July 26, 2016

ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY (FFO)
Disaster Resilience (DR) Research Grants Program

EXECUTIVE SUMMARY

- **Federal Agency Name:** National Institute of Standards and Technology (NIST), United States Department of Commerce (DoC)

- **Funding Opportunity Title:** Disaster Resilience (DR) Research Grants Program

- **Announcement Type:** Initial

- **Funding Opportunity Number:** 2016-NIST-DR-01

- **Catalog of Federal Domestic Assistance (CFDA) Number:** 11.609, Measurement and Engineering Research and Standards

- **Dates:** Applications must be received at Grants.gov no later than 11:59 p.m. Eastern Time, Friday, September 23, 2016. Applications received after this deadline will not be reviewed or considered. Applicants should be aware, and factor in their application submission planning, that the Grants.gov system is expected to be closed for routine maintenance at these times: from 12:01 a.m. Eastern Time, Saturday, August 20, 2016 until Monday, August 22, 2016 at 6:00 a.m. Eastern Time; and from 12:01 a.m. Eastern Time, Saturday, September 17, 2016 until Monday, September 19, 2016 at 6:00 a.m. Eastern Time. Applications cannot be submitted when Grants.gov is closed. NIST expects to complete its review, selection of successful applicants, and award processing by January 2017. NIST expects the earliest start date for awards under this FFO to be February 6, 2017.

Applicants are strongly urged to read Section IV.2.b., Attachment of Required Application Documents, found on pages 11 and 12 of this FFO, with great attention. Applicants should carefully follow the instructions and recommendations regarding attachments and using Grants.gov's Download Submitted Applications feature to check that all required attachments were contained in their submission. Applications submitted without the required documents will not pass the Initial Administrative Review, described in Section V.3.a. of this FFO.

When developing your submission timeline, please keep in mind that: (1) all applicants are required to have a current registration in the electronic System for Award Management (SAM.gov); (2) the free annual registration process in the SAM.gov (*see* Section IV.3. and Section IV.7.a.(1).b. of this FFO) often takes between three and five business days and may take as long as two weeks; (3)

electronic applicants are required to have a current registration in Grants.gov; and (4) applicants using Grants.gov will receive email notifications over a period of up to two business days as the application moves through intermediate systems before the applicant learns via a validation or rejection notification whether NIST has received the application. (*See* http://www.grants.gov for full information on application and notification through Grants.gov). Please note that a federal assistance award cannot be issued if the designated recipient's registration in the System for Award Management (SAM.gov) is not current at the time of the award.

- **Application Submission Address:** Applications must be submitted using Grants.gov.

- **Funding Opportunity Description:**   The Disaster Resilience (DR) Research Grants Program seeks applications from eligible applicants to conduct research aimed at advancing the principles of resilience in building design and building codes and standards. Research proposals must support the overall effort of developing science-based building codes by evaluating potential technologies and architectural design criteria to improve disaster resilience in the built environment. Research projects must be aligned with existing NIST Engineering Laboratory (EL) Disaster Resilience programs, as described in Section I. of this FFO.

- **Anticipated Amounts:**   In FY 2016, NIST anticipates that up to approximately $3,000,000 may be available for NIST to fund new DR Research Grants Program projects. NIST anticipates funding five to fifteen awards in the range of $300,000 to $1,000,000 each with project performance periods of up to three (3) years, consistent with the multi-year funding policy (see Section II.2. of this FFO).

- **Funding Instrument:** Cooperative agreement.

- **Who Is Eligible:** Eligibility for all programs listed in this FFO is open to all non-Federal entities. Eligible applicants include institutions of higher education, non-profit organizations, for-profit organizations, state and local governments, Indian tribes, hospitals, foreign public entities, and foreign governments. NIST is not able to accept an application from an individual unaffiliated with a sponsoring applicant organization**.**

- **Cost Sharing Requirements:** Matching funds are not required for this FFO.

- **Public Website, Frequently Asked Questions (FAQs) and Webinar:** NIST has a public website, http://www.nist.gov/el/disresgoal.cfm that provides information pertaining to this Funding Opportunity[1]. NIST anticipates that a "Frequently Asked Questions" section or other resource materials will be maintained and updated on the website as needed to provide additional guidance and clarifying information that

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[1] Refer to Section VII. of this FFO, Federal Awarding Agency Contacts, Programmatic and Technical Questions, if you seek the information at this link and it is no longer working or you need more information

may arise related to this Funding Opportunity. Any amendments to this FFO will be announced through Grants.gov.

Applicants must submit all questions pertaining to this Funding Opportunity in writing to millie.glick@nist.gov. Questions submitted to NIST may be posted on the public website, http://www.nist.gov/el/disresgoal.cfm. Alternatively, applicants may ask questions during the informational public webinar as described in the next paragraph.

NIST will hold a webinar on August 25, 2016 to provide general information regarding this FFO, offer general guidance on preparing applications, and answer questions. Proprietary technical discussions about specific project ideas will not be permitted and NIST staff will not critique or provide feedback on specific project ideas while they are being developed by an applicant or brought forth during the Webinar or at any time before the deadline for all applications. However, questions about the DR Research Grants Program, eligibility requirements, evaluation and award criteria, selection process, and the general characteristics of a competitive application can be addressed at the Webinar and by e-mail to millie.glick@nist.gov as described in the previous paragraph. There is no cost to attend the Webinar, but participants must register in advance. Participation in the Webinar is not required, and will not be considered in the application review and selection process. Additional information on the DR Research Grants Program and the Webinar is available at http://www.nist.gov/el/disresgoal.cfm.

Table of Contents

FULL ANNOUNCEMENT TEXT

I. Program Description

The statutory authority for the Disaster Resilience (DR) Research Grants Program 15 U.S.C. § 272(b)(4), (b)(5), (b)(8), (b)(10), (c)(16) and (c)(17).

In April 2016, President Obama proclaimed April 2016 as the National Building Safety

Month. The President's proclamation highlights the clear national commitment to advancing resilience in the built environment, from codes and standards to building design and construction[2]. As underscored in the President's proclamation, working with communities to build resilient infrastructure to prepare for the impacts of disaster has been a long standing focus for this Administration. The National Academies described disaster resilience as "a national imperative" in its 2012 report.[3] As such, research and development programs within Federal agencies, including NIST, have been targeting advancing disaster resilience in support of the President's national agenda for this topical area.

The Disaster Resilience (DR) Research Grants Program seeks applications from eligible applicants to conduct research aimed at advancing the principles of resilience in building design and building codes and standards. Research proposals must support the overall effort of developing science-based building codes by evaluating potential technologies and architectural design criteria to improve disaster resilience in the built environment. Research projects must be aligned with existing NIST Engineering Laboratory (EL) Disaster Resilience programs, as described below.:

a. **National Windstorm Impact Reduction Program and Structural Performance under Multi-Hazard Program**. These two programs support research to improve the understanding of windstorms (hurricanes, tornadoes, thunderstorms, and others) and coastal flooding events (storm surge and tsunamis), their impacts, and impact mitigation, including: (1) the quantification of these hazards and associated loads, including by computational fluid dynamics techniques; (2) the quantification of the impacts of windstorms, including identification of causes and trends in loss of life from windstorms; and (3) the design, construction, and retrofit of buildings, structures, and lifelines to resist these hazards.

b. **Disaster and Failure Studies Program.** This program's research is in the areas of disaster and failure studies, and includes the development of innovative measurement methods and technologies to collect or to characterize the measurement uncertainty of data from field studies.

c. **Wildland Urban Interface Fire Program.** This program develops, advances, and deploys measurement science to quantify the generation of vegetative and structural firebrands, investigate the ignition of fuels by firebrands within communities, and better characterize the exposure of structures to firebrand flux in order to reduce the risk of fire spread in wildland-urban interface (WUI) communities.

