modeling approach is used in disaster risk modeling where the probabilistic distribution of hazard events (natural and manmade) is convolved with the exposure and vulnerability of physical, social and human infrastructure, to compute the consequences in terms of probable losses (economic, fatalities, degradation of social systems) (FEMA, 2012).

More recently, an emphasis has been placed on quantifying the resilience of communities to disaster events, where resilience can be broadly defined as the ability of different social units (i.e. individuals, households, organizations, communities, regions and nations) to minimize the effect of, adapt to and recover from disruptive events (Global Resilience Partnership, 2014). Whereas, probabilistic risk assessment places an emphasis on quantifying the immediate impacts of hazard events, probabilistic resilience assessment (PReA) seeks to place within a rigorous quantitative framework, those aspects of a socioeconomic system that are responsible for minimizing the long-term disruption of its functionality. These attributes include robustness (the ability to resist the initial impact), rapidity (the ability to recovery functionality in a timely manner), redundancy (the ability to provide multiple processes for maintaining and restoring functionality) and resourcefulness (the ability to put in place the organizational structures that facilitate adaptation) (Bruneau et al. 2003). These aspects of *PReA* are very relevant to the main objectives of *Level 3 PRA*, where, comparatively, much less has been accomplished in quantifying the consequences of radioactive material release. A paradigm shift is needed, whereby a more proactive approach is used to design and assess the performance of nuclear facilities, accounting for the various ways that neighboring communities can minimize the effect of radioactive material release on its overall functionality.

This Faculty Development Program plan will address the previously outlined problem statement by actively supporting the development of [REDACTED] as a teacher-scholar and a leading expert in the area of probabilistic resilience assessment of nuclear facilities and their neighboring communities. Under the guidance of [REDACTED], [REDACTED] at UCLA, [REDACTED] will leverage several industry and academic collaborations to develop complementary research, education and professional engagement programs, with a research focus directed towards extending *Level 3 PRA* to incorporate those attributes of resilience that are relevant to nuclear facilities (Figure 1).

The research program will actively involve undergraduate and graduate students to address fundamental questions related to the ability of communities to minimize the long-term effects of radioactive material release. The findings from this research will serve to advance educational components including new curricula that prepares students and future decision-makers to address complex risk- and resilience-management problems. The program will support the development of an Undergraduate Technical Breadth Area (TBA) and PhD minor field in *Resilience Engineering*. Upon completion, the integrated Faculty Development Program will serve to propel [REDACTED] into an active leadership role in the nuclear risk modeling community and

launch a self-sustaining research and education programs within the and the *Risk Institute*. These goals will be achieved over a three-year period by meeting the following objectives:

1. Formulate a probabilistic resilience modeling framework that rigorously quantifies the ability of neighboring communities to minimize the long-term effects and recover their functionality in the event of radioactive material release.
2. Develop a PhD minor program in *Resilience Engineering* that includes 3 courses: two of which are existing and one that will be developed as part of the program.
3. Establish an Undergraduate Technical Breadth Area in *Resilience Engineering* that includes one existing course plus two new courses that will be developed as part of the Faculty Development Program. Both the PhD minor and Undergraduate *TBA* will become permanent fixtures within the recently established *Risk Institute*.
4. Create a *Resilience Engineering* research program within the *Risk Institute*. The proposed Faculty Development Program will partially support one PhD student within the program and other extramural funding sources will be sought to maintain a funding pool for PhD students.

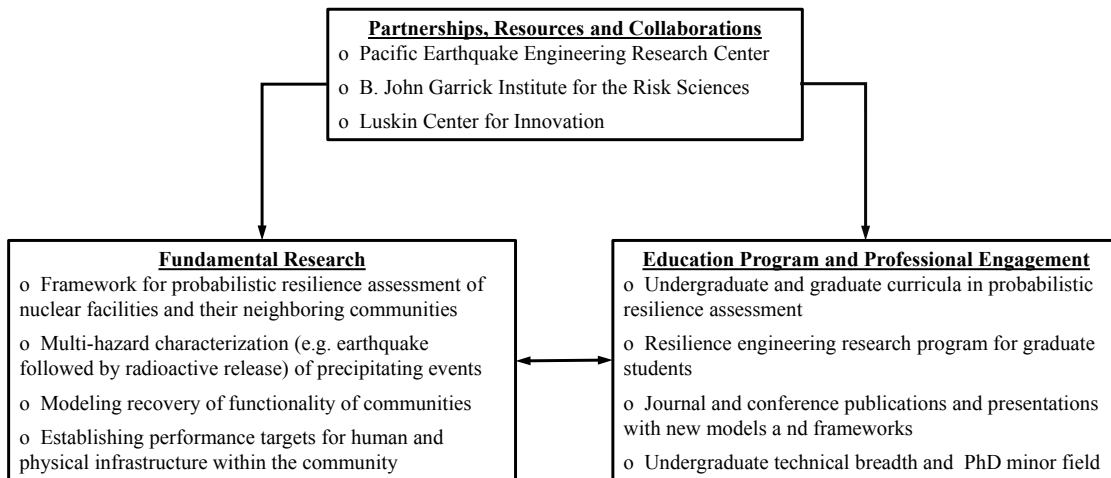


Figure 1. Integrated Research, Education and Professional Engagement Plan
Research Program

