

Grant and Cooperative Agreement

CHOOSE ONE:
 COOPERATIVE AGREEMENT
 GRANT

CHOOSE ONE: EDUCATION FACILITIES RESEARCH SDCR TRAINING

1. GRANT/COOPERATIVE AGREEMENT NUMBER NRC-HQ-84-14-G-0052	2. SUPPLEMENT NUMBER M0001	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, BERKELEY SPONSORED PROJECTS OFFICE 2150 SHATTUCK AVE RM 300 BERKELEY CA 94704	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) SEE SCHEDULE
8. COMMERCIAL & GOVERNMENT ENTITY (CAGE) NO.	

10. RESEARCH, PROJECT OR PROGRAM TITLE
SEE SCHEDULE

11. PURPOSE
SEE SCHEDULE

12. PERIOD OF PERFORMANCE (Approximately)
08/01/2014 through 06/29/2020

13A.	AWARD HISTORY	13B.	FUNDING HISTORY
PREVIOUS	\$430,000.00	PREVIOUS	\$430,000.00
THIS ACTION	\$450,000.00	THIS ACTION	\$30,000.00
CASH SHARE	\$0.00	TOTAL	\$460,000.00
NON-CASH SHARE	\$0.00		
RECIPIENT SHARE	\$280,000.00		
TOTAL	\$880,000.00		

14. ACCOUNTING AND APPROPRIATION DATA
2017-X0200-IUPNSE-60-60D099-52-S-164-1148-4110

PURCHASE REQUEST NO.	JOB ORDER NO.	AMOUNT	STATUS
RES-17-0187			

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: <input type="checkbox"/> NO CHANGE IS MADE TO EXISTING PROVISIONS <input type="checkbox"/> FDP TERMS AND CONDITIONS AND THE AGENCY-SPECIFIC REQUIREMENTS APPLY TO THIS GRANT	18. APPLICABLE ENCLOSURE(S), IF CHECKED: <input type="checkbox"/> PROVISIONS <input type="checkbox"/> SPECIAL CONDITIONS <input type="checkbox"/> REQUIRED PUBLICATIONS AND REPORTS
---	---

UNITED STATES OF AMERICA	COOPERATIVE AGREEMENT RECIPIENT
---------------------------------	--

CONTRACTING/GRANT OFFICER M'LITA R. CARR	DATE 06/29/2017	AUTHORIZED REPRESENTATIVE	DATE
---	--------------------	---------------------------	------

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>The purpose of this modification is to revise the grant in it's entirety:</p> <ol style="list-style-type: none"> 1. Add an additional program to the existing grant: Program B: entitled "Fuel Cycle, Waste Management and Nuclear Chemistry at UC Berkeley: Building for the Future"; 2. Update the Terms and Conditions; 3. Extend the grant's period of performance as a result of the addition of Program B. <p>As a result of this modification:</p> <ol style="list-style-type: none"> 1. Block 9, PRINCIPAL INVESTIGATOR/ORGANIZATION'S PROJECT OR PROGRAM MGR, delete in its entirety and replace with the following: "Programs A and B: ██████████, ██████████" 2. Block 10, RESEARCH, PROJECT, OR PROGRAM TITLE, delete in its entirety and replace with the following: "Programs A: Faculty Development Program for UC Berkeley Nuclear Engineering; Program B: Fuel Cycle, Waste Management and Nuclear Chemistry at UC Berkeley: Building for the Future"; 3. Attachments A, B, & C, delete in its entirety and replace with the following, see attached beginning on page 4. <p>Please see attached for detailed information.</p> <p>LIST OF CHANGES:</p> <p>Period Of Performance End Date changed from 2017-07-31 00:00:00 to 2020-06-29 00:00:00</p> <p>Total Amount for this Modification: \$0.00</p> <p>New Total Amount for this Version: \$0.00</p> <p>New Total Amount for this Award: \$430,000.00</p> <p>Continued ...</p>				

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>Buyer changed from DANIEL APP</p> <p>to M'LITA R CARR</p> <p>Agreement Officer changed from ERIKA EAM</p> <p>to M'LITA R CARR</p> <p>Administrative Grant Officer changed from DANIEL APP</p> <p>to M'LITA R CARR</p> <p>Delivery Location Code: NRCHQ NUCLEAR REGULATORY COMMISSION NUCLEAR REGULATORY COMMISSION WASHINGTON DC 20555-0001 USA</p> <p>Payment: ASAP GRANT FUNDS REIMBURSEMENT SYS US TREASURY</p> <p>Period of Performance: 08/01/2014 to 06/29/2020</p>				

Attachment A - Schedule

A.1 PURPOSE OF GRANT

The purpose of this Grant is to provide support to two distinct programs with University of California, Berkeley, as described in Attachment B entitled "Program Description."

