

Grant and Cooperative Agreement

CHOOSE ONE:
 COOPERATIVE AGREEMENT
 GRANT

CHOOSE ONE: EDUCATION FACILITIES RESEARCH SDCR TRAINING

1. GRANT/COOPERATIVE AGREEMENT NUMBER NRC-HQ-84-15-G-0047	2. SUPPLEMENT NUMBER M0002	3. EFFECTIVE DATE 06/30/2017	4. COMPLETION DATE
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5. ISSUED TO NAME/ADDRESS OF RECIPIENT (No., Street, City/County, State, Zip) RENSELAER POLYTECHNIC INSTITUTE 110 EIGHTH ST TROY NY 121803522	6. ISSUED BY US NRC - HQ Mailing Address: ACQUISITION MANAGEMENT DIVISION MAIL STOP TWFN-8E06M WASHINGTON DC 20555-0001
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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)
09/30/2015 through 06/29/2020

13A.	AWARD HISTORY	13B.	FUNDING HISTORY
PREVIOUS	\$449,997.00	PREVIOUS	\$449,997.00
THIS ACTION	\$450,000.00	THIS ACTION	\$50,000.00
CASH SHARE	\$0.00	TOTAL	\$499,997.00
NON-CASH SHARE	\$0.00		
RECIPIENT SHARE	\$545,372.00		
TOTAL	\$899,997.00		

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

PURCHASE REQUEST NO.	JOB ORDER NO.	AMOUNT	STATUS
RES-17-0179			

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 ENGERGY 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
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UNITED STATES OF AMERICA	COOPERATIVE AGREEMENT RECIPIENT
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CONTRACTING/GRANT OFFICER M'LITA R. CARR	DATE 06/30/2017	AUTHORIZED REPRESENTATIVE	DATE
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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: 77.008 DUNS Number: 002430742 RES-17-0179</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 "Junior Faculty Development grant application support junior Nuclear Engineering tenure track faculty at RPI"; 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: [REDACTED], [REDACTED]" 2. Block 10, RESEARCH, PROJECT, OR PROGRAM TITLE, delete in its entirety and replace with the following: "Program A: Junior Faculty Development: Loading Fresh Fuel into Our Nuclear Engineering Academic Core; Program B: Junior Faculty Development Grant Application Support Junior Nuclear Engineering Tenure Track Faculty at RPI"; 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. LIST OF CHANGES: Period Of Performance End Date changed from 2018-09-29 00:00:00 to 2020-06-29 00:00:00 Continued ...</p>				

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				UNIT PRICE (E)	AMOUNT (F)
	<p>Total Amount for this Modification: \$450,000.00</p> <p>New Total Amount for this Version: \$450,000.00</p> <p>New Total Amount for this Award: \$899,997.00</p> <p>New Issuing Address:</p> <p style="padding-left: 40px;">US NRC - HQ</p> <p>ACQUISITION MANAGEMENT DIVISION</p> <p>MAIL STOP TWFN-8E06M</p> <p>WASHINGTON DC 20555-0001</p> <p>New Administration Address:</p> <p style="padding-left: 40px;">US NRC - HQ</p> <p>ACQUISITION MANAGEMENT DIVISION</p> <p>MAIL STOP TWFN-8E06M</p> <p>WASHINGTON DC 20555-0001</p> <p>Payment:</p> <p style="padding-left: 40px;">ASAP GRANT FUNDS REIMBURSEMENT SYS</p> <p style="padding-left: 40px;">US TREASURY</p> <p>Period of Performance: 09/30/2015 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 Rensselaer Polytechnic Institute, as described in Attachment B entitled "Program Description."

1. **Program A:** Junior Faculty Development: Loading Fresh Fuel into Our Nuclear Engineering Academic Core
2. **Program B:** Junior Faculty Development Grant Application Support Junior Nuclear Engineering Tenure Track Faculty at RPI

A.2 PERIOD OF GRANT

The effective date of this Grant is:

Program A: Junior Faculty Development: Loading Fresh Fuel into Our Nuclear Engineering Academic Core – The effective date of this grant is September 30, 2015. The estimated completion date of this Grant is September 29, 2018. Funds obligated hereunder are available for program expenditures for the estimated period: September 30, 2015 – September 29, 2018.