The long-term goal of the research program is to contribute to the development of the next generation of *Level 3 PRA* methodology. The focus will be on quantifying the ability of neighboring communities to minimize the long-term effects and recover their functionality in the event of radioactive material release. The vision for this new framework is that it will feature a “resilience-based” approach in which the performance objectives for human, physical and social infrastructure are aligned with specific functionality goals that are defined at the community level. This is in contrast to the current approach which seeks to quantify the consequences of radioactive material release on a community without any consideration given to the social functions that they support.

Figure 2 shows an overview of the hierarchical structure that can be used to develop resilience-based performance objectives for human, social and physical infrastructure within a community. First, a consensus-driven process is carried out to establish a high level resilience objective for the community. This resilience target is used to derive the performance objectives for a set of vital community functions, which refers to goods and services that are critical to the normal functioning of the community. Healthcare, shelter, food and education are examples of vital community functions. After establishing the vital functions and associated performance objectives, their

supporting human, physical and social infrastructure must be defined. The buildings that house the hospital facilities within a community are an example of physical infrastructure and the employees of that facility is an example of the human infrastructure. The water distribution network is an example of a lifeline system that supports the healthcare (and other) vital function. The performance objectives for the human and physical (buildings and lifeline systems) are derived directly from those of the vital community functions.

The community-level resilience objective can be derived from a time-based or scenario-based assessment. A scenario-based assessment is used to evaluate the probable impact on the functionality of a community assuming it is subjected to a specific radioactive release scenario (or set of scenarios) event(s). An example of a scenario-based resilience target would be “less than 10% mean reduction in the functionality of the community following a predefined event”. A time-based assessment evaluates the probable impact over a specific period of time (e.g., 1 year, 50 years, etc.). It incorporates a probabilistic hazard assessment in which a range of extreme events and their occurrence rates are considered. An example of a time-based resilience objective would be “less than 5% probability that the functionality of the community will be reduced by more than 40% at any given time over the next 50 years”.

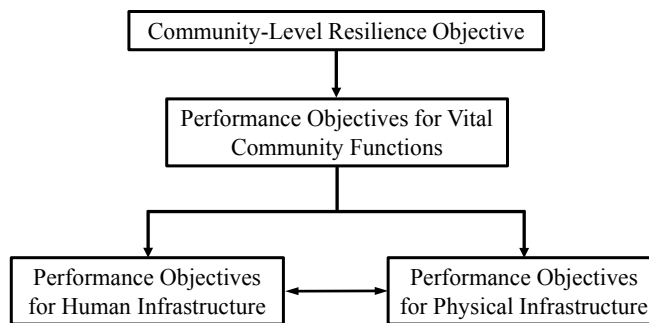


Figure 2 – Hierarchical structure of resilience-based performance objectives for human and physical infrastructure in a community that could be impacted by radioactive material release

The interdependence of components within and across different infrastructure systems is an important consideration in assessing their performance. For example, the human infrastructure (employees) supporting a healthcare facility relies on the availability of potable water at their place of residence in order for them to remain in their community and address the emergency and long term need to restore functionality. Network models can be used to account for the interaction between the spatially distributed infrastructure (human and physical) systems and link their performance objectives across the different hierarchal levels. Hazard characterization will play an important role in establishing resilience-based performance objectives for the human and built environment. One of the first considerations is the types of hazards that will be considered in the assessment and whether or not the effects of multiple hazards will be combined. For example, in the event that nuclear core damage and radioactive release is caused by a seismic event, there will likely be impacts to the human and physical infrastructure within a community that could adversely affect its ability to contain the effects of radioactive release.

The *PReA* model will explicitly capture the recovery of functionality of a community impacted by a radioactive material release event. Several recovery modeling approaches (Burton et al. 2014) will be explored as part of the proposed research program. Agent-based models can be used to

represent the recovery process as a dynamic system of interacting agents such that individual entities that may speed or constrain the pace of recovery and the interdependencies inherent among key agents can be investigated. Stochastic simulation models utilize a sampling-based computational approach that keeps track of recovery processes with random temporal increments over a given duration. Discrete event simulation models assume each event occurs at a particular instant in time and changes the state of the system. Stochastic and discrete event simulation can both be used within the context of a network model, which captures the time-dependent state of a series of links that connect supply and demand nodes that represent the human and physical systems within a community.

Educational and Professional Engagement Program

The proposed educational and professional engagement program seeks to advance risk and resilience modeling principles in the design and management of essential facilities and is directly integrated with the research goals outlined in the previous section. A PhD minor and Undergraduate *TBA* will be developed as part of the proposed program and maintained within the *Risk Institute*.