1. **Program A:** Faculty Development Program for UC Berkeley Nuclear Engineering
2. **Program B:** Fuel Cycle, Waste Management and Nuclear Chemistry at UC Berkeley: Building for the Future

A.2 PERIOD OF GRANT

The effective date of this Grant is:

Program A: Faculty Development Program for UC Berkeley Nuclear Engineering – The effective date of this grant is August 1, 2014. The estimated completion date of this Grant is July 31, 2017. Funds obligated hereunder are available for program expenditures for the estimated period: August 1, 2014 – July 31, 2017.

Program B: Fuel Cycle, Waste Management and Nuclear Chemistry at UC Berkeley: Building for the Future – The effective date of this grant is June 30, 2017. The estimated completion date of this Grant is June 29, 2020. Funds obligated hereunder are available for program expenditures for the estimated period: June 30, 2017 – June 29, 2020.

A.3 AMOUNT OF AWARD AND PAYMENT PROCEDURES

1. **Program A:** The total estimated amount of this program is \$560,000.00 for the three year period inclusive of \$130,000.00 in cost share. NRC hereby obligates the amount of \$430,000.00 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.
2. **Program B:** The total estimated amount of this program is \$600,000.00 for the three year period; inclusive of \$150,000.00 in cost share. 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.4 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.5 BUDGET

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

Program A

- 1. Total Estimated NRC Amount: \$430,000.00
- 2. Total Obligated Amount: \$430,000.00
- 3. Cost-Sharing Amount: \$130,000.00
- 4. Activity Title: Faculty Development Program for UC Berkeley Nuclear Engineering
- 5. NRC Project Officer: Nancy Hebron-Isreal
- 6. DUNS No.: 124726725

	Year 1	Year 2	Year 3
Total	\$ 143,333.00	\$ 143,333.00	\$ 143,334.00

Program B

- 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: Fuel Cycle, Waste Management and Nuclear Chemistry at UC Berkeley: Building for the Future
- 5. NRC Project Officer: Nancy Hebron-Isreal
- 6. DUNS No.: 124726725

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	NRC-HQ-60-17- FOA-0002 Year 1	NRC-HQ-60-17- FOA-0002 Year 2	NRC-HQ-60-17- FOA-0002 Year 3		
a.	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]
b.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
c.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
d.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
e.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
f.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
g.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
h.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
i.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
j.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
k. TOTALS (sum of 6i and 6j)	\$ 102,849.00	\$ 169,867.00	\$ 177,284.00	\$ 450,000.00	\$ 450,000.00
7. Program Income	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]

Authorized for Local Reproduction

Standard Form 424A (Rev. 7-97)
Prescribed by OMB (Circular A -102) Page 1A

ATTACHMENT B - PROJECT DESCRIPTION

Program A: Faculty Development Program for UC Berkeley Nuclear Engineering

Principal Investigator: [REDACTED]

The proposed faculty development program will provide funding to [REDACTED], a new tenure-track Assistant Professor within the Department of Nuclear Engineering at the University of California, Berkeley (UCB) to supplement the startup package made available by the University. This funding will ensure that [REDACTED] has sufficient funds to begin developing her independent research program and new courses, with funded graduate students and summer salary, beyond the scope of the startup funds. Furthermore, the Department of Nuclear Engineering will establish a mentoring committee consisting of the PI and co-PI's as an additional resource to advise [REDACTED] on research, teaching, and University service matters.

Background:

Last year at this time the Department of Nuclear Engineering was completing a search for one new, tenure-track Assistant Professor of Nuclear Engineering. The search was within the area of reactor neutronics / reactor physics, though applications from all areas of nuclear reactor science and technology were considered. The application period closed on October 1, 2012, and the Department search committee subsequently narrowed the field of applicants down to two: [REDACTED]. The search committee felt that both candidates had an appropriate level of experience past their doctoral degree for an untenured faculty position and displayed evidence for capability to achieve world class scholarship in research, teaching, and professional service, as well as capacity to attract extramural research funding.

The search committee therefore appealed to the University to leverage their one full time equivalent position into two. They were successful, and both Prof. Fratoni and Prof. Slaybaugh were invited to join the faculty. [REDACTED] began July 1, 2013 for the fall semester, and is receiving support from the NRC Faculty Development Grant awarded to UCB last year. [REDACTED] was unable to join the faculty until the spring semester, January 1, 2014, because of prior commitments.

