

November 15, 2017

**NOTICE OF FUNDING OPPORTUNITY (NOFO)
Precision Measurement Grant Program (PMGP)**

EXECUTIVE SUMMARY

- **Federal Agency Name:** National Institute of Standards and Technology (NIST), United States Department of Commerce (DoC)
- **Funding Opportunity Title:** Precision Measurement Grant Program (PMGP or Program)
- **Announcement Type:** Initial
- **Funding Opportunity Number:** 2018-NIST-PMGP-01
- **Catalog of Federal Domestic Assistance (CFDA) Number:** 11.609, Measurement and Engineering Research and Standards
- **Dates:** Abbreviated Applications must be received by e-mail no later than 5:00 p.m. Eastern Time on Friday, February 2, 2018 (see Section IV.7.a. of this NOFO). Abbreviated Applications received after this deadline will not be reviewed or considered. Review of Abbreviated Applications and selection of finalists is expected to be completed by Monday, March 19, 2018. Full Applications must be received through Grants.gov no later than 11:59 p.m. Eastern Time, on Friday, May 18, 2018.

Applicants should be aware, and factor in their application submission planning for Full Applications, that **the Grants.gov system is expected to be closed for routine maintenance** from 12:01 a.m. Eastern Time, Saturday, March 17, 2018 until Monday, March 19, 2018 at 6:00 a.m. Eastern Time; and again from 12:01 a.m. Eastern Time, Saturday, April 21, 2018 until Monday, April 23, 2018 at 6:00 a.m. Eastern Time. **Full Applications cannot be submitted when Grants.gov is closed.**

Full Applications received after the deadline will not be reviewed or considered. Review of Full Applications, selection of successful applicants, and award processing is expected to be completed in August 2018. The earliest anticipated start date for awards under this NOFO is expected to be October 1, 2018.

If you have been invited to submit a Full Application, when developing your submission timeline, please keep in mind that (1) applicants are required to have current registrations in both the System for Award Management (SAM.gov) and in Grants.gov; (2) the free annual registration process in the electronic System for Award Management (SAM.gov) (see Section IV.3. and Section IV.7.b.(2)) may take between three and five business days or as long as more than two weeks; and (3) applicants using Grants.gov will receive e-mail 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 further 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.**

Applicants are strongly urged to carefully read Section IV.2.c. Attachment of Required Documents for the Full Application. 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 included in their submission. Full Applications submitted without the required documents will not pass the Initial Administrative Review, described in Section V.3.a. of this NOFO.

- **Application Submission Address:** See Section IV.1. in the Full Announcement Text of this NOFO.
- **Program Description:** NIST is soliciting applications from eligible applicants to support significant research in the field of fundamental measurement or the determination of fundamental constants.
- **Anticipated Funding Amounts:** Approximately \$100,000 may be available to fund the first year of new multi-year awards, supporting at most two (2) projects, depending on the availability of funding, for up to three (3) years at up to \$50,000 per year, consistent with the multi-year funding policy described in Section II.3. of this NOFO.
- **Funding Instrument:** Grant or cooperative agreement, as appropriate.
- **Who is Eligible:** Accredited institutions of higher education; hospitals; non-profit organizations; commercial organizations; state, local, and Indian tribal governments; foreign governments; organizations under the jurisdiction of foreign governments; international organizations; and Federal agencies with appropriate legal authority.
- **Cost Sharing Requirements:** This Program does not require cost sharing.

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FULL ANNOUNCEMENT TEXT

I. Program Description

The statutory authority for the Precision Measurement Grant Program (PMGP) is 15 U.S.C. § 272(b)(2), (b)(4), (b)(6), (b)(7), (b)(8), (c)(1), (c)(3), (c)(10), (c)(11), and (c)(18).