d. **National Earthquake Hazards Reduction Program.** The program conducts research in the areas of earthquake impact reduction (including engineering for

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[2] https://www.whitehouse.gov/the-press-office/2016/04/29/presidential-proclamation-national-building-safety-month-2016

[3] http://www.nap.edu/catalog/13457/disaster-resilience-a-national-imperative

existing buildings and physical infrastructure/lifelines). Specific areas of research include (1) developing improved analytical models and simulation capabilities to evaluate existing building vulnerabilities and collapse risk under strong earthquake shaking through analytical and/or experimental studies, including study of older non-ductile masonry, structural steel or reinforced concrete buildings or building elements; (2) developing potential cost effective solutions to mitigate earthquake vulnerabilities in existing buildings through the use of new materials, innovative practices or other means; (3) developing improved techniques, tools, and guidelines to assess civil lifelines (e.g., underground water pipes) at both the individual component and system scales to improve resilience; and (4) developing improved techniques, tools, and guidelines for modeling and evaluating soil liquefaction effects on buildings and civil lifeline systems to mitigate their impact. Recent NIST research reports, workshop reports as well as published research-needs studies can be found on http://www.nehrp.gov.

Specifically, each Application (*see* Section IV.2.a.(6) of this FFO, Technical Proposal) must:

1. Identify the specific disaster resiliency problem that the applicant proposes to solve that aligns with or is complementary to one of the existing EL disaster resilience programs, explain the problem's difficulties, and describe the benefits that would accrue if the problem were solved.
2. Propose a technical approach that directly addresses the identified problem.
3. Provide a schedule of milestones for the overall project that includes metrics for measuring the success of the proposed efforts, and include plans for publication in professional literature and for technology transfer.
4. Describe the qualifications, proposed roles, and level of planned effort of the project participants, including the proposed role of the project lead.

Awards made under this announcement may include financial support for recipients to host and/or participate in special sessions at conferences, workshops, technical research meetings and other education and outreach activities relevant to and in support of their technical proposal.

Additional information on the DR Research Grants Program may be found at http://www.nist.gov/el/disresgoal.cfm[4].

II. **Federal Award Information**

1. **Funding Instrument.** The funding instrument that will be used is a cooperative agreement. The nature of NIST's "substantial involvement" is described in Chapter 5.C of the Department of Commerce (DoC) Grants and Cooperative Agreements Manual, which is available at http://go.usa.gov/SNJd. Please note the Department

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[4] Refer to Section VII. of this FFO, Federal Awarding Agency Contacts, Programmatic and Technical Questions, if you seek the information at this link and it is no longer working or you need more information

of Commerce Grants and Cooperative Agreements Manual is expected to be updated after publication of this funding announcement. Refer to Section VII. of this FFO, Federal Awarding Agency Contacts, Grant Rules and Regulations, if you seek the information at this link and it is no longer working or you need more information.

2. **Multi-Year Funding Policy.** When an application for a multi-year award is approved, funding will usually be provided for only the first year of the project. If a project is selected for funding, NIST has no obligation to provide any additional funding in connection with that award. Continuation of an award to increase funding or extend the period of performance is at the sole discretion of NIST. Continued funding will be contingent upon satisfactory performance, continued relevance to the mission and priorities of the individual DR Research Grants Programs, and the availability of funds.

3. **Funding Availability**. The availability of funds depends upon actual authorization of funds, programmatic needs, and other costs expected to be incurred by individual divisions within each laboratory, center, or office. If funds are identified as available for financial assistance, those funds may be awarded to highly ranked applications as determined by the applicable program's review and selection process (*see* Section V.2. of this FFO).

In FY 2016, NIST anticipates that up to approximately $3,000,000 may be available for NIST to fund new DR Research Grants Program projects. NIST anticipates funding five to fifteen awards in the range of $300,000 to $1,000,000 each with project performance periods of up to three (3) years, consistent with the multi-year funding policy (*see* Section II.2. of this FFO).

III. Eligibility Information

1. Who Is Eligible. Eligibility for all programs listed in this FFO is open to all non-Federal entities. Eligible applicants include institutions of higher education, non-profit organizations, for-profit organizations, state and local governments, Indian tribes, hospitals, foreign public entities, and foreign governments. NIST is not able to accept an application from an individual unaffiliated with a sponsoring applicant organization.

2. Cost Sharing or Matching. Matching funds are not required for this FFO.

IV. Application and Submission Information

1. **Address to Request Application Package.** The application package is available at www.grants.gov under Funding Opportunity Number 2016-NIST-DR-01.

2. **Content and Format of Application Submission**

a. **Required Forms and Document**

The Application must contain the following:

(1) SF-424, Application for Federal Assistance. The SF-424 must be signed by an authorized representative of the applicant organization.

- SF-424, Item 12, should list the FFO number 2016-NIST-DR-01.

- SF-424, Item 18, should list the total Federal budget amount requested for the entire project.

- For SF-424, Item 21, the list of certifications and assurances is contained in the SF-424B.

(2) SF-424A, Budget Information - Non-Construction Programs. The budget should reflect anticipated expenses for the project, considering all potential cost increases, including cost of living adjustments.

The Grant Program Function or Activity on Line 1 under Column (a) should be entered as "Measurement and Engineering Research and Standards". The Catalog of Federal Domestic Assistance Number on Line 1 under Column (b) should be entered as "11.609".

These sections of the SF-424A should reflect funds for the first year of the award: Section A; Section B; Section C; and Section D. The budget estimate for the second year of the award should be entered in Section E, field 16, column (b). Section E, field 16, column (c) should reflect the third year's budget estimate.

Further details about this form can be can be found at: http://www.grants.gov/web/grants/form-instructions/sf-424a-instructions.html.

(3) SF-424B, Assurances - Non-Construction Programs

(4) CD-511, Certification Regarding Lobbying. Enter "2016-NIST-DR-01" in the Award Number field. Enter the title of the application used in field 15 of the SF-424, or an abbreviation of that title, in the Project Name field.

(5) SF-LLL, Disclosure of Lobbying Activities (if applicable)

(6) Technical Proposal. The Technical Proposal is a document of no more than 10 pages responsive to the program description (*see* Section I. of this FFO) and the evaluation criteria (*see* Section V.1. of this FFO). The Technical Proposal should contain the following information:

(a) **Executive Summary**.   A concise summary/abstract of the proposed effort. The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the project director/principal investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information as NIST may make it available to the public after awards are issued. **The Executive Summary must not exceed one (1) single-sided page and counts toward the page limit of the Technical Proposal**.

(b) **Problems, Solutions and Technical Approach.** This is a description of the problems proposed to be solved, why the problems are difficult, and the alignment with existing NIST Engineering Laboratory Disaster Resilience programs. This section should explain what solutions are needed to overcome the problems, who would benefit from the solutions, and what the anticipated impacts are if the problems are solved. This section should also include a description of the technical approach that the applicant plans to employ to solve the identified problems and to achieve the anticipated impacts.

This section will be evaluated in accordance with the Problems, Solutions and Technical Approach evaluation criteria (see Section V.1.a. of this FFO).

(c) **Statement of Work and Potential Impact of the Results.** This is a complete statement of work to meet the technical approach that directly addresses the problems described in the Problems, Solutions and Impact Statement of the Technical Proposal. The statement of work must include a schedule of milestones for the overall project, the applicant's plan to manage the project tasks, and metrics for measuring the success of the proposed efforts and potential impact of the results. This section should include plans for publication in professional literature and for technology transfer.

This section will be evaluated in accordance with the Statement of Work and Potential Impact of the Results evaluation criteria (see Section V.1.b. of this FFO).