Faculty Development Program:

The proposed faculty development program will provide research/teaching funding and create a mentoring committee to advise Prof. Slaybaugh on research, teaching, and service matters that is beyond the scope of the existing programs for new faculty at the University of California, Berkeley. The University currently provides Assistant Professors with a new faculty orientation and a faculty guide to campus life, which is available for download at:

<http://berkeley.edu/faculty/>

<http://teaching.berkeley.edu/new-faculty-resources>

http://facultyequity.chance.berkeley.edu/resources/fsg_welcomingnew.shtml

Furthermore, the department has established a deep and comprehensive mentoring program for Prof. Slaybaugh. In addition to the PI and co-PIs as resources for general guidance as a new faculty member, another senior NE faculty member will provide mentoring in her subject area of neutronics and reactor design. Additionally, two highly accomplished female UC faculty members will meet with her regularly on broader research, teaching and University service matters, one of

whom is a distinguished scientist and senior manager at LBNL in High Performance Computing, [REDACTED] own area of expertise.

Additionally, the Department and campus provides a merit review every two years, with a mid-career tenure review performed at the approximate half-way point of the junior faculty member's service as an Assistant Professor. These reviews are performed in accordance with the policies of the Academic Personnel Office at the University of California, Berkeley. Additionally, the Department of Nuclear Engineering proposes to establish a more informal mentoring and advisory committee to interact with and advise Prof. Slaybaugh. The faculty mentoring committee will consist of [REDACTED], who have an excellent track record of mentoring junior faculty.

The Department of Nuclear Engineering has demonstrated an excellent track record of mentoring its junior faculty: all junior faculty hires in the past two decades were tenured and the last junior hire, [REDACTED], is on the way to a promotion to Associated Professor with Tenure. These advisory meetings will occur on a more informal basis, and provide an avenue for [REDACTED] to get advice on her faculty development in a continuous, informal fashion, as well as provide advice and direction on the standard practice for developing the research and teaching portfolio necessary to demonstrate the advancement to tenure.

The research funding proposed within this grant application will be provided to [REDACTED] to provide summer salary support, in years one and two, and 1.5 graduate students in all three years, one undergraduate hourly in all three years, and to provide funds for travel and consumable supplies. In addition to the startup funds provided by the University, this will provide sufficient resources for the new faculty member to begin developing her research group and activities and lessen the need to immediately be writing multiple proposals seeking funding.

Management Structure:

The faculty development program will be administered by the PI and co-PI's, all of whom will be members of the newly created faculty mentoring committee. However, all funds from this award will be made available to [REDACTED], and no administrative or personnel funds have been budgeted for the mentoring committee within this proposal. The [REDACTED] will provide additional oversight of the mentoring committee and assist [REDACTED] with management of the grant. The periodic progress reports will be jointly prepared by the PI and the new faculty member, and the financial reports prepared within the existing research support organization within the college of engineering.

Evaluation plan:

The stated goal of the faculty development grant program developed by the U.S. NRC is to "attract and retain highly qualified junior faculty in academic teaching careers." The Department of Nuclear Engineering at UC Berkeley has an excellent record in developing junior faculty, as evidenced by the previous five junior faculty hires within the Department, and two of those junior hires serve as co-principal investigators for this proposal. As part of this program, the mentoring committee will provide advice on an informal, as needed basis to the new faculty hire to prepare them for advancement to tenure, and this will supplement the standard practice of the University in terms of merit reviews, which occur every two years for Assistant Professors, and a mid-career tenure review.

As part of the mentoring process developed under this grant proposal, [REDACTED] will be

asked to provide a yearly self-assessment that describes the support of graduate students and undergraduate researchers, research activities, publications and presentations, and service to the University and research community. This yearly self-assessment will be discussed with the mentoring committee, and assist the new faculty member in preparing for her merit, mid-career, and tenure reviews.