Undergraduate students in the school of engineering at UCLA are expected to take three courses outside of their major field as part of the *TBA*. As part of the proposed program, an undergraduate *TBA* will be developed in the area of *Resilience Engineering*. One of the proposed *TBA* courses, *Probability and Its Applications to Risk, Reliability and Quality Control*, is currently being taught by [REDACTED]. The course covers an introduction to probability theory, random variables, distributions, functions of random variables, models of failure of components, reliability, redundancy and fault tree analysis. Two more courses will be added: the first course which is entitled *Introduction to Performance-Based Engineering* will introduce students to the tools and techniques needed to quantify the probable impact of hazard events on physical and social systems. The second course, which is entitled *Introduction to Resilience Engineering* will introduce numerical models for simulating the disruption and restoration of systems.

Two existing courses will be included as part of the PhD minor program: *Structural Reliability*, which is currently taught by [REDACTED] in the Department of Civil and Environment Engineering and *Risk Analysis for Engineers and Scientists*, which is currently taught by [REDACTED] in the Material Science and Engineering Department. The new course, which will be titled *Simulation Models for Characterizing the Resilience of Distributed Infrastructure*, will be introduced to upper-level graduate students to basic concepts of resilience modeling including characterization of robustness, rapidity, redundancy and resourcefulness. Tools and techniques for simulating the response of distributed systems to extreme events will be acquired including approaches to modeling recovery of functionality. A case study that draws from real-world systems will be included as part of the course, emphasizing the complexities that arise when multiple stakeholders and performance objectives are to be considered.

Information Dissemination and Professional Engagement

The proposed Faculty Development Program will make important steps towards establishing the next generation of risk and resilience modeling tools and techniques. The research findings will be disseminated to academics, industry practitioners and government through journal publications and conference presentations and proceedings. Journal papers will be submitted to *Risk Analysis* and will be presented at the *Society of Risk Analysis Annual Meeting*. [REDACTED] was recently assigned a leadership position in the newly formed *Infrastructure Resilience Division* of the American Society of Civil Engineers, and can have an influential role in disseminating

results to key stakeholders from government, industry and academia, who are concerned with enhancing the resilience of their communities.

2. Selection Process

The selection of [REDACTED] as the Faculty Candidate for the development program is based on his demonstrated talent and potential to be a leader in the area of risk and resilience engineering. Even at this early stage of his career, he has demonstrated exceptional skill as a researcher, teacher, and graduate student mentor. Professor Burton received his Ph.D. from Stanford University in 2014, is starting his third year as a tenure track assistant professor in UCLA Civil and Environmental Engineering and is a Faculty Affiliate of the B. John Garrick Institute for the Risk Sciences. He was selected from a pool of over two hundred candidates, who submitted applications for the faculty position in the Department of Civil and Environmental Engineering at UCLA.

[REDACTED] is developing an integrated teaching and research program that is directed towards understanding and modeling the relationship between the performance of infrastructure systems within the built environment, and the ability of communities to minimize the extent of socioeconomic disruption following extreme events such as major earthquakes. Because of the inherently interdisciplinary nature of his field, he has established collaborators from a number of disciplines within and outside of UCLA, which include the fields of engineering, geography, sociology and public health. During his two years at UCLA, [REDACTED] has been awarded three research grants (as P.I.) from the National Science Foundation including the CAREER award for young researchers. In 2014, he received a National Science Foundation Fellowship recognizing him as a “Next Generation of Hazards and Disasters Researcher.”

Prior to beginning his Ph.D. work at Stanford, Professor [REDACTED] spent six years in industry and is a registered structural engineer in the state of California. His professional experience has provided him with insights into how disaster risk mitigation can be addressed on a broader scale, which involves thinking beyond the performance of individual facilities (buildings, bridges, etc.) to their interaction in urban systems. [REDACTED] is an active member of the National Society of Black Engineers, the Earthquake Engineering Research Institute and the American Society of Civil Engineers.

3. Management Structure (25 points)

The management structure for the proposed Faculty Development Program is based on that of the *Risk Institute*. [REDACTED], who is the Institute Director, will serve as the primary mentor and main point of contact for [REDACTED] and the development of the proposed program. [REDACTED] has over thirty years of academic and professional experience in reliability engineering, physics of failure modeling and system life prediction, resilient systems design and theories and techniques for risk and safety analysis. He will be able to oversee the development of the proposed program and will provide guidance on various issues including writing new research proposals, recruitment of graduate students and professional engagement. [REDACTED], who is the Director of the Center for Reliability and Resilience Engineering will provide support on the development of courses for the Undergraduate *TBA* and PhD minor. Currently there are 15 Faculty Affiliate members of the Risk Institute in fields ranging from engineering, computer science, public policy and medicine. These faculty members will serve as a valuable resource and potential collaborators on multidisciplinary projects. [REDACTED], who is the Chair of the Department of Civil and Environmental Engineering and a Faculty Affiliate of the Risk Institute, will also serve as a primary mentor, providing key insights on issues specific to [REDACTED]. [REDACTED] home department such as navigating and thriving during the tenure review process.