(d) **Qualifications and Experience of Key Personnel and Resources Availability.** This is a description of the qualifications, proposed roles, and level of planned effort of the project participants, including the proposed role of the project leader, key personnel and staff. A resume of the project leader is required (see Section IV.2.a.(9). of this FFO). A description of the

applicant's access to the necessary equipment and facilities to accomplish the proposed objectives should be included.

This section will be evaluated in accordance with the Qualifications and Experience of Key Personnel and Resources Availability evaluation criteria (*see* Section V.1.c. of this FFO).

(7) Budget Narrative. (This does not count toward the page limit). The Budget Narrative must provide a detailed breakdown of each of the object class categories as reflected on the SF-424A. The budget justification should address all of the budget categories (personnel, fringe benefits, equipment, travel, supplies, other direct costs and indirect costs) for which Federal funds are requested. The written justification should include the necessity and the basis for the cost. Proposed funding levels must be consistent with the project scope, and only allowable costs should be included in the budget. Information on cost allowability is available in the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. Part 200 (http://go.usa.gov/SBYh), which apply to awards in this program. Information needed for each category is as follows:

(a) **Personnel** – At a minimum, the budget justification for all personnel should include the following: name, job title, commitment of effort on the proposed project in terms of average number of hours per week or percentage of time, salary rate, total direct charges on the proposed project, description of the role of the individual on the proposed project and the work to be performed.

(b) **Fringe Benefits** – Fringe benefits should be identified separately from salaries and wages and based on rates determined by organizational policy. The items included in the fringe benefit rate (e.g., health insurance, parking, etc.) should not be charged under another cost category.

(c) **Equipment** – Equipment is defined as an item of property that has an acquisition cost of $5,000 or more (unless the organization has established lower levels) and an expected service life of more than one year. Any items that do not meet the threshold for equipment can be included under the supplies line item. The budget justification should list each piece of equipment, the cost, and a description of how it will be used and why it is necessary to the successful completion of the proposed project. Please note that any general use equipment (computers, etc.) charged directly to the award should be allocated to the award according to expected usage on the project.

(d) **Travel** –For travel costs required by the recipient to complete the project, the budget justification for travel should include the following: destination; names and number of people traveling; dates and/or duration; mode of transportation, lodging and subsistence rates; and description of how the

travel is directly related to the proposed project. For travel that is yet to be determined, please provide best estimates based on prior experience. If a destination is not known, an approximate amount may be used with the assumptions given for the location of the meeting.

(e) **Supplies** – Provide a list of each supply, and the breakdown of the total costs by quantity or unit of cost. Include the necessity of the cost for the completion of the proposed project.

(f) **Contracts/Subawards** – Each contract or subaward should be treated as a separate item. Describe the services provided and the necessity of the subaward or contract to the successful performance of the proposed project. Contracts are for obtaining normal goods and services. Subawardees perform part of the project scope of work. For each subaward, applicants must provide budget detail justifying the cost of the work performed on the project.

(g) **Other Direct Costs** – For costs that do not easily fit into the other cost categories, please list the cost, and the breakdown of the total costs by quantity or unit of cost. Include the necessity of the cost for the completion of the proposed project. Only allowable costs can be charged to the award.

This section will be evaluated in accordance with the Budget Narrative evaluation criteria (see Section V.1. d. of this FFO).

(8) Indirect Cost Rate Agreement. If indirect costs are included in the proposed budget, provide a copy of the approved negotiated agreement if this rate was negotiated with a cognizant Federal audit agency. If the rate was not established by a cognizant Federal audit agency, provide a statement to this effect. If the successful applicant includes indirect costs in the budget and has not established an indirect cost rate with a cognizant Federal audit agency, the applicant will be required to obtain such a rate in accordance with the Department of Commerce Financial Assistance Standard Terms and Conditions (http://go.usa.gov/hKbj).

Alternatively, in accordance with 2 C.F.R. § 200.414(f), applicants that have never received a negotiated indirect cost rate may elect to charge indirect costs to an award pursuant to a de minimis rate of 10 percent of modified total direct costs (MTDC), in which case a negotiated indirect cost rate agreement is not required. Applicants proposing a 10 percent de minimis rate pursuant to 2 C.F.R. § 200.414(f) should note this election as part of the budget and budget narrative portion of the application.

(9) Resumes of Key Personnel. A resume for the project leader is required. This individual is considered key personnel to the project. Resumes of additional key personnel may be supplied. Resumes are limited to two pages per individual.

(10) Data Management Plan. In accordance with the Office of Science and Technology Memorandum for the Heads of Executive Departments and Agencies of February 22, 2013[5], *Increasing Access to the Results of Federally Funded Scientific Research*, and as implemented through NIST Policy 5700.00[6], *Managing Public Access to Results of Federally Funded Research,* and NIST Order 5701.00[7], *Managing Public Access to Results of Federally Funded Research*", applicants should include a Data Management Plan (DMP).

The DMP is a supplementary document of not more than two pages that must include, at a minimum, a summary of proposed activities that are expected to generate data, a summary of the types of data expected to be generated by the identified activities, a plan for storage and maintenance of the data expected to be generated by the identified activities, and a plan describing whether and how data generated by the identified activities will be reviewed and made available to the public. As long as the DMP meets these NIST requirements, it may take the form specified by the applicant's institution or some other entity (e.g., the National Science Foundation[8] or the National Institutes of Health[9]).

All applications for activities that will generate scientific data using NIST funding are required to adhere to a DMP or explain why data sharing and preservation are not within the scope of the project.

For the purposes of the DMP, NIST adopted the definition of "research data" at 2 C.F.R. § 200.315(e)(3) (available at http://go.usa.gov/3sZvQ).

Reasonable costs for data preservation and access may be included in the application.

The sufficiency of the DMP will be considered as part of the administrative review (*see* Section V.3.a. of this FFO); however, the DMP will not be evaluated against any evaluation criteria.

b. Attachment of Required Documents

Items IV.2.a.(1) through IV.2.a.(5) above are part of the standard application package in Grants.gov and can be completed through the download application process.

Items IV.2.a.(6) through IV.2.a.(10) must be completed and attached by clicking on "Add Attachments" found in item 15 of the SF-424, Application for Federal

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[5] https://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf
[6] http://www.nist.gov/open/upload/Final-P-5700.pdf
[7] http://www.nist.gov/open/upload/Final-O-5701_0.pdf
[8] http://www.nsf.gov/bfa/dias/policy/dmp.jsp
[9] http://grants.nih.gov/grants/policy/data_sharing/data_sharing_guidance.htm

Assistance. This will create a zip file that allows for transmittal of the documents electronically via Grants.gov.

Applicants should carefully follow specific Grants.gov instructions at www.grants.gov to ensure the attachments will be accepted by the Grants.gov system. *A receipt from Grants.gov indicates only that an application was transferred to a system. It does not provide details concerning whether all attachments (or how many attachments) transferred successfully.* Applicants using Grants.gov will receive a series of e-mail messages over a period of up to two business days before learning whether a Federal agency's electronic system has received its application.

Applicants are strongly advised to use Grants.gov's Download Submitted Applications option to check that their application's required attachments were contained in their submission.

After submitting the application, follow the directions found in the Grants.gov Online Users Guide (http://go.usa.gov/cjaEh). Click first on Applicants; then click on Applicant Actions; go then to the "Check My Application Status" option, and choose Download Submitted Applications.

If any, or all, of the required attachments are absent from the submission, follow the attachment directions found above, resubmit the application, and check again for the presence of the required attachments.

Applicants can track their submission in the Grants.gov system by following the procedures at the Grants.gov site (http://go.usa.gov/cjamz). It can take up to two business days for an application to fully move through the Grants.gov system to NIST.