Program B: Junior Faculty Development Grant Application Support Junior Nuclear Engineering Tenure Track Faculty at RPI – 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 \$695,811.00 for the three year period inclusive of \$245,814.00 in cost share. NRC hereby obligates the amount of \$449,997.00 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 \$749,558.00 for the three year period; inclusive of \$299,558.00 in cost share. NRC hereby obligates the amount of \$50,000.00 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: \$449,997.00
- 2. Total Obligated Amount: \$449,997.00
- 3. Cost-Sharing Amount: \$245,814.00
- 4. Activity Title: Junior Faculty Development: Loading Fresh Fuel into Our Nuclear Engineering Academic Core
- 5. NRC Project Officer: Nancy Hebron-Isreal
- 6. DUNS No.: 002430742

Category	Year 1	Year 2	Year 3	Total
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total	\$142,148.33	\$143,322.33	\$144,529.34	\$430,000.00

Program B

- 1. Total Estimated NRC Amount: \$450,000.00
- 2. Total Obligated Amount: \$50,000.00
- 3. Cost-Sharing Amount: \$299,558.00
- 4. Activity Title: Junior Faculty Development Grant Application Support Junior Nuclear Engineering Tenure Track Faculty at RPI
- 5. NRC Project Officer: Nancy Hebron-Isreal
- 6. DUNS No.: 002430742

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. Yr 1-NRC-HQ-60-17-FOA-0001	77.008	\$0.00	\$0.00	\$150,000.00	\$95,961.00	\$
						\$749,558.00
SECTION B - BUDGET CATEGORIES						
6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)	
	(1) Yr 1-NRC-HQ-60-17-FOA-0001	(2) Yr 2-NRC-HQ-60-17-FOA-0001	(3) Yr 3-NRC-HQ-60-17-FOA-0001	(4)		
a.						
k. TOTALS (sum of 6i and 6j)		\$150,000.00	\$150,000.00	\$150,000.00	\$450,000.00	
7. Program Income						

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

ATTACHMENT B - PROJECT DESCRIPTION

Program A: Junior Faculty Development: Loading Fresh Fuel into Our Nuclear Engineering Academic Core

Principal Investigator: [REDACTED]

Strategic hiring and development of junior faculty is critically important to the vitality and future of the nation's academic nuclear engineering programs. The Department of Mechanical, Aerospace, and Nuclear Engineering (MANE) at Rensselaer Polytechnic Institute (Rensselaer) has embarked on a period of dynamic growth and resurgence. The Nuclear Engineering (NE) Program in MANE is the key program that continuously receives strong internal supports for its own growth and resurgence. Key features of the departmental vision and growth plan in the specific context of NE include:

- **developing strategic research thrust areas** that uniquely define Rensselaer in the nuclear engineering community,
- **revising curricula** to match the multidisciplinary teaming and problem solving paradigm necessary for high impact contributions to nuclear energy and safety,
- **revitalizing and deploying major NE facilities** in support of research and teaching,
- **hiring additional junior faculty** into the nuclear program.

The success of this vision ultimately lies in recruiting, hiring, and developing a new core of faculty equipped and empowered for leadership through the 21st century. We propose to continue developing and strengthening our junior faculty development program within the Nuclear Engineering Program.

Nuclear Engineering Program at Rensselaer

As an integral part of MANE, NE is undergoing a renaissance in research expenditure and student enrollment growth. There are currently 126 undergraduate students, 38 graduate students, and 7 Tenure track faculty members affiliated with NE. We are actively search for a tenure-track assistant professor and possibly another position will be available next year both hires will ensure we continue to grow the faculty.

The challenges for the NE Program are: (i) developing research strengths that are unique and vital to the nuclear industry of the nation and (ii) proactively planning for significant growth in the NE student enrollments. How these are done and how they are sustained throughout the 21st century will ultimately depend on how well the new NE faculty are identified, developed, equipped, and empowered.

Defining nuclear focused research thrusts

In order to maintain the strength and vitality of each program, it is necessary for there to be thrust areas that are clearly identified with each. At the same time, those thrusts should be consistent with the overall strategic foci articulated in the Rensselaer Plan. For NE, the thrust areas will be:

Nuclear Thermal Hydraulics – A traditional strength of our NE Program has been thermal hydraulics we currently have one senior faculty who is very well known and respected in the community working in this area. This is a very important area related to design and safety of Nuclear Power. The new hire will strengthen the area and will lead it in the future.