4. Evaluation Plan (25 points)

A dynamic evaluation plan will be used, on a continuous basis, to assess the effectiveness of the proposed Faculty Development Program and provide improvements as needed. The evaluation procedures will provide an opportunity for [REDACTED] and others in the *Risk Institute* to obtain insights regarding the level of excellence that is achieved by the program. Throughout the duration of the program, information will be compiled about its whether or not the stated goals are being met and specific recommendations will be provided to maintain and enhance the quality of the program. The evaluation will be based on a simultaneous and combined review of the key elements of the program, namely: fundamental research, education and outreach and information dissemination and professional engagement. Evaluation of the program will be performed by three entities. [REDACTED] will provide a bi-annual self-evaluation of his own academic development and his contribution to the growth of the *Risk Institute*. [REDACTED] will conduct an annual evaluation [REDACTED] progress and the effectiveness of the Faculty Development Program. We will also solicit an evaluation from a faculty member outside of the *Risk Institute*. The following performance metrics will be used to evaluate the program: (1) the extent to which the program has succeeded in achieving the stated goals and whether or not the original goals have changed, (2) the effectiveness of the mentoring provided to [REDACTED], (3) strategies for recruiting a diverse and talented pool of students including financial assistance available for graduate students, (4) adequacy of physical facilities (laboratories, student offices, meeting rooms etc.), (5) financial support from externally funded grants (not including NRC Faculty Development Grant), (6) new curricula evaluation including assessment of teaching by students and peers, (7), quality of professional development for graduate and undergraduate students and (8) strategies for strengthening the program.

5. Institutional Support and Cost Sharing (30 points)

The total budget for the proposed Faculty Development Program is \$600,000.00, \$150,000.00 of which will be cost-shared through the [REDACTED], which will also serve as the institutional home for the proposed research and educational programs.

ATTACHMENT C – STANDARD TERMS AND CONDITIONS

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

Preface

This award is based on the application submitted to, and as approved by, the Nuclear Regulatory Commission (NRC) under the authorization [42 U.S.C. § 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 grant or cooperative agreement. The following also apply:

- 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 Part 200 Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards](#).

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 (E.O.), Office of Management and Budget

(OMB) Circulars, the NRC's Mandatory Standard Provisions, special award conditions, and standard award conditions.

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](https://www.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 200

All provisions of 2 CFR Part 200 and all Standard Provisions attached to this grant/cooperative agreement are applicable to the Recipient and to sub-recipients which meet the definition of "Recipient" in 2 Part [§200.86](#), unless a section specifically excludes a sub-recipient from coverage. The Recipient 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 D](#) of [2 CFR Part 200](#) and include this term in lower-tier (sub-award) covered transactions.

Recipients must comply with monitoring procedures and audit requirements in accordance with [2 CFR Part 200, Subpart F—AUDIT REQUIREMENTS](#).

2. Award Package

The Recipient is obligated to conduct project oversight as may be appropriate, to manage the funds with prudence, and to comply with the provisions outlined in [2 CFR Part 200](#). Within this framework, the Principal Investigator (PI) named on the award face page, 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, and is subject to a refund of unexpended grant funds to the NRC.

The non-Federal entity alone must be responsible, in accordance with good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of procurements related to its grant award. These issues include, but are not limited to, source evaluation, protests, disputes, and claims. These standards do not relieve the non-Federal entity of any financial or fiduciary responsibilities or obligations arising under its grant, including sub-contracts and sub-awards, or any other contractual or financial obligation. The Federal awarding agency will not substitute its judgment for that of the non-Federal entity unless the matter is primarily a Federal concern. Violations of law will be referred to the local, State, or Federal authority having proper jurisdiction. See [2 CFR § 200.318\(k\)](#), General Procurement Standards.

Subawards

[Appendix II to Part 200](#) Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

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 Recipient to NRC. See [2 CFR § 200.318](#).

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.

The Recipient agrees to comply with the non-discrimination requirements below:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. §§ 2000d et seq.), which prohibits discrimination on the grounds of race, color, or national origin in any program or activity receiving federal financial assistance.
- Title IX of the Education Amendments of 1972 (20 U.S.C. §§ 1681 et seq.), which prohibits discrimination on the basis of sex in any education program or activity receiving federal financial assistance.
- Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), which prohibits discrimination on the basis of disability in any program or activity receiving federal financial assistance.
- The Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101 et seq.), which prohibits discrimination on the basis of age in any program receiving federal financial assistance.
- The Americans with Disabilities Act of 1990 (42 U.S.C. §§ 12101 et seq.), which prohibits recipients from discriminating on the basis of disability in employment (Title I); State and local government services (Title II); and places of public accommodation and commercial facilities (Title III).
- Parts II and III of E.O. 11246, as amended by E.O. 11375, 11478, 12086, 12107, 13279, 13665, and 13672, which prohibits federal contractors and federally assisted construction contractors and subcontractors, who do over \$10,000 in Government business in one year, from discriminating in employment decisions on the basis of race, color, religion, sex, or national origin and requires that government contractors take affirmative action to ensure that equal opportunity is provided in all aspects of their employment.
- E.O. 13166, "Improving Access to Services for Persons with Limited English Proficiency," which clarifies that national origin discrimination under Title VI includes discrimination on the basis of limited English proficiency (LEP) and requires that the recipient take reasonable steps to ensure that LEP persons have meaningful access to programs and activities.
- Any other applicable non-discrimination law(s).