NIST uses the Tracking Numbers assigned by Grants.gov, and does not issue Agency Tracking Numbers.

c. **Application Format**

  (1) **Paper, E-mail and Facsimile (fax) Submissions.** Will not be accepted.

  (2) **Figures, Graphs, Images, and Pictures.** Should be of a size that is easily readable or viewable and may be landscape orientation.

  (3) **Font.** Easy to read font (12-point minimum). Smaller type may be used in figures and tables but must be clearly legible.

  (4) **Page Limit.** The Technical Proposal for Applications is limited to ten (10) pages. Resumes are also excluded from the page count. Resumes are limited

to two pages each. The Data Management Plan is also excluded from the page count.

(5) **Page size.** 21.6 centimeters by 27.9 centimeters (8 ½ inches by 11 inches).

(6) **Application language.** English.

d. **Application Replacement Pages.** Applicants may not submit replacement pages and/or missing documents once an application has been submitted. Any revisions must be made by submission of a new application that must be received by NIST by the submission deadline.

e. **Pre-Applications.** There are no pre-applications with this FFO.

f. **Certifications Regarding Federal Felony and Federal Criminal Tax Convictions, Unpaid Federal Tax Assessments and Delinquent Federal Tax Returns.** In accordance with Federal appropriations law, an authorized representative of the selected applicant(s) may be required to provide certain pre-award certifications regarding federal felony and federal criminal tax convictions, unpaid federal tax assessments, and delinquent federal tax returns.

3. **Unique Entity Identifier and System for Award Management (SAM).** Pursuant to 2 C.F.R. part 25, applicants and recipients (as the case may be) are required to: (i) be registered in SAM before submitting its application; (ii) provide a valid unique entity identifier in its application; and (iii) continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency, unless otherwise excepted from these requirements pursuant to 2 C.F.R. § 25.110. NIST will not make a Federal award to an applicant until the applicant has complied with all applicable unique entity identifier and SAM requirements and, if an applicant has not fully complied with the requirements by the time that NIST is ready to make a Federal award pursuant to this FFO, NIST may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for making a Federal award to another applicant.

4. **Submission Dates and Times.**
Applications must be received at Grants.gov no later than 11:59 p.m. Eastern Time, Friday, September 23, 2016. Applications received after this deadline will not be reviewed or considered. Applicants should be aware, and factor in their application submission planning, that the Grants.gov system is expected to be closed for routine maintenance at these times: from 12:01 a.m. Eastern Time, Saturday, August 20, 2016 until Monday, August 22, 2016 at 6:00 a.m. Eastern Time; and from 12:01 a.m. Eastern Time, Saturday, September 17, 2016 until Monday, September 19, 2016 at 6:00 a.m. Eastern Time. Applications cannot be submitted when Grants.gov is closed. NIST expects to complete its review, selection of successful applicants, and

award processing by January 2017. NIST expects the earliest start date for awards under this FFO to be February 6, 2017.

When developing your submission timeline, please keep in mind that: (1) all applicants are required to have a current registration in the electronic System for Award Management (SAM.gov); (2) the free annual registration process in the SAM.gov (*see* Sections IV.3. and IV.7.a.(1).b. of this FFO) often takes between three and five business days and may take as long as two weeks; (3) applicants are required to have a current registration in Grants.gov; and (4) applicants using Grants.gov will receive email notifications over a period of up to two business days as the application moves through intermediate systems before the applicant learns via a validation or rejection notification whether NIST has received the application. (*See* http://www.grants.gov for full information on application and notification through Grants.gov.). Please note that a federal assistance award cannot be issued if the designated recipient's registration in the System for Award Management (SAM.gov) is not current at the time of the award.

5. **Intergovernmental Review.** Applications under this Program are not subject to Executive Order 12372.

6. **Funding Restrictions.** Applications for product development and/or commercialization are not considered responsive to this FFO. Profit or fee is not an allowable cost.

7. **Other Submission Requirements**

a. **Applications must be submitted electronically.**

(1) Applications must be submitted via Grants.gov at www.grants.gov.

   (a) Applicants should carefully follow specific Grants.gov instructions to ensure that all attachments will be accepted by the Grants.gov system. A receipt from Grants.gov indicating an application is received <u>does not provide information about whether attachments have been received</u>. For further information or questions regarding applying electronically for the 2016-NIST-DR-01 announcement, contact Christopher Hunton by phone at 301-975-5718 or by e-mail at grants@nist.gov.

   (b) Applicants are strongly encouraged to start early and not wait until the approaching due date before logging on and reviewing the instructions for submitting an application through Grants.gov. The Grants.gov registration process must be completed before a new registrant can apply electronically. If all goes well, the registration process takes three to five business days. If problems are encountered, the registration process can take up to two weeks or more. Applicants must have a valid unique entity identifier number and must maintain a current registration in the Federal government's primary registrant

database, the System for Award Management (https://www.sam.gov/), as explained on the Grants.gov Web site. *See also* Section IV.3. of this FFO. After registering, it may take several days or longer from the initial log-on before a new Grants.gov system user can submit an application. Only individuals authorized as organization representatives will be able to submit the application, and the system may need time to process a submitted application. Applicants should save and print the proof of submission they receive from Grants.gov. If problems occur while using Grants.gov, the applicant is advised to (a) print any error message received and (b) call Grants.gov directly for immediate assistance. If calling from within the United States or from a U.S. territory, please call 800-518-4726. If calling from a place other than the United States or a U.S. territory, please call 606-545-5035. Assistance from the Grants.gov Help Desk will be available around the clock every day, with the exception of Federal holidays. Help Desk service will resume at 7:00 a.m. Eastern Time the day after Federal holidays. For assistance using Grants.gov, you may also contact support@grants.gov.

(c) To find instructions on submitting an application on Grants.gov, Applicants should refer to the "Applicants" tab in the banner just below the top of the www.grants.gov home page. Clicking on the "Applicants" tab produces two exceptionally useful sources of information, Applicant Actions and Applicant Resources, which applicants are advised to review.

Applicants will receive a series of e-mail messages over a period of up to two business days before learning whether a Federal agency's electronic system has received its application. Closely following the detailed information in these subcategories will increase the likelihood of acceptance of the application by the Federal agency's electronic system.

Applicants should pay close attention to the guidance under "Applicant FAQs," as it contains information important to successful submission on Grants.gov, including essential details on the naming conventions for attachments to Grants.gov applications.

All applicants should be aware that adequate time must be factored into applicants' schedules for delivery of their application. Applicants are advised that volume on Grants.gov may be extremely heavy leading up to the deadline date.

The application must be both received and validated by Grants.gov. The application is "received" when Grants.gov provides the applicant a confirmation of receipt and an application tracking number. If an applicant does not see this confirmation and tracking number, the application has not been received. After the application has been received, it must still be validated. During this process, it may be "validated" or "rejected with errors." To know whether the application was rejected with errors and the reasons why, the applicant must log in to Grants.gov, select "Applicants" from the top navigation, and select "Track my application" from the drop-down list. If the

status is "rejected with errors," the applicant may still seek to correct the errors and resubmit your application before the deadline. If the applicant does not correct the errors, the application will not be forwarded to NIST by Grants.gov.

Refer to important information in Section IV.4. Submission Dates and Times, to help ensure your application is received on time.

b. **Amendments.** Any amendments to this FFO will be announced through Grants.gov. Applicants may sign up on Grants.gov to receive amendments by e-mail or may request copies from Millie Glick by telephone at (301) 975-5962 or by e-mail to millie.glick@nist.gov.