Program Description: Since 1970, NIST, as part of its research program, has provided funding under the Precision Measurement Grant Program (PMGP) primarily to universities and colleges so that faculty may conduct significant research in the field of fundamental measurement or the determination of fundamental constants. NIST sponsors these research projects primarily to encourage basic, measurement-related research in universities and colleges and other research laboratories and to foster contacts between NIST scientists and those faculty members of academic institutions and other researchers who are actively engaged in such work. The PMGP also is intended to make it possible for researchers to pursue new ideas for which other sources of support may be difficult to find. There is some latitude in research topics that will be considered under the PMGP.

II. Federal Award Information

- 1. Funding Instrument.** The funding instrument that will be used in this program is a grant or cooperative agreement. If a cooperative agreement is used, the nature of NIST's "substantial involvement" will generally be collaboration between NIST and the recipient organizations. This includes NIST collaboration with a recipient on the scope of work.
- 2. Funding Availability.** Approximately \$100,000 may be available to fund the first year of new multi-year awards, supporting at most two (2) projects, depending on the availability of funding, for up to three (3) years at up to \$50,000 per year, consistent with the multi-year funding policy described in Section II.3. of this NOFO.
- 3. 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 program. 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 PMGP, and the availability of funds.

III. Eligibility Information

1. **Eligible Applicants.** Eligible applicants are accredited institutions of higher education; hospitals; non-profit organizations; commercial organizations; state, local and Indian tribal governments; foreign governments; organizations under the jurisdiction of foreign governments; international organizations; and Federal agencies with appropriate legal authority.
2. **Cost Sharing or Matching.** This Program does not require cost sharing.

IV. Application Submission Information

1. **Address to Request Application Package.** The application form for the Abbreviated Application, the SF-424, is available at the Forms page on Grants.gov, found at <https://www.grants.gov/web/grants/forms/sf-424-family.html#sortby=1>, and also at www.physics.nist.gov/pmg. The SF-424 may also be requested by contacting the NIST personnel listed below:

Jody Payne, National Institute of Standards and Technology, PMGP, 100 Bureau Drive, Mail Stop 8420, Gaithersburg, MD 20899-8420. Phone: (301) 975-3200; e-mail pmg@nist.gov)

The application package for the Full Application will be available at www.grants.gov under Funding Opportunity Number 2018-NIST-PMGP-01 and may only be submitted in response to an invitation from NIST to submit a Full Application for the PMGP.

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

a. **Required Abbreviated Application Form and Document**

Abbreviated Applications must be submitted under the PMGP in order to be considered for funding (see Section IV.7.a. of this NOFO). The Abbreviated Application must contain the following:

- (1) **SF-424, Application for Federal Assistance.** The SF-424 must be signed and dated by an authorized representative of the applicant organization.
 - SF-424, Item 8.d. Zip/Postal Code field, should reflect the Zip Code + 4 (#####-####) format.
 - SF-424, Item 12, should list the NOFO number 2018-NIST-PMGP-01.
 - SF-424, Item 18, should list the total Federal budget amount requested for the entire project (up to \$150,000).

- The list of certifications and assurances referenced in Item 21 of the SF-424 is not needed for the Abbreviated Application.

(2) Abbreviated Application Narrative. A word-processed document written by the applicant of no more than five (5) double-spaced pages describing the proposed project that includes sufficient information to address the evaluation criteria (see Section V.1. of this NOFO).

b. Required Full Application Forms and Documents

It is anticipated that four (4) to six (6) applicants who submitted Abbreviated Applications will be selected by NIST as finalists and requested to submit a Full Application for the PMGP. Only applicants who have been selected by NIST as finalists and are requested to submit a Full Application are permitted to submit Full Applications (see Section IV.7.b. of this NOFO). Full applications submitted by applicants that have not been selected as finalists will be returned to the applicant without review. **The Full 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 8.d. Zip/Postal Code field, should reflect the Zip Code + 4 (#####-####) format.
 - SF-424, Item 12, should list the NOFO number 2018-NIST-PMPG-01.
 - SF-424, Item 18, should list the total Federal budget amount requested for the entire project (up to \$150,000).
 - 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 each year of the project in \$50,000 increments for up to three (3) years, considering all potential cost increases, including cost of living adjustments. Please carefully follow the directions found at <http://www.grants.gov/web/grants/form-instructions/sf-424a-instructions.html> when filling out this form.