Institutional Capability:

The Department of Nuclear Engineering at the University of California, Berkeley is continually ranked as one of the top nuclear engineering departments in both undergraduate and graduate teaching, and celebrated its 50th Anniversary in 2008. The Department currently has fifteen active faculty members, which includes three active Professors in the Graduate School and three Professors in Residence. The Department currently has around 78 undergraduate, 87 graduate students, and about 10 post-doctoral researchers and visiting scientists, and research funding which exceeds \$10M/year. The old Reactor Lab is being renovated and repurposed as a general-purpose experimental facility for the entire Department, and new facilities are being added continuously. As an example, most recently, the High Flux Neutron Generator (HFNG) is entering its commissioning phase; the HFNG is a DD plasma source that is designed to yield 5×10^{11} n/sec, which can either be monoenergetic (2.45 MeV) or thermal. Similarly the Compact Integral Effects Test (CIET), an 8-m tall, 0.5-scale prototype vertical cooling loop is nearing completion, which will be used to study thermal transfer in the Fluoride salt-cooled High-temperature Reactor (FHR), as part of a large DOE Integrated Research Project.

Institutional Computing Resources

The Departmental has its own computer cluster named Berkelium. The cluster has recently been upgraded with 12 new compute nodes hosting four 12-core AMD Opteron processors and 96-256GB of RAM each, increasing the total resources to 672 cores and 1692 GB of RAM. The large amount of RAM allows the cluster handle a large number of concurrent jobs as well as single, large-scale jobs. The new nodes are connected through high-speed QDR Infiniband interconnects, greatly improving their MPI performance compared to the Ethernet-connected nodes. Data is stored on a 32TB RAID-6 array, providing ample space and ensuring data preservation in case of drive failures. Three Nvidia Tesla GPU computing cards have been also added to explore the potential performance increases and cost savings of this emerging architecture. This will be an excellent resource for [REDACTED] as her area is computational neutronics, and this grant will allow the her, in collaboration with [REDACTED], to further improve both hardware and available software support in the computational reactor physics / reactor design area.

Institutional Support:

The appendix includes a letter from the [REDACTED] which commits \$130,000 in startup funding as matching funds to the proposed faculty development grant application.

Program B: Fuel Cycle, Waste Management and Nuclear Chemistry at UC Berkeley: Building for the Future

Principal Investigator: [REDACTED]

Background

Introduction and Background. The Nuclear Engineering Department at the University of California Berkeley is a premier NE program, currently ranked #5 by the US News and World Report survey. It is a small but vibrant Department, typically consisting of 8 FTE faculty, joined by 6 non-FTE faculty (Professors in Residence, Professors in the Graduate School, Adjuncts, Lecturers). The Department's mission is reflected in its tripartite strengths in advanced nuclear power concepts, nonproliferation, and basic and applied science. UC Berkeley is the lead institution in the Nuclear Science and Security Consortium (NSSC), a \$25M/5 year center-of-excellence funded by the NNSA Office of Nonproliferation, to prepare a future cadre of nuclear security experts for careers in the DOE national laboratories and related federal service.

In June of this year, [REDACTED] died at age 57 after a prolonged illness. Compounding the loss was the demise of two other faculty within the past two years our Department relied upon for expertise in [REDACTED]

In light of this crisis, the University granted us an off-cycle search authorization for a Non-Tenured/Tenure Track (Assistant Professor) faculty member, in order that the position could be filled by August 2017. This person will almost certainly be within the first six years of their career (likely much earlier), and thus eligible for support from a NRC Faculty Development grant.

Proposed Faculty Development Program. The University of California Berkeley, consistently ranked as the #1 public university in the nation, and among the top 5 universities in the world, has an unparalleled record for selecting new faculty members, providing them with the tools and resources to succeed, and promoting them to tenure, where they continue to grow into world-class scholars and educators. It is a point of pride for Berkeley, that of all Assistant Professors appointed to the faculty, 70% of them have achieved tenure six years later – including those who leave Berkeley of their own volition, due to family circumstances or other opportunities. Some of the general resources for new faculty to get traction at Berkeley both from a personal standpoint, and from a sponsored research perspective are found at:

<http://ofew.berkeley.edu/new-faculty>

<http://www.spo.berkeley.edu/fund/newfaculty.html>

The campus has an extensive set of in-person briefings and orientations for new faculty within the first months of the arrival of a new faculty member, which the Vice Provost for the Faculty leads in person, along with a select team of faculty of differing experiences and degrees of seniority. Furthermore, the Department of Nuclear Engineering has developed a deep and comprehensive mentoring program tailored to the individual. In the case of our last NRC Faculty Development Grant for [REDACTED], the PI and Co-PIs created a blended mentoring team for her, consisting of (i) [REDACTED], a distinguished and long-time faculty member as a subject-area adviser, (ii) [REDACTED] of the EECS Department, and LBNL Associate Laboratory Director for Computational Science, to advise her on accessing and exploiting high performance resources at the Lab, and (iii) [REDACTED] a female tenured faculty member only a few years older than [REDACTED], as a role model, and for general advice on navigating a career in the College of Engineering. Depending on the individual selected for the position, and their specific areas of expertise, a similar tailored mentoring team will be formed; the PI and Co-PI will follow the person's progress closely, and advise them on all their assessment metrics throughout. Additionally, the Department and campus provides a merit review every two years, with a mid-career tenure review performed at the approximate half-way point of the junior faculty member's service as an Assistant Professor. These reviews are performed in accordance with the policies of the Academic Personnel Office at the University of California, Berkeley. As detailed in the