Nuclear Criticality Safety – This area is very important to safe operation of the nuclear enterprise and requires core skills in radiation transport. We have the strongest program in Nuclear Data Measurement that utilizes the Gaertner LINAC center. The accelerator facility is undergoing a \$10M upgrade sponsored by DOE. Major part of the work at the center is related to and sponsored by the DOE Nuclear Criticality Safety program.

Medical imaging – Though not in the main stream of traditional NE, medical imaging is a highly visible and important field led by nuclear engineers. This work interfaces seamlessly with a broader campus-wide initiative on haptics and virtual surgery being led by faculty in MANE.

One can readily see that these three thrusts combine existing strengths of NE within MANE. More importantly, they represent the key areas in which we can contribute to the future of nuclear engineering in very meaningful and lasting ways. While specific research topics and funding will change with time, these broad areas can define NE at Rensselaer for decades to come.

Major nuclear engineering facilities

There are two unique NE facilities at Rensselaer, the LINAC and the RCF. Both facilities present strategic opportunities. The LINAC has potential for both research and teaching, while the RCF can become a national focal point in nuclear engineering education.

LINAC - The Gaertner Linear Accelerator Center has a world-class reputation in neutron interactions research. It is used as an intense pulsed neutron source capable of emitting 3×10^{13} n/s. In 2014 a major refurbishment and upgrade plan supported by about \$12M from DOE was initiated. At the end of this effort it will be the best place to do nuclear data measurements in the US.

RCF – This is a small reactor facility located in Schenectady, NY, approximately thirty minutes from the Rensselaer campus. The fact that the maximum power output of the reactor, ~15W, makes this a unique and powerful teaching tool. Students can reconfigure the fuel rods in a standard laboratory period to study the effects of rod placement and density on power production. The facility is fully instrumented to deliver course over the internet.

Junior Faculty Recruitment and Development Plan

RPI is committed to continue and support the growth of the NE program and authorized the current faculty search.

Funding request and allocation plan

Support is requested from the NRC to provide additional resources and assistance to junior tenure-track assistant professors in the NE Program at Rensselaer. Our specific request is for \$150,000 per year for a period of three years. The total request is then for \$450,000 over three years. This includes a base funding at a rate of \$100,000 per year for three years and an additional **\$50,000 per year fully matched by cost share from Rensselaer.** ***The cost share will provide junior faculty with tuition and stipend support of research graduate assistants.***

Rensselaer offers highly competitive compensation and start-up packages to those individuals identified as the best people who best fit our programs and goals. It is not possible, however, to provide them with everything that would place them far ahead of their peers in a very short time.

For this reason, the proactive initiative of the NRC through this Faculty Development Grant program will be a tremendous help to NE Programs across the nation. To this end, the funds provided to the tenure-track assistant professors will be used primarily for: travel for junior faculty and their students to attend conferences, to perform experiments at national laboratories, and to develop important and lasting research collaborations, lab equipment and supplies for experimental work, summer support both for the graduate students and for the individual junior faculty, and support of PhD students to assist junior faculty in the development or enhancement of their careers as professors and researchers. The funds will primarily support a new hire starting at the fall semester 2015.

Comparison of the items identified in this list above with the support provided in §3.4 shows that the NRC support will couple very well with that provided by Rensselaer. In this regard then, the NRC joins Rensselaer (and other universities) in providing an important nurturing environment for the development of next generation leaders in nuclear engineering.

Recruitment and marketing strategies

The Faculty Development Program will become a highlight of the faculty recruitment effort in the Nuclear Engineering Program. The recruitment and marketing activities associated with this program will include:

- ***A web page*** devoted to information on the Faculty Development Program as part of the faculty hire strategies to attract excellent candidates. This page would bring attentions to potential candidates regarding the external support resource from NRC in addition to the departmental start-up package for their early career development.
- ***A color brochure***, suitable for printing, containing faculty hire/application information. This brochure will be distributed electronically or in hard copy to (identified) prospective applicants in other institutions.
- ***Advertisement of faculty hiring opportunities*** through national conferences of the American Nuclear Society, Health Physics Society, and other relevant professional meetings.
- ***Faculty recruiting visits to other universities***. NE faculty members are encouraged to include information on new faculty hire when traveling to other universities.
- ***Promotion of women and minority hires in nuclear engineering***. A special effort will be made to identify potential candidates, who graduated from Historically Black Colleges and Universities (HBCUs) and Hispanic Serving Institutions (HSIs). The Department has a current initiative to institutionalize its faculty recruiting efforts with HBCUs and HSIs. We will also work with RPI NE alumni working in other universities to help identify women faculty candidates when they are in the final stage of their PhD students and would like to pursue a faculty career.