The Grant Program Function or Activity on Line 1 under Column (a) should be entered as Precision Measurement Grant Program. The Catalog of Federal Domestic Assistance Number in on Line 1 under Column (b) should be entered as “11.609”. Line 1, Column (e) should reflect the anticipated expenses for the full term of the project (up to \$150,000).

Section B, column (1) of the SF-424A should reflect funds for the first year of the award (up to \$50,000). Section B, column (2) of the SF-424A should reflect funds for the second year of the award (up to \$50,000). If the application includes a third year, use Section B, column (3) for the third year’s budget (up to \$50,000). Section D requires a breakdown of the first year’s budget by quarter. The budget estimate for the second year of the award

should be entered in Section E, field 16, column (b). If the project includes a third year, the budget estimate for the third year should be entered in Section E, field 16, column (c).

Further details about this form 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 “2018-NIST-PMGP-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 word-processed document of no more than ten (10) double-spaced pages responsive to the program description (see Section I. of this NOFO) and the evaluation criteria (see Section V.1. of this NOFO). A suggested format is:

(a) **Abstract.** Provide a concise title and a 100-200 word abstract.

(b) **Project Narrative.** Address each of the four (4) evaluation criteria (see Section V.1. of this NOFO).

(c) **Curriculum Vitae (CV).** Provide a CV of the principal investigator, including a list of his/her most recent and relevant publications.

(d) **Current Support.** Indicate if your research is supported by other sources of funding and make clear what NIST funds will enable the applicant to achieve that could not be achieved with the other sources of funds.

(e) **Similar Research Applications.** Provide a list of all current and pending applications for similar research, including the amounts requested and the source that was or is considering them.

(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 the budget categories (personnel, fringe benefits, travel, equipment, supplies, contractual, 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. For costs that are not known at the time of application, best estimates based on previous activities that are similar in nature and scope may be used. 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) **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.
- (d) **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.
- (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) **Contractual.** Each contract or subaward should be treated as a separate item. Describe the services to be provided and the necessity of the subaward or contract to the successful performance of the proposed project. Contracts are for obtaining 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 (e.g. publishing fees or software distribution expenses), 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.

(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 dated March 31, 2017, accessible at <https://go.usa.gov/xXRxK>.

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) Data Management Plan. Consistent with NIST Policy 5700.00¹, *Managing Public Access to Results of Federally Funded Research*, and NIST Order 5701.00², *Managing Public Access to Results of Federally Funded Research*, applicants must 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 Foundation³ or the National Institutes of Health⁴).

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/or

¹ <http://www.nist.gov/data/upload/Final-P-5700.pdf>

² http://www.nist.gov/data/upload/Final-O-5701_0.pdf

³ <http://www.nsf.gov/bfa/dias/policy/dmp.jsp>

⁴ http://grants.nih.gov/grants/policy/data_sharing/data_sharing_guidance.htm

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 NOFO); however, the DMP will not be evaluated against any evaluation criteria.

c. Attachment of Required Documents for the Full Application

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

Items IV.2.b.(6). through IV.2.b.(9). must be completed and attached by clicking on “Add Attachments” found in item 15 of the SF-424, Application for Federal 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.

d. Application Format

- (1) **Abbreviated and Full Application Submissions.** Abbreviated Applications are accepted only by e-mail (see Section IV.7.a. of this NOFO). Full applications are accepted only through Grants.gov and will not be accepted by e-mail (see Section IV.7.b. of this NOFO).
- (2) **Paper or Facsimile Submissions.** Paper or facsimile submissions will not be accepted for either the Abbreviated Applications or Full Applications.
- (3) **Figures, Graphs, Images, and Pictures.** Should be of a size that is easily readable or viewable and may be landscape orientation.
- (4) **Font.** Easy to read font (10-point minimum). Smaller type may be used in figures and tables but must be clearly legible
- (5) **Page Limit.** The Abbreviated Application Narrative is limited to five (5) pages double spaced. The Full Application Technical Proposal is limited to ten (10) pages double spaced.