Generally, Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 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 U.S.C. § 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.

Applicants must ensure that individuals selected as beneficiaries of support under this grant meet the legal requirements consistent with Supreme Court Decisions including *Fisher*, *Gratz*, and *Grutter*.

Based on the pre-award compliance review conducted by NRC's Small Business and Civil Rights Office (SBCR), your institution is placed in a periodic status pending resolution of issues/concerns discussed with your Authorized Representative during the review. Within 60 days of the effective award date, SBCR will conduct a periodic review to ensure compliance with applicable Civil Rights statutes. SBCR will notify, within the 60 days, the institution's Authorized Representative as to the results of the review and requirements, if any, for compliance. The institution's cooperation with SBCR is essential. The continued eligibility for Federal financial assistance is conditioned upon compliance with anti-discrimination regulations.

Modifications/Prior Approval

NRC's prior written approval may be required before a Recipient 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 and obtained from the NRC Grants Officer in advance of the change or obligation of funds. All requests for NRC prior approval, including requests for extensions to the period of performance, must be made, in writing (which includes submission by e-mail), to the designated Grants Officer at least 30 days before the proposed change. The request must be signed by the authorized organizational official. Failure to obtain prior approval, when required, from the NRC Grants Officer, may result in the disallowance of costs, or other enforcement action within NRC's authority.

Lobbying Restrictions

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

The Recipient will comply with provisions of 31 U.S.C § 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 Recipient shall submit, at the time of application, a completed "Certification Regarding Lobbying" form, regardless of dollar value.

If applicable, the Recipient receiving in excess of \$100,000.00 in Federal funding shall submit a completed Standard Form (SF-LLL), "Disclosure of Lobbying Activities" for any persons engaged in lobbying activities, as discussed at 31 U.S. Code § 1352 – Limitation on use of appropriated funds to influence certain Federal contracting and financial transactions. The form concerns 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. If the Recipient must submit the SF-LLL, including those received from sub-recipients, contractors, and subcontractors, to the Grants Officer.

Debarment And Suspension – (See [2 CFR Part 180](#); [2 CFR § 200.205](#); [2 CFR § 200.113](#); and [2 CFR Part 200, Appendix II.](#))

The Recipient 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, 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 the recipient's 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); or
- (4) Have had one or more public transactions (Federal, State, or local) terminated for cause or default within the preceding three years.
- (5) The Recipient agrees that, unless authorized by the Grants Officer, it will not knowingly enter into any subaward or contracts under this grant/cooperative agreement with a person or entity that is not included on the System for Award Management (SAM) (<https://www.sam.gov>).

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

Debarment, Suspension, Ineligibility, and Voluntary Exclusion

The Recipient 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 [2 CFR Part 180](#) and [2 CFR Part 200](#).

Drug-Free Workplace

The Recipient 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 U.S.C. §§ 8101-8106](#).

Implementation of E.O.13224 – Executive Order on Terrorist Financing

The Recipient 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 Recipient 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.

The Recipient must comply with E.O. 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:

[Implementation of Executive Order 13224 Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten To Commit, or Support Terrorism amended by E.O. 13268, 13284, and 13372.](#)

Procurement Standards - [2 CFR §§ 200.318-200.326](#)

Sections 200.318 - 200.326 set forth standards for use by Recipients 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 will be imposed by the Federal awarding agencies upon Recipients, unless specifically required by Federal statute, executive order, or approved by OMB.

Travel and Transportation

Travel must be in accordance with the Recipient's Travel Regulations or the U.S. Government Travel Policy and Regulations at: <http://www.gsa.gov/portal/category/21222> and the per diem rates set forth at: <http://www.gsa.gov/portal/content/104877>, absent Recipient's travel regulations. Travel and transportation costs for the grant must be consistent with provisions as established in [2 CFR § 200.473-474](#).

All other travel, domestic or international, must not increase the total estimated award amount for the grant.

The Recipient will comply with the provisions of the Fly America Act (49 U.S.C 40118), as implemented at 41 CFR §§ 301-10.131 through 301-10.143.

Federal funds may not be used to travel to countries identified as "Foreign Policy Restricted Countries", as identified by the U.S. Department of State or the U.S. Agency for International Development.

Property Standards

Property standards of this award shall follow provisions as established [2 CFR §§ 200.310-200.316](#).

Intangible Property

Intangible and intellectual property of this award shall generally follow provisions established in [2 CFR § 200.315](#).

Inventions Report - The Bayh-Dole Act (P.L. 96-517) affords Recipients the right to elect and retain title to inventions they develop with funding under an NRC grant award ("subject inventions"). In accepting an award, the Recipient 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 Recipient report all subject inventions to the awarding agency (NRC) as well as include an acknowledgement of federal support in any patents.