V. <u>Application Review Information</u>

1. **Evaluation Criteria.** The evaluation criteria that will be used in evaluating applications and assigned weights are as follows:

   a. **Problems, Solutions and Technical Approach. (0-35 points, each sub-criterion will be given approximately equal weight)** Reviewers will evaluate:
      i.   how well the applicant demonstrates a clear understanding of the problems and solutions;
      ii. the fitness, alignment and complementary nature of the proposed technical approach within the context of existing Engineering Lab DR Research Grants Program projects (*see* Section I. of this FFO); and
      iii. the degree to which the technical approach is comprehensive, innovative, feasible, and likely to solve the identified problems, produce the anticipated impacts, and meet the objectives of the DR Research Grants Program.

   b. **Statement of Work and Potential Impact of the Results. (0-35 points)** Reviewers will evaluate the appropriateness, quality, reasonableness and completeness of the applicant's statement of work, including the plans to manage the project tasks, timeline, and work of all project staff, to ensure realization of project goals and objectives. The potential impact of the project results, including plans for publication in professional literature and technology transfer, will also be evaluated.

   c. **Qualifications and Experience of Key Personnel and Resources Availability. (0-15 points)** Reviewers will evaluate the appropriateness, quality and degree of the qualifications and experience of the project leader and proposed staff, as well as the adequacy and quality of the applicant's access to equipment and facilities, to assess the likelihood of achieving the objectives of the project. If access to necessary equipment is limited or not available and the applicant plans to purchase equipment, proposed equipment purchases will be

evaluated according to the Budget Narrative evaluation criteria (*see* Section V.1.d. of this FFO).

    d. Budget Narrative. (0-15 points) Reviewers will assess the budgeted costs against the proposed activities to determine the practicality of the proposed budget with respect to developing and implementing the proposed project.

2. **Selection Factors.** The Selecting Official, the NIST EL Director shall generally select and recommend applications for award based upon the adjectival rankings (*see* Section V.3.b.(1) of this FFO) of the applications. The Selecting Official may select and recommend an application for award out of rank order (i.e., from a lower adjectival category) based on one or more of the following selection factors:

    a. Results of the reviewers' evaluations (the three reviews and the Evaluation Panel review, *see* Section V.3.b.(1) of this FFO);
    b. The availability of Federal funds;
    c. Whether the project duplicates other projects funded by NIST, DoC, or by other Federal agencies;
    d. Alignment with EL priorities, and;
    e. Balance across EL Disaster Resilience programs.

3. **Review and Selection Process**

Proposals, reports, documents and other information related to applications submitted to NIST and/or relating to financial assistance awards issued by NIST will be reviewed and considered by Federal employees, Federal agents and contractors, and/or by non-Federal personnel who have entered into nondisclosure agreements covering such information, when applicable.

    a. Initial Administrative Review. An initial review of timely received applications will be conducted to determine eligibility, completeness, and responsiveness to this FFO. Applications determined to be ineligible, incomplete, and/or non-responsive may be eliminated from further review.

    NIST, in its sole discretion, may continue the review process for an application that is missing non-substantive information which can be easily rectified or cured during the evaluation process.

    b. Review of Eligible, Complete, and Responsive Applications. Applications determined to be eligible, complete, and responsive will proceed for full reviews in accordance with the review and selection process below:

    (1) Evaluation, Review and Ranking. At least three objective reviewers, who are Federal employees, knowledgeable in the subject matter of this FFO and its objectives, will evaluate each application based on the evaluation criteria (*see* Section V.1. of this FFO). While every application will have at least three

reviews, applications may have differing numbers of reviews if specialized expertise is needed to evaluate the application. The applications will be ranked by average review score and provided to an Evaluation Panel (see below). If deemed necessary to clarify information in an application, an applicant may be asked written questions prior to the applications being ranked and presented to the Evaluation Panel.

An Evaluation Panel, consisting of NIST staff and/or other federal agency employees with appropriate technical expertise, will conduct a panel review of the reviewers' ranked applications. For the purpose of clarifying information in an application, the Evaluation Panel may ask questions of applicants in writing and/or may require teleconferences with all applicants. The Evaluation Panel will prepare and provide a final adjectival ranking of the applications to the Selecting Official (*see* Section V.2. of this FFO) for further consideration, taking into consideration the following information:

> **i.** All application materials;
> **ii.** Results of the reviewers' evaluations; and
> **iii.** Any clarifying information obtained through written questions or teleconferences with the applicants;

The adjectival rankings are:

Fundable, Outstanding
Fundable, Very Good
Fundable
Unfundable

For decision-making purposes, applications receiving the same adjectival rating will be considered to have an equivalent ranking, although their review scores will not necessarily be the same.

(2) Selection. The Selecting Official will determine, using the adjectival rankings and the selection factors (*see* Section V.2. of this FFO), which application(s) will be selected and recommended for award to the Grants Officer.

NIST reserves the right to negotiate budget costs with the selected applicants. Negotiations may include requesting that the applicant remove certain costs. Additionally, NIST may request that the applicant modify objectives or work plans and provide supplemental information required by the agency prior to award. NIST also reserves the right to reject an application where information is uncovered that raises a reasonable doubt as to the responsibility of the applicant. NIST may select some, all, or none of the applications, or part(s) of any particular application. NIST may request that fundable applicants consider working together in a combined project if this approach might effectively advance the program mission. The final approval of selected applications and issuance of awards will

be by the NIST Grants Officer. The award decisions of the Grants Officer are final.

c. **Federal Awarding Agency Review of Risk Posed by Applicants.** After applications are proposed for funding by the Selecting Official, the NIST Grants Management Division (GMD) performs pre-award risk assessments in accordance with 2 C.F.R. § 200.205, which may include a review of the financial stability of an applicant, the quality of the applicant's management systems, the history of performance, and/or the applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities.

In addition, prior to making an award where the total Federal share is expected to exceed the simplified acquisition threshold (currently $150,000), NIST GMD will review and consider the publicly available information about that applicant in the Federal Awardee Performance and Integrity Information System (FAPIIS). An applicant may, at its option, review and comment on information about itself previously entered into FAPIIS by a Federal awarding agency. As part of its review of risk posed by applicants, NIST GMD will consider any comments made by the applicant in FAPIIS in making its determination about the applicant's integrity, business ethics, and record of performance under Federal awards. Upon completion of the pre-award risk assessment, the Grants Officer will make a responsibility determination concerning whether the applicant is qualified to receive the subject award and, if so, whether appropriate special conditions that correspond to the degree of risk posed by the applicant should be applied to an award.

4. **Anticipated Announcement and Award Date.** Review of Applications, selection of successful applicants, and award processing is expected to be completed by January 2017. The earliest start date for awards under this FFO is expected to be February 6, 2017.

5. **Additional Information**

a. **Safety.** Safety is a top priority at NIST. Employees and affiliates of award recipients who conduct project work at NIST will be expected to be safety-conscious, to attend NIST safety training, and to comply with all NIST safety policies and procedures, and with all applicable terms of their guest research agreement.

b. **Notification to Unsuccessful Applicants.** Unsuccessful applicants will be notified by email.

c. **Retention of Unsuccessful Applications.** All electronic applications, whether successful or unsuccessful, are stored indefinitely in the NIST Grants Management and Information System.

d. **Protection of Proprietary Information.** When an application includes trade secrets or information that is commercial or financial, or information that is confidential or

privileged, it is furnished to the Government in confidence with the understanding that the information shall be used or disclosed only for evaluation of the application. Such information will be withheld from public disclosure to the extent permitted by law, including the Freedom of Information Act. Applicants should clearly mark as "proprietary" any information contained in their applications that they believe is a trade secret or otherwise protected proprietary business information. Without assuming any liability for inadvertent disclosure, NIST will seek to limit disclosure of such information to its employees and to outside reviewers when necessary for merit review of the application or as otherwise authorized by law. This restriction does not limit the Government's right to use the information if it is obtained from another source.