Page Limit Includes for both Abbreviated Application Narratives and Full Application Technical Proposals: Table of contents (if included), all required information included, including CVs, figures, graphs, tables, images, pictures, and references, as applicable.

Page Limit Excludes (Abbreviated Applications): SF-424, Application for Federal Assistance

Page Limit Excludes (Full Applications): SF-424, Application for Federal Assistance; SF-424A, Budget Information – Non-Construction Programs; SF-424B, Assurances – Non-Construction Programs; SF-LLL, Disclosure of Lobbying Activities; CD-511, Certification Regarding Lobbying; Budget Narrative; Indirect Cost Rate Agreement (or statement electing to use 10% *de minimus* rate); and Data Management Plan.

- (6) **Page size.** 21.6 centimeters by 27.9 centimeters (8 ½ by 11 inches).
- (7) **Application language.** English.

e. Application Replacement Pages. Applicants may not submit replacement pages and/or missing documents once an application has been submitted. Any

Revisions can only be made by submitting a complete new application that is received by NIST before the submission deadline.

- f. **Pre-Applications.** NIST requires Abbreviated Applications under the PMGP Program (see Section IV.2.a. and Section IV.7.a. of this NOFO). The Selecting Official will select a group of finalists to submit Full Applications from among the Abbreviated Applications (see Section V.3.b.(1) of this NOFO).
 - g. **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 NOFO, 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

- a. **Abbreviated Applications.** Abbreviated Applications must be received by NIST via e-mail no later than 5:00 p.m. Eastern Time on Friday, February 2, 2018 (see Section IV.7.a. of this NOFO). Abbreviated Applications received after this deadline will not be reviewed or considered.
- b. **Full Applications.** Full Applications must be received electronically through Grants.gov no later than 11:59 p.m. Eastern Time, on Friday, May 18, 2018.

Applicants should be aware, and factor in their application submission planning for Full Applications, that **the Grants.gov system is expected to be closed for routine maintenance** from 12:01 a.m. Eastern Time, Saturday, March 17, 2018 until Monday, March 19, 2018 at 6:00 a.m. Eastern Time; and again from 12:01 a.m. Eastern Time, Saturday, April 21, 2018 until Monday, April 23, 2018 at 6:00 a.m. Eastern Time. **Full Applications cannot be submitted when Grants.gov is closed.**

Abbreviated and Full Applications not received by the specified due dates and times will not be considered. For Full Application submissions, NIST will consider the date and time recorded by www.grants.gov as the official time that the application was received by NIST. **Applicants are cautioned that the validation process may take up to two full business days after the application is submitted to Grants.gov.**

NIST strongly recommends that applicants do not wait until the last minute to submit applications. NIST will not make allowance for any late submissions. The responsibility for ensuring a complete application is received by NIST by the deadline rests solely with the applicant. To avoid any potential processing backlogs due to last minute Grants.gov registrations, applicants are strongly encouraged to start their Grants.gov registration process at least four (4) weeks prior to the application due date.