Patent Notification Procedures - If the NRC or its Recipients, 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, E.O.12889 requires NRC to notify the owner. If the Recipient uses or has used patented technology under this award without license or permission from the owner, the Recipient must notify the Grants Officer. This notice does not imply 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, such as data, databases or software are determined by [Subpart D](#) of [2 CFR Part 200](#). The Recipient 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 Recipient 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 Recipient employees may be copyrighted, but only the part authored by the Recipient is protected because, under [17 U.S.C. § 105](#), works produced by Government employees are not copyrightable in the United States. On occasion, NRC may ask the Recipient 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 U.S.C. § 105](#).

Record Retention and Access

Recipient shall follow established provisions in [2 CFR §§ 200.333-337](#).

Conflict Of Interest

Conflict of Interest standards for this award will follow the Organizational Conflict of Interest (OCOI) requirements set forth in Section 170A of the Atomic Energy Act of 1954, as amended, and provisions set forth at [2 CFR § 200.112](#), Conflict of Interest.

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 Recipient'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 Acquisition Management Division, unless otherwise delegated, who shall appoint an intra-agency Appeal Board to review a recipient appeal of an agency action, if required, which will consist of the program office director, the Deputy Director of Office of Administration, and the Office of General Counsel, or their designees.
- 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 Recipient 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.

Remedies for Noncompliance

Termination of this award will follow provisions as established and described above in "Dispute Review Process" in [2 CFR §§ 200.338-342](#).

Performance and Financial Monitoring and Reporting - 2 CFR §§ 200.327-329

Recipient Financial Management systems must comply with the provisions in [2 CFR § 200.302](#).

- Payment – [2 CFR § 200.305](#)
- Cost Share or Matching – [2 CFR § 200.306](#)
 - Recipients are to be careful with providing excessive cost share or match since at the end of the grant, if the identified match has not been provided, then a portion of the federal share may be required to be returned to the Government.
- Program Income – [2 CFR § 200.307](#)
 - Earned program income, if any, will be added to funds committed to the project by the NRC and Recipient and used to further eligible project or program objectives or be deducted from the total project cost for the grant, as directed by the Grants Officer or indicated in the terms and conditions of the award.
- Revision of Budget and Program Plans – [2 CFR § 200.308](#)
 - The Recipient is required to report deviations from the approved budget and program descriptions in accordance with – [2 CFR § 200.308\(b\)](#) and request prior written approval from the Project Officer and the Grants Officer.
 - The Recipient is not authorized to re-budget between direct costs and indirect costs without written prior approval of the Grants Officer.
 - The Recipient is authorized to transfer funds among direct cost categories up to a cumulative 10 percent of the total approved budget. The Recipient is not allowed to transfer funds if the transfer would cause any Federal appropriation to be used for purposes other than those consistent with the original intent of the appropriation.
 - Allowable Costs – [2 CFR §§ 200.403](#)
- See section [2 CFR §§ 200.330-332](#) for Subrecipient Monitoring and Management.

FEDERAL FINANCIAL REPORTS

Federal Financial Reports (SF-425) are semi-annually, for the periods ending March 31 and September 30. Reports are due within 30 calendar days following the end of the reporting period and must be emailed to the Project Officer at the email addressed indicated in the Notice of Award, and to the Grants Officer at:

Grants_FFR.Resource@nrc.gov. (NOTE: There is an underscore between Grants and

FFR in the email address.) The SF-425 form and instructions are available at the following URL: http://www.whitehouse.gov/omb/grants_forms/.

PERFORMANCE PROGRESS REPORTS

The performance (technical) reports indicated below are subject to [2 CFR §200.328](#).

Faculty Development

Performance reports must be submitted semi-annually, for the periods ending March 31 and September 30, or any portion thereof, regardless of the award date. Reports are due within 30 days following the end of each reporting period and must be emailed to the Project Officer at the email addressed indicated in the Notice of Award, and to the Grants Officer at: Grants_PPR.Resource@nrc.gov. (*NOTE: There is an underscore between Grants and PPR in the email address.*)

Final Reports - The Recipient is required to submit final reports, both Financial (SF-425) and Performance (SF-PPR, SF-PPR-B, SF-PPR-E) within 90 days of the grant expiration. In addition to these reports, a final SF-428, Tangible property report, is also required, if applicable. The final PPR (for Scholarship, Fellowship, and Trade School and Community College Scholarship awards) must include the names of all students with up to date contact information (mailing address, telephone/cell phone, email address). The reports must be emailed to the Project Officer at the email addressed indicated in the Notice of Award, and to the Grants Officer at: Grants_FFR.Resource@nrc.gov and Grants_PPR.Resource@nrc.gov. (*NOTE: There is an underscore between Grants and FFR and Grants and PPR in the email addresses.*)

For grant awards that are modified to add additional Program Descriptions, the recipient is required to address the applicable grant performance metrics associated with all programs. Further, these metrics should be broken out by individual program (e.g. Program A and Program B). This can be done utilizing Block 10, Performance Narrative, of the SF-PPR form. If this block does not have sufficient space, additional pages will be accepted. Sf-PPR-B and SF-PPR-E should be used to address both programs as well.