VI. Federal Award Administration Information

1. **Federal Award Notices.** Successful applicants will receive an award package from the NIST Grants Officer. The award cover page, i.e., CD-450, Financial Assistance Award is available at http://go.usa.gov/SNMR.

2. **Administrative and National Policy Requirements**

a. **Uniform Administrative Requirements, Cost Principles and Audit Requirements**. Through 2 C.F.R. § 1327.101, the Department of Commerce adopted Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. Part 200, which apply to awards in this program. Refer to http://go.usa.gov/SBYh and http://go.usa.gov/SBg4.

b. **Department of Commerce Financial Assistance Standard Terms and Conditions**. The Department of Commerce will apply the Financial Assistance Standard Terms and Conditions dated December 26, 2014, accessible at http://go.usa.gov/hKbj, to this award. Refer to Section VII. of this FFO, Federal Awarding Agency Contacts, Grant Rules and Regulations, if you seek the information at this link and it is no longer working or you need more information.

c. **Pre-Award Notification Requirements.** The Department of Commerce will apply the Pre-Award Notification Requirements for Grants and Cooperative Agreements dated December 30, 2014 (79 FR 78390), accessible at http://go.usa.gov/hKkR. Refer to Section VII. of this FFO, Federal Awarding Agency Contacts, Grant Rules and Regulations, if you seek the information at this link and it is no longer working or you need more information.

d. **Collaborations with NIST Employees**. All applications should include a description of any work proposed to be performed by an entity other than the applicant, and the cost of such work should ordinarily be included in the budget. If an applicant proposes collaboration with NIST, the statement of work should include a statement of this intention, a description of the collaboration, and prominently identify the NIST

employee(s) involved, if known. Any collaboration by a NIST employee must be approved by appropriate NIST management and is at the sole discretion of NIST. Prior to beginning the merit review process, NIST will verify the approval of the proposed collaboration. Any unapproved collaboration will be stricken from the application prior to the merit review. Any collaboration with an identified NIST employee that is approved by appropriate NIST management will not make an application more or less favorable in the competitive process.

e. **Use of NIST Intellectual Property.** If the applicant anticipates using any NIST-owned intellectual property to carry out the work proposed, the applicant should identify such intellectual property. This information will be used to ensure that no NIST employee involved in the development of the intellectual property will participate in the review process for that competition. In addition, if the applicant intends to use NIST-owned intellectual property, the applicant must comply with all statutes and regulations governing the licensing of Federal government patents and inventions, described in 35 U.S.C. §§ 200-212, 37 C.F.R. Part 401, 2 C.F.R. §200.315, and in Section D.03 of the DoC Financial Assistance Terms and Conditions dated December 26, 2014, found at http://go.usa.gov/hKbj.

Any use of NIST-owned intellectual property by a recipient of an award under this announcement is at the sole discretion of NIST and will be negotiated on a case-by-case basis if a project is deemed meritorious. The applicant should indicate within the statement of work whether it already has a license to use such intellectual property or whether it intends to seek one.

f. **Research Activities Involving Human Subjects, Human Tissue, Data or Recordings Involving Human Subjects Including Software Testing.** Any application that includes research activities involving human subjects, human tissue/cells, or data or recordings from or about human subjects, must satisfy the requirements of the Common Rule for the Protection of Human Subjects ("Common Rule"), codified for the Department of Commerce at 15 C.F.R. Part 27. Research activities involving human subjects who fall within one or more of the classes of vulnerable subjects found in 45 C.F.R. Part 46, Subparts B, C and D must satisfy the requirements of the applicable subpart(s). In addition, any such application that includes research activities on these subjects must be in compliance with all applicable statutory requirements imposed upon the Department of Health and Human Services (DHHS) and other Federal agencies, all regulations, policies and guidance adopted by DHHS, the Food and Drug Administration, and other Federal agencies on these topics, and all Executive Orders and Presidential statements of policy on applicable topics. (Regulatory Resources: http://www.hhs.gov/ohrp/humansubjects/index.html which includes links to FDA regulations, but may not include all applicable regulations and policies).

NIST uses the following Common Rule definitions for research and human subjects research:

Research: A systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program which is considered research for other purposes. For example, some demonstration and service programs may include research activity.

Human Subject: A living individual <u>about</u> whom an investigator (whether professional or student) conducting research obtains data through intervention or interaction with the individual or identifiable private information.

   (1) *Intervention* includes both physical procedures by which data are gathered and manipulations of the subject or the subject's environment that are performed for research purposes.

   (2) *Interaction* includes communication or interpersonal contact between investigator and subject.

   (3) *Private information* includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator associated with the information) in order for obtaining the information to constitute research involving human subjects.

See 15 C.F.R. § 27.102 Definitions.

1) **Requirement for Federalwide Assurance.** If the application is accepted for [or awarded] funding, organizations that have an IRB are required to follow the procedures of their organization for approval of exempt and non-exempt research activities that involve human subjects. Both domestic and foreign organizations performing non-exempt research activities involving human subjects will be required to have protocols approved by a cognizant, active IRB currently registered with the Office for Human Research Protections (OHRP) within the DHHS that is linked to the engaged organizations. All engaged organizations must possess a currently valid Federalwide Assurance (FWA) on file from OHRP. Information regarding how to apply for an FWA and register an IRB with OHRP can be found at http://www.hhs.gov/ohrp/assurances/index.html. NIST relies only on OHRP-issued FWAs and IRB Registrations for both domestic and foreign organizations for NIST supported research involving human subjects. NIST will not issue its own FWAs or IRB Registrations for domestic or foreign organizations.

2) **Administrative Review.** NIST reserves the right to make an independent determination of whether an applicant's activities include research involving human subjects. NIST will conduct an independent administrative review of all applications accepted for funding that include research involving human subjects that were approved by a non-NIST Institutional Review Board (IRB). Research may not start until the NIST Human Subjects Protection Office (HSPO) issues institutional review approval for final action by the NIST Grants Officer. (15 C.F.R. § 27.112 Review by Institution.) If NIST determines that an application includes research activities which involve human subjects, the applicant will be required to provide additional information for review and approval. The documents required for funded proposals are listed in each section below. Most such documents will need to be produced during the proposal review process; however, the Grants Officer may allow final versions of certain required documents to be produced at an appropriate designated time post-award. If an award is issued, no research activities involving human subjects shall be initiated or costs incurred for those activities under the award until the NIST Grants Officer issues written approval. Retroactive approvals are not permitted.

3) **Required documents for proposal review. All applications involving human subject research must clearly indicate, by separable task, all research activities believed to be exempt or non-exempt research involving human subjects, the expected institution(s) where the research activities involving human subjects may be conducted, and the institution(s) expected to be engaged in the research activities.**

   a. **Not research determination.** If an activity/task involves human subjects as defined in the Common Rule, but the applicant participant(s) indicates to NIST that the activity/task is not research as defined in the Common Rule, the following information may be requested for that activity/task:

   (1) Justification, including the rationale for the determination and such additional documentation as may be deemed necessary by NIST to review and/or support a determination that the activity/task in the application is not research as defined in the Common Rule.
   (2) If the applicant participant(s) used a cognizant IRB that provided a determination that the activity/task is not research, a copy of that determination documentation must be provided to NIST. The applicant participant(s) is not required to establish a relationship with a cognizant IRB if they do not have one.