If you are invited to submit a Full Application, when developing your submission timeline, please keep in mind that (1) all applicants are required to have a current registration in the System for Award Management (SAM.gov); (2) the free annual registration process in the electronic System for Award Management (SAM.gov) (see Section IV.3. and Section IV.7.b.(2). of this NOFO) may take between three and five business days, or as long as more than two weeks; (3) submitters of electronic applications are required to have a current registration in Grants.gov; and (4) applicants will receive a series of e-mail messages from Grants.gov over a period of up to two business days before learning whether a Federal agency's electronic system has received its application. **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.**

Submitters of Full Applications will find instructions on registering with SAM.gov as part of the Grants.gov process at:

<http://www.grants.gov/web/grants/applicants/organization-registration.html>

5. **Intergovernmental Review.** Applications under this Program are not subject to Executive Order 12372.
6. **Funding Restrictions.** Profit or fee is not an allowable cost.
7. **Other Submission Requirements**
 - a. **Abbreviated Applications.** Abbreviated Applications must be submitted by e-mail to pmg@nist.gov.
 - b. **Full Applications.** Applicants whose Abbreviated Applications are selected as finalists and who are invited by NIST to submit Full Applications must submit them via Grants.gov as follows:

- (1) Applicants should carefully follow specific Grants.gov instructions to ensure the attachments will be accepted by the Grants.gov system. A receipt from Grants.gov indicating an application is received does not provide information about whether attachments have been received. For further information or questions regarding applying electronically for the 2018-NIST-PMGP-01 announcement, contact Christopher Hunton by phone at 301-975-5718 or by e-mail at grants@nist.gov.
- (2) 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 (3) to five (5) business days. If problems are encountered, the registration process can take up to two (2) 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 NOFO. 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.
- (3) 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.

- c. **Amendments.** Any amendments to this NOFO will be announced through Grants.gov. Applicants may sign up for grants.gov NOFO amendments or may request copies from Jody Payne by telephone at (301) 975-3200 or by e-mail to pmg@nist.gov.

V. Application Review Information

- 1. **Evaluation Criteria.** The evaluation criteria that will be used when evaluating both Abbreviated Applications and Full Applications are as follows:
 - a. **The importance of the proposed research** - What is its potential for answering some currently pressing question or of opening up a whole new area of activity?
 - b. **The relationship of the proposed research to NIST’s ongoing work** - How well does the proposed research support one of NIST’s current efforts to: develop a new or improved fundamental measurement method or physical standard; test the basic laws of physics; or provide an improved value for a fundamental constant? (See <http://pml.nist.gov>)

- c. **The feasibility of the research and the potential impact of the project/award** - How likely is it that significant progress can be made in a three-year time period with the funds and personnel available and that the funding will enable work that would otherwise not be done?
- d. **The qualifications of the applicant** - How strongly does the applicant's educational and employment background and the quality of their research based on recent publications indicate that there is a high probability that the proposed research will be carried out successfully?

Each of these factors will be given equal weight in the evaluation process.

2. Selection Factors. The Selecting Official shall select no more than two Full Applications for award based upon the aggregated rank order of the Full Applications (see Section V.3.b.(2) of this NOFO), and may select a Full Application out of rank based on one or more of the following selection factors:

- a. The availability of Federal funds.
- b. Whether the project duplicates other projects funded by DoC or by other Federal agencies.
- c. Relevance to the program description (see Section I. of this NOFO).
- d. Avoiding duplication of scientific or technical approaches or participants across funded projects.

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 and may also be reviewed and considered by Federal contractors or other non-Federal personnel, all of whom will enter into appropriate conflict of interest and confidentiality agreements covering such information.

- a. **Initial Administrative Review of Abbreviated and Full Applications.** An initial review of timely received Abbreviated and Full Applications will be conducted to determine eligibility; completeness; and responsiveness to this NOFO and the scope of the stated program objectives. Applications determined to be ineligible, incomplete, and/or non-responsive may be eliminated from further review. However, NIST, in its sole discretion, may continue the review process for an Abbreviated or Full Application that is missing non-substantive information, the absence of which may easily be rectified during the review process.
- b. **Full Review of Eligible, Complete, and Responsive Abbreviated and Full Applications.** Abbreviated and Full Applications determined to be eligible,

complete, and responsive will proceed for full reviews in accordance with the review and selection process below:

(1) Abbreviated Applications. Each Abbreviated Application will be reviewed by up to eight (8) independent, objective reviewers. The reviewers may discuss the applications with each other, but rankings will be determined on an individual basis, not as a consensus. The independent reviewers will be scientists knowledgeable in the scientific areas of the program. Each reviewer will create a rank order of the Abbreviated Applications based on the evaluation criteria (see Section V.1. of this NOFO). An aggregated ranking will then be derived based on the numerical average of the individual reviewers' rankings. This aggregated ranking will then be provided to the Selecting Official for further consideration.