Selection/Hiring

Faculty hiring and subsequent tenure and promotions are arguably the most important functions in the life of a university department. The decisions made during these processes permanently affect the lives not only of the individual faculty members, but of the university and all of the students with whom those faculty interact. In general, faculty hiring within MANE is done subject to the following principles: excellence, commitment, investment, and value/respect.

Within this context, there are a number of criteria for selection of our junior faculty. Expressed specifically in terms of the NE Program within MANE, we continually seek faculty candidates who have:

- **foundational expertise** in an area of importance to nuclear engineering with the flexibility and desire to contribute to and ultimately lead existing and future thrust areas,
- **excellent credentials** including education, research, publications, references, *etc.*,
- **strong communication skills** for both teaching as well as engaging in critical research, development and technology communities,
- **multidisciplinary teaming and problem solving skills** consistent with the Department and NE Program vision articulated in §2, and
- **a positive and engaging personality** in order to enhance a mutually satisfying and supportive MANE community.

Currently, an active search for a tenure-track professor is being taken. One candidate has been identified and an offer is in progress. The candidate is a reactor safety expert. The hiring offer negotiation is underway. The requested grant will be used to support the new hire, which is expected to join Rensselaer in August 2015. The targeted recipient exactly meets all of the criteria identified above.

Start-up support

Consistent with the principles of commitment and investment, all faculty hires have been or will be provided with highly competitive start-up packages including: **competitive salary and benefits** package, two months **summer salary** for two years (for a total of four months), two years of **graduate research student support** for two students (for a total of four years) including funding for summer support, and a **generous research account** that provides funding for equipment, travel, and other research expenses which the individual may use over the first three years of her/his appointment.

Mentoring

Investment in faculty development and growth is a critical focus in MANE. As part of MANE's commitment to seeing every one of its tenure-track assistant professors successfully progress through tenure and promotion and beyond, we have instituted a formal mentoring process for each faculty member. Three full professors are assigned to the mentorship team of each junior faculty, as well as one associate professor. Mentoring teams are charged with meeting with the individual being mentored at least once a semester. The intent is proactive mentorship in which each mentor takes responsibility for a definitive action to help his or her charge. The mentoring team is then tasked with preparing a written report to the Department Head outlining not only the progress of the junior faculty member, but also specific actions taken on behalf of the individual. Note that mentorship teams operate in tandem with the Department Head, who is also acting as an additional mentor for every faculty member in the Department.

Assessment and Evaluation

As noted in §3, the success of this program must be defined in terms of the success of the individual Targeted Recipients as well as the NE Program in general. After all, the two are integrally linked. This section is used to identify and explain some of the key metrics and assessment tools that will be used at both the programmatic as well as the individual levels.

Performance metrics

The following performance metrics apply to individual faculty in a program or department as well as the program/department as a whole. The last metric, rankings, obviously does not apply to individual faculty. In total, they represent a broad but focused picture of the quality and depth of a department's or a university's programs.

- **Scholarly output:** Including both numbers as well as quality and relevance of publications; good but imperfect metrics of quality include journal impact factors and numbers of citations.
- **Placement of graduates:** In important leadership tracks across industry, government and academe is a direct recognition of the quality of our education and research programs.
- **Research expenditures:** This metric is important as a measure of the national recognition of expertise and excellence of individuals and teams within the NE Program.
- **Faculty recognition and prominence:** Requests to serve on national advisory panels, election as society fellows, membership in the National Academies and other such recognitions are important milestones of faculty and program progress.
- **Rankings:** NE at Rensselaer is now consistently ranked the Top 14 by USNWR. We are constantly working on improving our recognition and visibility.

Faculty evaluations

Annual faculty evaluations by the MANE Department Head are part of the annual salary adjustment process. The process entails each faculty member submitting a report quantifying research and teaching activities as well as identifying key contributions made in the area of *citizenship*. These are defined as activities that contribute to the life, growth, and vision of the Program/Department. Faculty are required to simultaneously submit a five-year plan. This is reviewed by the Department Head and discussed with the faculty member. The primary foci of the discussions are to be on how well the faculty member met goals set in the previous year and developing understandings of the goals of the faculty member for the next year. For the tenure-track assistant professor, this meeting is a mechanism through which the mentoring process is formalized and transmitted to all levels of the administration. These meetings and discussions track the junior faculty member's progress in the run-up to tenure and promotion.