accompanying document "Past NRC Funding and Summary of Results", the efficacy of our faculty development plan supported by NRC funding in the case of [REDACTED]

[REDACTED] is abundantly clear.

The NRC funding will enable the new faculty member to support one Graduate Student Researcher (GSR) for all three years, one Postdoctoral Research Associate for Years II and III, one month of his or her own summer salary each year, travel to conferences, etc., and equipment and consumables, as detailed in the Budget Narrative.

Three other important comments are in order in regard to the development plan. First, while Prof. Ahn spanned the overlap of the three areas of Fuel Cycle, Waste Management, and Nuclear Chemistry, and particularly in their areas of overlap, given the recent loss of three faculty members in the area of nuclear chemistry, the sense of the Department is to skew the search and selection process more towards this latter area, and the Budget Narrative was written with a hypothetical nuclear chemist in mind. Second, the new Assistant Professor will not be entirely alone; the Department is appointing [REDACTED], a Senior Scientist of LBNL, as an Adjunct Professor in the Nuclear Engineering Department, who can teach and mentor students in some selected areas that [REDACTED] taught, particularly actinide geochemistry. While not comprehensively covering [REDACTED] expertise, her contributions will complement the broader expectations of the new Assistant Professor. [REDACTED] will thus also be an excellent partner and mentor for the new junior faculty member. Third, we are delighted to report that the [REDACTED] is keenly interested in this search process and appointment, and has pledged to assist the new Assistant Professor in several ways, including contributing a person to the search committee ([REDACTED]), providing infrastructure and some summer salary as they are able, mentoring, and joint proposal development. This represents a significant augmentation to our development program.

Selection Process. The Berkeley ethos of excellence in scholarship, teaching and service is guaranteed by a deep and rigorous search and selection process for new faculty. Once the campus has approved a search authorization, the Chair must craft both a job posting, and a search plan, both of which are then submitted to the Academic Personnel Office for review, to ensure that the search definition is not prejudicial to attracting as broad and talented pool as possible. OFEW (the Office of Faculty Equity and Welfare) is part of this approval process, to give particular attention to identifying the best women and underrepresented minorities who should apply for the job, and then monitoring their progress throughout each step of the appointment process. Typically, the job posting will appear in 10-20 top journals in the general area, including broad scope scientific journals such as *Science*. The job will also be found on our website, and other key electronic venues. An important means of advertising the job is through NEDHO (Nuclear Engineering Department Heads Organization), a group of approximately 50 department chairs and program leaders.

Once the job has been posted, the departmental search committee will be convened, usually consisting of one or more outside members, to ensure breadth of view. (The draft posting is found on the last page of this document; it is currently under review.) The departmental Academic Personnel Officer attends all meetings, both as a resource for the committee, but also to ensure good process is followed throughout their deliberations, and all university and campus

policies are adhered to. The Department also has a Faculty Equity Adviser, who also monitors and insures the integrity of the search process from the viewpoint of the diversity of the pool. From previous experience, this search can be expected to attract 30-50 candidates; their documentation (cv, bibliography, research and teaching statement, academic records, etc.) is studied thoroughly. Approximately 8 will be selected for more thorough scrutiny, and 6 letters are selected for each of these candidates. The person undergoes an intensive all-day interview, including a colloquium, meetings with all the faculty, and a mock lecture class delivered to a team of approximately 6 graduate students, who submit a report at the end of the interviews on teaching aptitude and ability to communicate with students. After the issuance of the committee report recommending a candidate, the plenary NE faculty will vote. In the case of a favorable outcome, the Chair will append a summary letter, and the portfolio is remitted to the College of Engineering for approval by the Dean. Thereafter, the case goes to the Vice Provost for the Faculty, and if there are no immediate questions, is turned over to the Budget Committee which is responsible for all academic personnel actions on campus. They will convene an *ad hoc* committee to study the case, and make a recommendation back to the Budget Committee. The case then returns to the Vice Provost for the Faculty for his recommendation, which is then sent to the Executive Vice Chancellor and Provost for action.