The Selecting Official, who is the Chief of the Quantum Measurement Division of the Physical Measurement Laboratory, will then select approximately four (4) to six (6) finalists based upon the aggregated rank order. The Selecting Official may select an Abbreviated Application out of rank order based upon the selection factors in Section V.2. of this NOFO.

(2) Full Applications. Each Full Application submitted by an applicant whose Abbreviated Application was selected as a finalist will be reviewed by the same independent reviewers that reviewed the Abbreviated Applications. The reviewers may discuss the applications with each other, but rankings will be determined on an individual basis, not as a consensus. Each reviewer will create a rank order of the Abbreviated Applications based on the evaluation criteria (see Section V.1. of this NOFO). An aggregated ranking will then be derived based on the numerical average of the individual reviewers' rankings. This aggregated ranking will then be provided to the Selecting Official for further consideration.

The Selecting Official, who is the Chief of the Quantum Measurement Division of the Physical Measurement Laboratory, will then select and recommend applications for funding based upon the aggregated rank order. The Selecting Official may select a Full Application out of rank order based upon the selection factors in Section V.2. of this NOFO.

NIST reserves the right to negotiate the budget costs with the applicants that have been selected to receive awards, which 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. For international applications, NIST will follow applicable U.S. laws and policies. 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. The final approval of selected applications and issuance of

awards will be by the NIST Grants Officer. The award decisions of the NIST 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, reports and finding from financial assistance audits, 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 obligation 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 Dates.** Award processing is expected to be completed in August 2018. The earliest anticipated start date for awards under this NOFO is expected to be October 1, 2018.

5. Additional Information

- a. Notification to Unsuccessful Applicants.** Unsuccessful applicants will be notified by e-mail.
- b. Notification to Finalists.** Applicants whose Abbreviated Applications are selected by NIST as "finalists" will be notified by e-mail and invited by NIST to submit Full Applications.
- c. Retention of Unsuccessful Applications.** All applications, whether successful or unsuccessful, are retained in the NIST Grants Management and Information System for at least three years.

VI. Federal Award Administration Information

- 1. Federal Award Notices.** Successful applicants will receive an award package

from the NIST Grants Officer.

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 the 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 March 31, 2017, accessible at <https://go.usa.gov/xXRxK>, to this award. Applicants should refer to Section VII. of this NOFO, Federal Awarding Agency Contacts, Grant Rules and Regulations, if they seek the information at this link and it is no longer working or if they 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>. Applicants should refer to Section VII. of this NOFO, Federal Awarding Agency Contacts, Grant Rules and Regulations, if they seek the information at this link and it is no longer working or if they need further information.
- d. **Funding Availability and Limitation of Liability.** Funding for the program listed in this NOFO is contingent upon the availability of Fiscal Year 2018 appropriations. NIST issues this notice subject to the appropriations made available under the current continuing resolution funding the Department of Commerce, Division D of Continuing Appropriations Act, 2018 and Supplemental Appropriations for Disaster Relief Requirements Act, 2017, Public Law 115-56, September 08, 2017. NIST anticipates making awards for the program listed in this notice provided that funding for the program is continued beyond December 8, 2017, the expiration of the current continuing resolution.

In no event will NIST or the Department of Commerce be responsible for proposal preparation costs if these programs fail to receive funding or are cancelled because of agency priorities. Publication of this announcement does not obligate NIST or the Department of Commerce to award any specific project or to obligate any available funds.