Period of Performance – [2 CFR § 200.309](#)

The recipient may charge to the Federal award only allowable costs incurred during the period of performance and any costs incurred before the NRC or pass-through entity made the Federal award that was authorized by the NRC or pass through entity.

Unless otherwise authorized in [2 CFR Part 200](#) or by special award condition, any extension of the award period can only be authorized by the Grants Officer in writing. Assurances of funding from other than the Grants Officer shall not constitute authority to obligate funds for programmatic activities beyond the expiration date.

The NRC Grant Officer may authorize a no cost extension of the period of performance. The recipient must submit a no cost extension request no less than 30 days prior to the award end date. Any request for a no cost extension after the grant has expired will not be approved. However, the NRC has no obligation to provide any additional prospective or incremental funding. Any modification of the award to increase funding and/or to extend the period of performance is at the sole discretion of the NRC.

2007 report and specifically relates to Science, Technology, Engineering, and Mathematics (STEM) curricula.

As part of the OMB requirements indicated above (for metric reporting), the recipient shall address the following questions and submit responses with the required progress reports:

Faculty Development Metrics:

1. How many Faculty have been sponsored by NRC funding?
 - a. Response is the number of faculty sponsored, for this reporting period and cumulative to the grant.

2. How many items have the sponsored faculty produced, for example, Professional Journal articles, publications, patents, or conference reports?
 - a. Response is the type and number of items (not a bibliography), for this reporting period and cumulative to the grant.

Unsatisfactory Performance

Failure to perform the work in accordance with the terms of the award and maintain at least a satisfactory performance rating may result in designation of the Recipient as high risk and the assignment of special award conditions. Further action may be required as specified in the standard term and condition entitled "Remedies for Noncompliance."

Failure to comply with the award provisions may result in a negative impact on future NRC funding. In addition, the Grants Officer may withhold payments; change the method of payment from advance to reimbursement; impose special award conditions; suspend or terminate the grant.

Other Federal Awards With Similar Programmatic Activities

The Recipient will immediately notify the Project Officer and the Grants Officer in writing if after award, other financial assistance is received to support or fund any portion of the program description stated in the NRC award. NRC will not pay for costs that are funded by other sources.

Prohibition Against Assignment By The Recipient

The Recipient will not transfer, pledge, mortgage, or otherwise assign the award, or any interest to the award, or any claim arising under the award, to any party, banks, trust companies, or other financing or financial institutions without the written approval of the Grants Officer.

Site Visits

The NRC, through authorized representatives, has the right to make site visits to review project accomplishments and management control systems and to provide technical assistance as required. If any site visit is made by the NRC on the premises of the Recipient or contractor under an award, the Recipient shall provide and shall require his/her contractors to provide reasonable access to all facilities and provide necessary assistance for the safety and convenience of the Government representative in the performance of his/her official duties.

IV. Additional Requirements

Criminal and Prohibited Activities

The Program Fraud Civil Remedies Act ([31 U.S.C. §§ 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).

False statements ([18 U.S.C. § 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.

False Claims Act ([31 U.S.C. § 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.

Copeland “Anti-Kickback” Act ([18 U.S.C. § 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

Recipients are encouraged to purchase American-made equipment and products with funding provided under this award.

Increasing Seat Belt Use in the United States

E.O. 13043, amended by E.O. 13652, requires Recipients to encourage employees and contractors to enforce on-the-job seat belt policies and programs when operating company-owned, rented or personally-owned vehicle.

Federal Leadership of Reducing Text Messaging While Driving

E.O. 13513 requires Recipients to encourage employees, sub-awardees, and contractors to adopt and enforce policies that ban text messaging while driving company-owned, rented vehicles or privately owned vehicles when on official Government business or when performing any work for or on behalf of the Federal Government.

Federal Employee Expenses

Federal agencies are barred from accepting funds from a Recipient 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 Recipient’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 Recipients or applicants regardless of the source.

Minority Serving Institutions (MSIs) Initiative

Pursuant to E.O.s 13230 and 13270, [amended by E.O. 13316](#) and [13385](#), 13532, 13592, 13555, 13515, and 13621, 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 Recipients 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 Recipient 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 Recipient organization shall investigate the allegation and submit its findings to the Grants Officer. The NRC may accept the Recipient's findings or proceed with its own investigation. The Grants Officer shall inform the Recipient 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 Recipient 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 Recipient 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 **[Recipient 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."