   NIST will review the information submitted and may coordinate further with the applicant before determining whether the activity/task will be defined as research under the Common Rule in the applicable NIST financial assistance program or project.

   b. **Exempt research determination with no IRB.** If the application appears to

NIST to include exempt research activities, and the performer of the activity or the supplier and/or the receiver of the biological materials or data from human subjects **does not** have a cognizant IRB to provide an exemption determination, the following information may be requested during the review process so that NIST can evaluate whether an exemption under the Common Rule applies (see 15 C.F.R. § 27.101(b), (c) and (d)).

(1) The name(s) of the institution(s) where the exempt research will be conducted.
(2) The name(s) of the institution(s) providing the biological materials or data from human subjects will be provided.
(3) A copy of the protocol for the research to be conducted; and/or the biological materials or data from human subjects to be collected/provided, not pre-existing samples (*i.e.,* will proposed research collect only information without personal identifiable information, will biological materials or data be de-identified and when and by whom was the de-identification performed, how were the materials or data originally collected).
(4) For pre-existing biological materials or data from human subjects, provide copies of the consent forms used for collection and a description of how the materials or data were originally collected and stripped of personal identifiers. If copies of consent forms are not available, explain.
(5) Any additional clarifying documentation that NIST may deem necessary in order to make a determination whether the activity/task or use of biological materials or data from human subjects is exempt under the Common Rule.

c. **Research review with an IRB.** If the application appears to NIST to include research activities (exempt or non-exempt) involving human subjects, and the proposed performer of the activity has a cognizant IRB registered with OHRP, and linked to their Federalwide Assurance, the following information may be requested during the review process:

(1) The name(s) of the institution(s) where the research will be conducted;
(2) The name(s) and institution(s) of the cognizant IRB(s), and the IRB registration number(s);
(3) The FWA number of the applicant linked to the cognizant IRB(s);
(4) The FWAs associated with all organizations engaged in the planned research activity/task, linked to the cognizant IRB;
(5) If the IRB review(s) is pending, the estimated start date for research involving human subjects;
(6) The IRB approval date (if currently approved for exempt or non-exempt research);
(7) If any of the engaged organizations has applied for or will apply for an FWA or IRB registration, those details should be clearly provided for each engaged organization.

If the application includes research activities involving human subjects to be performed in the first year of an award, additional documentation may be requested by NIST during pre-award review for those performers, and may include the following for those research activities:

(1) A signed (by the study principal investigator) copy of each applicable final IRB-approved protocol;
(2) A signed and dated approval letter from the cognizant IRB(s) that includes the name of the institution housing each applicable IRB, provides the start and end dates for the approval of the research activities, and any IRB-required interim reporting or continuing review requirements;
(3) A copy of any IRB-required application information, such as documentation of approval of special clearances (*i.e.,* biohazard, HIPAA, etc.) conflict-of-interest letters, or special training requirements;
(4) A brief description of what portions of the IRB submitted protocol are specifically included in the application submitted to NIST, if the protocol includes tasks not included in the application, or if the protocol is supported by multiple funding sources. For protocols with multiple funding sources, NIST will not approve the study without a non-duplication-of-funding letter indicating that no other federal funds will be used to support the tasks proposed under the proposed research or ongoing project;
(5) If a new protocol will only be submitted to an IRB if an award from NIST is issued, a draft of the proposed protocol;
(6) Any additional clarifying documentation that NIST may request during the review process to perform the NIST administrative review of research involving human subjects. (*See* 15 C.F.R. § 27.112 Review by Institution.)

This clause reflects the existing NIST policy and requirements for Research Involving Human Subjects. Should the policy be revised prior to award, a clause reflecting the policy current at time of award may be incorporated into the award.

If the policy is revised after award, a clause reflecting the updated policy may be incorporated into the award.

For more information regarding research projects involving human subjects, contact Anne Andrews, Director, NIST Human Subjects Protection Office (e-mail: anne.andrews@nist.gov; phone: (301) 975-5445).

g. **Research Activities Involving Live Vertebrate Animals.** Any application that includes research activities involving live vertebrate animals, that are being cared for, euthanized, or used by participants in the application to accomplish research goals, teaching, or testing, must meet the requirements of the Animal Welfare Act (AWA) (7 U.S.C. § 2131 et seq.), and the AWA final rules (9 C.F.R. Parts 1, 2, and 3), and if appropriate, the Good Laboratory Practice for Non-clinical Laboratory Studies (21 C.F.R. Part 58). In addition, such applications should be in compliance

with the *"U.S. Government Principles for Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training."* The Principles and guidance on these Principles are available in the National Research Council's "Guide for the Care and Use of Laboratory Animals,'' which can be obtained from National Academy Press, 500 5th Street, N.W., Department 285, Washington, DC 20055, or as a free PDF online at http://www.nap.edu/catalog/12910/guide-for-the-care-and-use-of-laboratory-animals-eighth.

The following requirements do not apply to proposed research using preexisting images of animals or to research plans that do not include live animals. These regulations also do not apply to obtaining stock items from animal material suppliers (*e.g.,* tissue banks), such as cell lines and tissue samples, or from commercial food processors, where the vertebrate animal was euthanized for food purposes and not for the purpose of sample collection.

Custom Collections Harvested from Live Vertebrate Animals: NIST requires documentation for obtaining custom samples from live vertebrate animals from animal material suppliers and other organizations (*i.e.,* universities, companies, and government laboratories, etc.). Custom samples includes samples from animal material suppliers, such as when a catalog item indicates that the researcher is to specify the characteristics of the live vertebrate animal to be used, or how a sample is to be collected from the live vertebrate animal.

Field Studies of Animals: Some field studies of animals may be exempt under the Animal Welfare Act from full review and approval by an animal care and use committee, as determined by each institution. Field study is defined as "*…a study conducted on free-living wild animals in their natural habitat."* However, this term excludes any study that involves an invasive procedure or that harms or materially alters the behavior of an animal under study. Field studies, with or without invasive procedures, may also require obtaining appropriate federal or local government permits (*e.g.,* marine mammals, endangered species etc.). If the applicant's institution requires review and approval by an animal care and use committee, NIST will require that documentation to be provided as described below.

1) **Requirement for Assurance.** An applicable assurance for the care and use of the live vertebrate animal(s) to be used in the proposed research is required. NIST accepts three types of assurances, as may be applicable. NIST may request documentation to confirm an assurance, if adequate confirmation is not available through an assuring organization's website.

   The cognizant Institutional Animal Care and Use Committee (IACUC) where the research activity is located may hold one or more applicable assurance, including:
   - Animal Welfare Assurance from the Office of Laboratory Animal Welfare (OLAW) indicated by the OLAW assurance number, *i.e.,* A-1234;

- USDA Animal Welfare Act certification indicated by the certification number, *i.e.,* 12-R-3456;
- Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC) indicated by providing the organization name accredited by AAALAC as listed in the AAALAC Directory of Accredited Organizations.

2) **Administrative Review.** NIST reserves the right to make an independent determination of whether an applicant's research activities involve live vertebrate animals or custom samples from, or field studies with live vertebrate animals. If NIST determines that the application includes research activities, field studies, or custom samples involving live vertebrate animals, the applicant will be required to provide additional information for review and approval. The documents required for funded proposals are listed in each section below. Some may be requested for a pre-review during the proposal review process; however, the Grants Officer may allow final versions of certain required documents to be produced at an appropriate designated time post-award. If an award is issued, no research activities involving live vertebrate animals subjects shall be initiated or costs incurred for those activities under the award until the NIST Grants Officer issues written approval.