- e. **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.

- f. 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 C.03 of the DoC Financial Assistance Terms and Conditions dated March 31, 2017, accessible at <https://go.usa.gov/xXRxK>. Questions about these requirements may be directed to Chief Counsel for NIST, (301) 975-2803, nistcounsel@nist.gov.

Any use of NIST-owned intellectual property by an applicant 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.

If any inventions made in whole or in part by a NIST employee arise in the course of an award made pursuant to this NOFO, the United States government may retain its ownership rights in any such invention. Licensing or other disposition of NIST's rights in such inventions will be determined solely by NIST, and include the possibility of NIST putting the intellectual property into the public domain.

- g. 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 that 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 (FDA), 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 activities.

Human Subject: A living individual about 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.** The NIST Human Subjects Protection Office (HSPO) reserves the right to conduct an administrative review⁵ of all applications that potentially include research involving human subjects and were approved by an authorized non-NIST institutional entity (an IRB or entity analogous to the NIST HSPO) under 15 C.F.R. § 27.112 (Review by Institution). If the NIST HSPO determines that an application includes research activities that potentially involve human subjects, the applicant will be required to provide additional information to NIST for review and approval. The documents required for funded proposals are listed in each section below. Most 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. Research involving human subjects may not start until the NIST Grants Officer issues an award explicitly authorizing such research. In addition, all amendments, modifications, or changes to approved research and requests for continuing review and closure will be reviewed by the NIST HSPO.
- 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

⁵ Conducting an “administrative review” means that the NIST HSPO will review and verify the performing institution’s determination for research not involving human subjects or exempt human subjects research. In addition, for non-exempt human subjects research, the NIST HSPO will review and confirm that the research and performing institution(s) are in compliance with 15 C.F.R. Part 27, which means HSPO will 1) confirm the engaged institution(s) possess, or are covered under a Federalwide Assurance, 2) review the research study documentation submitted to the IRB and verify the IRB’s determination of level of risk and approval of the study for compliance with 15 C.F.R. Part 27, 3) review and verify IRB-approved substantive changes to an approved research study before the changes are implemented, and 4) review and verify that the IRB conducts an appropriate continuing review at least annually.

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. Research not involving human subjects. If an activity/task is determined to be research and involves human subjects, but is determined to be *not human subjects research* (or *research not involving human subjects*) under 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 research not involving human subjects, 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.

c. 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.

- (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.

d. 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).

h. Research Activities Involving Live Vertebrate Animals or Pre-Existing Cell Lines/Tissues From Vertebrate Animals. Any application that proposes research activities involving live vertebrate animals that are to be cared for, euthanized, or used by award recipients 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 Nonclinical Laboratory Studies (21 C.F.R. Part 58). In addition, such research activities should be in compliance with the “*U.S. Government Principles for Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training*” (Principles). 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>.

1) Administrative Review. NIST reserves the right to conduct an administrative review⁶ of all applications that potentially include research activities that involve live vertebrate animals, or custom samples from, or field studies with live vertebrate animals. If 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. In addition, NIST will verify the applicant's determination(s) of excluded samples from vertebrate animals. 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 shall be initiated or costs incurred for those activities under the award until the NIST Grants Officer issues written approval. In addition, all re-approvals, amendments, modifications, changes, annual reports and closure will be reviewed by NIST.

2) Required documents for NIST 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. In addition, the applicant should indicate any activity/task that involves an excluded or custom collection from vertebrate animals, or a field study with animals.*

a) **Excluded Collections from Vertebrate Animals:** The requirements for review and approval by an Institutional Animal Care and Use Committee (IACUC) 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 or pre-existing items from animal material suppliers (e.g., tissue banks), such as pre-existing cell lines and tissue samples, or from commercial food processors, where the

⁶ Conducting an "administrative review" means that the NIST HSPO will review and verify the performing institution's IACUC's approval of research with live vertebrate animals, and confirm that the research and performing institution(s) have an appropriate assurance and are in compliance with applicable regulations. HSPO will 1) confirm the engaged institution(s) possess, or are covered under an applicable assurance, 2) review the research study documentation submitted to the IACUC and verify the IACUC's determination of level of risk and approval of the study for compliance with applicable regulations, 3) review and verify IACUC-approved substantive changes to an approved research study before the changes are implemented, and 4) review and verify that the IACUC receives an annual report for the study and conducts an appropriate continuing review at least every three years.

vertebrate animal was euthanized for food purposes and not for the purpose of sample collection.