Trafficking In Victims Protection Act Of 2000 (as amended by the Trafficking Victims Protection Reauthorization Act of 2003)

Section 106(g) of the Trafficking In Victims Protection Act Of 2000 (as amended as amended, directs on a government-wide basis that:

"...any grant, contract, or cooperative agreement provided or entered into by a Federal department or agency under which funds are to be provided to a private entity, in whole or in part, shall include a condition that authorizes the department or agency to terminate the grant, contract, or cooperative agreement, without penalty, if the recipient or any subrecipient, or the contractor or any subcontractor (i) engages in severe forms of trafficking in persons or has procured a commercial sex act during the period of time that the grant, contract, or cooperative agreement is in effect, or (ii) uses forced labor in the performance of the grant, contract, or cooperative agreement." (See 22 U.S.C. §7104(g).)

EXECUTIVE COMPENSATION REPORTING

2 CFR § 170.220 directs agencies to include the following text to each grant award to a non-federal entity if the total funding is \$25,000 or more in Federal funding.

Reporting Subawards and Executive Compensation.

a. Reporting of first-tier subawards.

1. *Applicability.* Unless you are exempt as provided in paragraph d. of this award term, you must report each action that obligates \$25,000.00 or more in Federal funds that does not include Recovery funds (as defined in section 1512(a)(2) of the American Recovery and Reinvestment Act of 2009, Pub. L. 111–5) for a subaward to an entity (see definitions in paragraph e. of this award term).

2. Where and when to report.

i. You must report each obligating action described in paragraph a.1. of this award term to <http://www.fsrs.gov>.

ii. For subaward information, report no later than the end of the month following the month in which the obligation was made. (For example, if the obligation was made on November 7, 2010, the obligation must be reported by no later than December 31, 2010.)

3. *What to report.* You must report the information about each obligating action that the submission instructions posted at <http://www.fsrs.gov> specify.

b. Reporting Total Compensation of Recipient Executives.

1. *Applicability and what to report.* You must report total compensation for each of your five most highly compensated executives for the preceding completed fiscal year, if—

i. the total Federal funding authorized to date under this award is \$25,000.00 or more;

ii. in the preceding fiscal year, you received—

(A) 80 percent or more of your annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at [2 CFR § 170.320](#) (and subawards); and

(B) \$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at [2 CFR § 170.320](#) (and subawards); and

iii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 ([15 U.S.C. 78m\(a\), 78o\(d\)](#)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/excomp.htm>.)

2. *Where and when to report.* You must report executive total compensation described in paragraph b.1. of this award term:

- i. As part of your registration profile at <http://www.sam.gov>.
- ii. By the end of the month following the month in which this award is made, and annually thereafter.

c. *Reporting of Total Compensation of Subrecipient Executives.*

1. *Applicability and what to report.* Unless you are exempt as provided in paragraph d. of this award term, for each first-tier subrecipient under this award, you shall report the names and total compensation of each of the subrecipient's five most highly compensated executives for the subrecipient's preceding completed fiscal year, if—

- i. in the subrecipient's preceding fiscal year, the subrecipient received—

(A) 80 percent or more of its annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at [2 CFR § 170.320](#) (and subawards); and

(B) \$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts), and Federal financial assistance subject to the Transparency Act (and subawards); and

- ii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>.)

2. *Where and when to report.* You must report subrecipient executive total compensation described in paragraph c.1. of this award term:

- i. To the recipient.
- ii. By the end of the month following the month during which you make the subaward. For example, if a subaward is obligated on any date during the month of October of a given year (*i.e.*, between October 1 and 31), you must report any required compensation information of the subrecipient by November 30 of that year.

d. *Exemptions*

If, in the previous tax year, you had gross income, from all sources, under \$300,000.00, you are exempt from the requirements to report:

- i. Subawards,

and

ii. The total compensation of the five most highly compensated executives of any subrecipient.

e. *Definitions.* For purposes of this award term:

1. *Entity* means all of the following, as defined in 2 CFR Part 25:

i. A Governmental organization, which is a State, local government, or Indian tribe;

ii. A foreign public entity;

iii. A domestic or foreign nonprofit organization;

iv. A domestic or foreign for-profit organization;

v. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.

2. *Executive* means officers, managing partners, or any other employees in management positions.

3. *Subaward:*

i. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.

ii. The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see Sec. __.210 of the attachment to OMB Circular A-133, "Audits of States, Local Governments, and Non-Profit Organizations")

iii. A subaward may be provided through any legal agreement, including an agreement that you or a subrecipient considers a contract.

4. *Subrecipient* means an entity that:

i. Receives a subaward from you (the recipient) under this award; and

ii. Is accountable to you for the use of the Federal funds provided by the subaward.

5. *Total compensation* means the cash and noncash dollar value earned by the executive during the recipient's or subrecipient's preceding fiscal year and includes the following (for more information see [17 CFR § 229.402\(c\)\(2\)](#)):

i. *Salary and bonus.*

ii. *Awards of stock, stock options, and stock appreciation rights.* Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.

iii. *Earnings for services under non-equity incentive plans.* This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.

iv. *Change in pension value.* This is the change in present value of defined benefit and actuarial pension plans.

v. *Above-market earnings on deferred compensation which is not tax-qualified.*

vi. Other compensation, if the aggregate value of all such other compensation (e.g., severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property) for the executive exceeds \$10,000.00.