3) **Required documents for proposal review.** ***The applicant should clearly indicate in the application, by separable task, all research activities believed to include research involving live vertebrate animals and the institution(s) where the research activities involving live vertebrate animals may be conducted.***

   Documentation of Research Review by an IACUC: If the applicant's application appears to include research activities, field studies, or custom sample collections involving live vertebrate animals the following information regarding review by an applicable IACUC may be requested during the application review process:

   1. The name(s) of the institution(s) where the research involving live vertebrate animals will be conducted and/or custom samples collected;
   2. The assurance type and number, as applicable, for the cognizant Institutional Animal Care and Use Committee (IACUC) where the research activity is located. [For example: Animal Welfare Assurance from the Office of Laboratory Animal Welfare (OLAW) should be indicated by the OLAW assurance number, i.e. A-1234; an USDA Animal Welfare Act certification should be indicated by the certification number i.e. 12-R-3456; and an Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC) should be indicated by AAALAC.]
   3. The IACUC approval date for the Animal Study Protocol (ASP) (if currently approved);
   4. If the review by the cognizant IACUC is pending, the estimated- start date for research involving vertebrate animals;

5. If any assurances or IACUCs need to be obtained or established, that should be clearly stated.
6. If any special permits are required for field studies, those details should be clearly provided for each instance, or indicated as pending.

If the application includes research activities involving vertebrate animals to be performed in the first year of an award, additional documentation may be requested by NIST during pre-award review for those performers, and may include the following for those research activities, which may also include field studies, custom sample collections involving live vertebrate animals:

1. A signed (by the Principal Investigator) copy of the IACUC approved ASP;
2. Documentation of the IACUC approval indicating the approval and expiration dates of the ASP; and
3. If applicable, a non-duplication-of-funding letter if the ASP is funded from several sources.
4. If a new ASP will only be submitted to an IACUC if an award from NIST is issued, a draft of the proposed ASP may be requested.
5. Any additional clarifying documentation that NIST may request during review of applications to perform the NIST administrative review of research involving live vertebrate animals.

This clause reflects the existing NIST policy for Research Involving Live Vertebrate Animals. Should the policy be revised prior to award, a clause reflecting the policy current at time of award may be incorporated into the award.

If the policy is revised after award, a clause reflecting the updated policy may be incorporated into the award.

For more information regarding research projects involving live vertebrate animals, contact Linda Beth Schilling, Senior Analyst (e-mail: linda.schilling@nist.gov; phone: 301-975-2887).

3. **Reporting**

a. **Reporting Requirements.** The following reporting requirements described in Sections A.01 Performance (Technical) Reports and B.02 Financial Reports of the DoC Financial Assistance Standard Terms and Conditions dated December 26, 2014, http://go.usa.gov/hKbj apply to awards in this program:

(1) **Financial Reports.** Each award recipient will be required to submit an SF-425, Federal Financial Report on a quarterly basis for the periods ending March 31, June 30, September 30, and December 31 of each year. Reports will be due within 30 days after the end of the reporting period to the NIST Grants Officer and Grants Specialist named in the award documents. A final financial report is due within 90 days after the end of the project period.

(2) Performance (Technical) Reports. Each award recipient will be required to submit a technical progress report to the NIST Grants Officer and the NIST Federal Program Officer on a quarterly basis for the periods ending March 31, June 30, September 30, and December 31 of each year. Reports will be due within 30 days after the end of the reporting period. A final technical progress report shall be submitted within 90 days after the expiration date of the award. Technical progress reports shall contain information as prescribed in 2 C.F.R. § 200.328 and include key metrics indicating project status such as number of actual users, number of transactions, etc.

(3) Patent and Property Reports. From time to time, and in accordance with the Uniform Administrative Requirements (*see* Section VI.2. of this FFO) and other terms and conditions governing the award, the recipient may need to submit property and patent reports.

(4) Recipient Integrity and Performance Matters. In accordance with section 872 of Public Law 110-417 (as amended; see 41 U.S.C. 2313), if the total value of a recipient's currently active grants, cooperative agreements, and procurement contracts from all Federal awarding agencies exceeds $10,000,000 for any period of time during the period of performance of an award made under this FFO, then the recipient shall be subject to the requirements specified in Appendix XII to 2 C.F.R. Part 200, http://go.usa.gov/cTBwC, for maintaining the currency of information reported to SAM that is made available in FAPIIS about certain civil, criminal, or administrative proceedings involving the recipient.

b. **Audit Requirements.** 2 C.F.R. Subpart F, adopted by the Department of Commerce through 2 C.F.R. § 1327.101 requires any non-Federal entity (*i.e.*, including non-profit institutions of higher education and other non-profit organizations) that expends Federal awards of $750,000 or more in the recipient's fiscal year to conduct a single or program-specific audit in accordance with the requirements set out in the Subpart. Applicants are reminded that NIST, the DoC Office of Inspector General, or another authorized Federal agency may conduct an audit of an award at any time.

c. **Federal Funding Accountability and Transparency Act of 2006.** In accordance with 2 C.F.R. Part 170, all recipients of a Federal award made on or after October 1, 2010, are required to comply with reporting requirements under the Federal Funding Accountability and Transparency Act of 2006 (Pub. L. No. 109-282). In general, all recipients are responsible for reporting sub-awards of $25,000 or more. In addition, recipients that meet certain criteria are responsible for reporting executive compensation. Applicants must ensure they have the necessary processes and systems in place to comply with the reporting requirements should they receive funding. Also see the *Federal Register* notice published September 14, 2010, at 75 FR 55663 available here http://go.usa.gov/hKnQ.

4. Award Management and Public Engagement

a. Publication and Technology Transfer. Each award recipient is expected to present the results of their work in appropriate professional literature and conferences in order to make the findings broadly available. Data supporting any findings or conclusions shall be made available in a manner consistent with the Data Management Plan.

VII. Federal Awarding Agency Contacts

Questions should be directed to the following contact persons:

Subject Area	Point of Contact
Programmatic and Technical Questions	Millie Glick Phone: 301-975-5962 E-mail: millie.glick@nist.gov
Technical Assistance with Grants.gov Submissions	Christopher Hunton Phone: 301-975-5718 Fax: 301-975-8884 E-mail: grants@nist.gov Or Grants.gov Phone: 800-518-4726 E-mail: support@grants.gov
Grant Rules and Regulations	Dean Iwasaki Phone: 301-975-8449 Fax: 301-975-8884 E-mail: dean.iwasaki@nist.gov

VIII. Other Information

- **Public Website, Frequently Asked Questions (FAQs) and Webinar:** NIST has a public website, http://www.nist.gov/el/disresgoal.cfm, that provides information pertaining to this Funding Opportunity. NIST anticipates that a "Frequently Asked Questions" section or other resource materials will be maintained and updated as needed to provide additional guidance and clarifying information that may arise related to this Funding Opportunity. Any amendments to this FFO will be announced through Grants.gov.

  Applicants must submit all questions pertaining to this Funding Opportunity in writing

by e-mail to millie.glick@nist.gov. Questions submitted to NIST may be posted on the public website, http://www.nist.gov/el/disresgoal.cfm. Alternatively, applicants may ask questions during the informational public webinar as described in the next paragraph.

NIST will hold a webinar on August 25, 2016 to provide general information regarding this FFO, offer general guidance on preparing applications, and answer questions. Proprietary technical discussions about specific project ideas will not be permitted and NIST staff will not critique or provide feedback on specific project ideas while they are being developed by an applicant or brought forth during the Webinar or at any time before the deadline for all applications. However, questions about the DR Research Grants Program, eligibility requirements, evaluation and award criteria, selection process, and the general characteristics of a competitive application can be addressed at the Webinar and by e-mail to millie.glick@nist.gov as described in the previous paragraph. There is no cost to attend the Webinar, but participants must register in advance. Participation in the Webinar is not required, and will not be considered in the application review and selection process. Additional information on the DR Research Grants Program and the Webinar is available at http://www.nist.gov/el/disresgoal.cfm.