Tenure and promotion

Requirements for tenure and promotion to associate professor are based on: i) **solid to excellent research** as quantified by external evaluation by senior colleagues in the field, external research funding, archival journal publications and conference papers, and supervision of at least one student to completion of the Ph.D., ii) **solid to outstanding teaching** with evidence provided through teaching evaluations by students, student reference letters, and observations from faculty mentors (it is policy that substandard teaching is grounds for denying tenure); and iii) **demonstrated potential for leadership and collaboration** through participation in multi-investigator research proposals and grants, and contribution to the life of the Department.

Institutional Support

Throughout this document, specific references have been made to tangible and intangible mechanisms for supporting NE at Rensselaer and the junior faculty being hired into that Program. Here, at the end of this request, we summarize these forms of institutional support:

- **presidential commitment and support:** i) The President and Board of Trustees have provided the School of Engineering with fully funded faculty slots along with fully budgeted start-up funds to attract the best candidates available to our NE program. ii) It should not be under appreciated that as the former Chair of the NRC, our President is fully committed to an excellent and thriving NE Program.
- **school of engineering commitment and support:** As with the President, the Dean of Engineering has committed fully funded faculty slots (with highly competitive start-up funds) for growth of the NE Program.
- **departmental commitment and support:** The singular focus over the past two years has been the revitalization of NE. In so doing, there has been significant commitment of MANE resources to grow and revitalize NE. ii) In general, the Program Head and Department Head have instituted support and mentoring mechanisms for junior faculty.

Program B: Junior Faculty Development Grant Application Support Junior Nuclear Engineering Tenure Track Faculty at RPI

Principal Investigator: [REDACTED]

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- ***Faculty recruiting visits to other universities.*** NE faculty members are encouraged to include information on new faculty hire when traveling to other universities.
- ***Promotion of women and minority hires in nuclear engineering.*** A special effort will be made to identify potential candidates, who graduated from Historically Black Colleges and Universities (HBCUs) and Hispanic Serving Institutions (HSIs). The Department has a current initiative to institutionalize its faculty recruiting efforts with HBCUs and HSIs. We will also work with RPI NE alumni working in other universities to help identify women faculty candidates when they are in the final stage of their PhD students and would like to pursue a faculty career.
- ***A web page*** devoted to information on the Faculty Development Program as part of the faculty hire strategies to attract excellent candidates. This page would bring attentions to potential candidates regarding the external support resource from NRC in addition to the departmental start-up package for their early career development.

- **A color brochure**, suitable for printing, containing faculty hire/application information. This brochure will be distributed electronically or in hard copy to (identified) prospective applicants in other institutions.

Selection/Hiring

Faculty hiring and subsequent tenure and promotions are arguably the most important functions in the life of a university department. The decisions made during these processes permanently affect the lives not only of the individual faculty members, but of the university and all of the students with whom those faculty interact. In general, faculty hiring within MANE is done subject to the following principles: excellence, commitment, investment, and value/respect.

Within this context, there are a number of criteria for selection of our junior faculty. Expressed specifically in terms of the NE Program within MANE, we continually seek faculty candidates who have:

- **foundational expertise** in an area of importance to nuclear engineering with the flexibility and desire to contribute to and ultimately lead existing and future thrust areas,
- **excellent credentials** including education, research, publications, references, *etc*,
- **strong communication skills** for both teaching as well as engaging in critical research, development and technology communities,
- **multidisciplinary teaming and problem solving skills** consistent with the Department and NE Program vision articulated in §2, and
- **a positive and engaging personality** in order to enhance a mutually satisfying and supportive MANE community.

Currently, an active search for a tenure-track professor is ongoing, several applications were already received. Our goal is to identify the potential candidate as soon as possible and use the NRC faculty development grant to help support the faculty.

Start-up support

Consistent with the principles of commitment and investment, all faculty hires have been or will be provided with highly competitive start-up packages including: **competitive salary and benefits** package, two months **summer salary** for two years (for a total of four months), two years of **graduate research student support** for two students (for a total of four years) including funding for summer support, and a **generous research account** that provides funding for equipment, travel, and other research expenses which the individual may use over the first three years of her/his appointment.