As further evidence that the search process can be counted on to appoint the best candidates, it should be noted that in 2012, the University allocated one search authorization to the NE department for an Assistant Professorship in neutronics and reactor physics. The committee found that there were two extraordinary, but quite different candidates, [REDACTED], and the University ultimately agreed to appoint both, improving the diversity of the department, as well as a broadening of the neutronics competency into high performance computing, algorithms and methods development.

Management Structure. The faculty development program will be administered by the PI and co-PI, who will be members of the specially tailored mentoring committee for the new Assistant Professor. All funds from this award will be made available to the new faculty member, and no administrative or personnel funds have been budgeted for the mentoring committee within this proposal. The PI will provide additional oversight in his role as Department Chair, and coach the new faculty member on management of the grant. The periodic progress reports will initially be jointly prepared by the PI and the new faculty member, and the financial reports prepared within the existing research support organization within the College of Engineering (COE). Each faculty member within COE has a Research Support Officer (RSO) to assist him or her with grant writing and submission, budgeting, reporting, procurements, hiring, etc. The RSOs are part of a larger entity, ERSO, the Engineering Research Support Organization, which manages most of the research resources within the College.

Evaluation plan. The stated goal of the faculty development grant program developed by the U.S. NRC is to “attract and retain highly qualified junior faculty in academic teaching careers.” The Department of Nuclear Engineering at UC Berkeley has an excellent record in developing junior faculty; in fact all our Assistant Professors within the past 20 years or more were awarded tenure. One of the more recent, Prof. Peter Hosemann, is now a tenured Associate Professor, and Co-PI for this grant. As part of this program, the mentoring committee will provide advice on an informal, as needed basis to the new faculty hire to prepare him or her for advancement to tenure, and this will supplement the standard practice of the University in terms of merit reviews, which occur every two years for Assistant Professors, and a mid-career tenure review.

As part of the mentoring process developed under this grant proposal, the new Assistant Professor will be asked to provide a yearly self-assessment that describes the support of graduate students and undergraduate researchers, research activities, publications and presentations, and service to the University and research community. This yearly self-assessment will be discussed with the mentoring committee, and assist the new faculty member in preparing for his or her merit, mid-career, and tenure reviews.

Cost Sharing. We have secured a commitment from the Dean of the College of Engineering, [REDACTED], to provide \$150,000 over three years in support of the goals of this faculty development grant. The letter is attached as part of this proposal package.

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](#).

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*.

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 address 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.

Automated Standard Application For Payments (ASAP) Procedures

Unless otherwise stated, Recipient payments are made using the Department of Treasury's Automated Standard Application for Payment (ASAP) system, ASAP.gov, through preauthorized electronic funds transfers. To receive payments, Recipients 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 is required to make ASAP withdrawals: (1) ASAP account number – the award number found on the cover sheet of the award; (2) Agency Location Code (ALC) – 31000001; and Region Code. Recipients enrolled in the ASAP system do not need to submit a "Request for Advance or Reimbursement" (SF-270).

II. Audit Requirements

Audits

Organization-wide or program-specific audits are performed in accordance with the Single Audit Act of 1996, as amended, and as implemented by [2 CFR Part 200, Subpart F—AUDIT](#)

REQUIREMENTS. Recipients are subject to the provisions of this subpart if they expend \$750,000 or more in a year in Federal awards. See [2 CFR 200.501](#).

The Form SF-SAC and the Single Audit Reporting packages for fiscal periods ending on or after January 1, 2008 are submitted online, as follows:

1. Create the recipient's 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; and
5. Click "Submit."

Organizations expending less than \$750,000 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

The recipient is responsible for providing documentation to the NRC that tracks each student's progress in achievement of the academic program for which federal funds were provided. This includes: (1) ensuring the service agreement is signed by the student prior to providing support; (2) providing the NRC with student contact information upon student entry into the program, upon completion or withdrawal from the program, and upon request by the NRC; and (3) monitoring the student's fulfillment of the service agreement for the duration of the award. The NRC shall be notified immediately if a student is not fulfilling the academic program or the service agreement.

Grant Performance Metrics

The Office of Management and Budget requires all Federal Agencies providing funding for educational scholarships and fellowships as well as other educational related funding to report on specific metrics. These metrics are part of the Academic Competitiveness Council's (ACC) 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/execomp.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.