Mentoring

Investment in faculty development and growth is a critical focus in MANE. As part of MANE's commitment to seeing every one of its tenure-track assistant professors successfully progress through tenure and promotion and beyond, we have instituted a formal mentoring process for each faculty member. Three full professors are assigned to the mentorship team of each junior faculty, as well as one associate professor. Mentoring teams are charged with meeting with the individual being mentored at least once a semester. The intent is proactive mentorship in which each mentor takes responsibility for a definitive action to help his or her charge. The mentoring team is then tasked with preparing a written report to the Department Head outlining not only

the progress of the junior faculty member, but also specific actions taken on behalf of the individual. Note that mentorship teams operate in tandem with the Department Head, who is also acting as an additional mentor for every faculty member in the Department.

Assessment and Evaluation

As noted in §3, the success of this program must be defined in terms of the success of the individual Targeted Recipients as well as the NE Program in general. After all, the two are integrally linked. This section is used to identify and explain some of the key metrics and assessment tools that will be used at both the programmatic as well as the individual levels.

Performance metrics

The following performance metrics apply to individual faculty in a program or department as well as the program/department as a whole. The last metric, rankings, obviously does not apply to individual faculty. In total, they represent a broad but focused picture of the quality and depth of a department's or a university's programs.

- ***Scholarly output***: Including both numbers as well as quality and relevance of publications; good but imperfect metrics of quality include journal impact factors and numbers of citations.
- ***Placement of graduates***: In important leadership tracks across industry, government and academe is a direct recognition of the quality of our education and research programs.
- ***Research expenditures***: This metric is important as a measure of the national recognition of expertise and excellence of individuals and teams within the NE Program.
- ***Faculty recognition and prominence***: Requests to serve on national advisory panels, election as society fellows, membership in the National Academies and other such recognitions are important milestones of faculty and program progress.
- ***Rankings***: NE at Rensselaer is now consistently ranked the Top 14 by USNWR. We are constantly working on improving our recognition and visibility.

Faculty evaluations

Annual faculty evaluations by the MANE Department Head are part of the annual salary adjustment process. The process entails each faculty member submitting a report quantifying research and teaching activities as well as identifying key contributions made in the area of citizenship. These are defined as activities that contribute to the life, growth, and vision of the Program/Department. Faculty are required to simultaneously submit a five-year plan. This is reviewed by the Department Head and discussed with the faculty member. The primary foci of the discussions are to be on how well the faculty member met goals set in the previous year and developing understandings of the goals of the faculty member for the next year. For the tenure-track assistant professor, this meeting is a mechanism through which the mentoring process is formalized and transmitted to all levels of the administration. These meetings and discussions track the junior faculty member's progress in the run-up to tenure and promotion.

Tenure and promotion

Requirements for tenure and promotion to associate professor with tenure are based on: i) ***solid to excellent research*** as quantified by external evaluation by senior colleagues in the field, external research funding, archival journal publications and conference papers, and supervision of at least one student to completion of the Ph.D., ii) ***solid to outstanding teaching*** with evidence provided through teaching evaluations by students, student reference letters, and

observations from faculty mentors (it is policy that substandard teaching is grounds for denying tenure); and iii) **demonstrated potential for leadership and collaboration** through participation in multi-investigator research proposals and grants, and contribution to the life of the Department.

Institutional Support

Throughout this document, specific references have been made to tangible and intangible mechanisms for supporting NE at Rensselaer and the junior faculty being hired into that Program. Here, at the end of this request, we summarize these forms of institutional support:

- [REDACTED]
- [REDACTED] with highly competitive start-up funds) for growth of the NE Program.
- **DEPARTMENTAL COMMITMENT AND SUPPORT:** The singular focus over the past two years has been the revitalization of NE. In so doing, there has been significant commitment of MANE resources to grow and revitalize NE. ii) In general, the Program Head and Department Head have instituted support and mentoring mechanisms for junior faculty.

These have accurately portrayed broad institutional commitment at all levels to support NE at Rensselaer. We feel very strongly, therefore, that our vision and strategy directly aligns with the goals of the NRC Faculty Development Program. We respectfully request, therefore, full funding of this grant proposal.

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*.

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.

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.