For pre-existing cell lines and tissue samples originating from vertebrate animals, NIST requires that the proposer provide documentation or the rationale for the determination that the cell line or tissue is pre-existing and not a custom collection from live vertebrate animals for an activity/task within the proposal. NIST may require additional documentation to review and/or support the determination that the cells and/or tissues from vertebrate animals are excluded from IACUC review.

- b) **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.). A custom sample 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.
- c) **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...”. 9 C.F.R. § 1.1. 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 (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.
- d) **For custom collections or studies with live vertebrate animals that require review and approval by an animal care and use committee the following documentation is required:**
 - (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 may request documentation to confirm an assurance, if adequate confirmation is not available through an assuring organization’s website. The cognizant IACUC where the research activity is located may hold one or more assurances applicable to the research activity that are acceptable to NIST. These three assurances are:
 - i. Animal Welfare Assurance from the Office of Laboratory Animal Welfare (OLAW) indicated by the OLAW assurance number, *i.e.*, A-1234;

- ii. USDA Animal Welfare Act certification indicated by the certification number, *i.e.*, 12-R-3456;
- iii. 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) **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.
- 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).

- i. Collaborations Making Use of Federal Facilities.** All applications should include a description of any work proposed to be performed using Federal facilities.

If an applicant proposes use of NIST facilities, the statement of work should include a statement of this intention and a description of the facilities. Any use of NIST facilities 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 availability of the facilities and approval of the proposed usage. Any unapproved facility use will be stricken from the application prior to the merit review. Examples of some facilities that may be available for collaborations are listed on the following NIST Web site: <https://www.nist.gov/labs-major-programs/user-facilities>.

- j. Safety.** Safety is a top priority at NIST. Awardees participating in the NIST PMGP Program that make use of NIST facilities are expected to be safety-conscious, attend NIST safety training(s), and comply with all NIST safety policies and procedures.

3. Reporting

- a. Reporting Requirements.** The following reporting requirements described in Sections A.01, Reporting Requirements, of the Department of Commerce Financial Assistance Standard Terms and Conditions dated March 31, 2017, <https://go.usa.gov/xXRxK>, 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 semi-annual basis for the periods ending March 31 and September 30 of each year to the NIST Grants Officer and Grants Specialist named in the award documents. Reports will be due within 30 days after the end of the reporting period.

(2) Performance (Technical) Report. Each award recipient will be required to submit a technical progress report on a semi-annual basis for the periods ending March 31 and September 30 of each year. The Technical Progress Report shall be submitted to the Federal Program Officer, the NIST Grants Officer, and the Grants Specialist named in the award documents. Technical progress reports shall contain information as prescribed in 2 C.F.R. § 200.328 (<http://go.usa.gov/xkVgP>) and Department of Commerce Standard Terms and Conditions, Section A.01 (<https://go.usa.gov/xXRxK>). 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, and publication citation information as well as links to publicly available data shall be submitted as soon as they become available.

If a recipient's Data Management Plan (DMP) has changed since their last submission of a technical progress report, the recipient must include their revised DMP in the next technical progress report following the revision to the DMP. The revised DMP must include all the requirements described in Section IV.2.b.(9). of this NOFO.

(3) Patent and Property Reports. From time to time, and in accordance with the Uniform Administrative Requirements 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 NOFO, 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>.

VII. Federal Awarding Agency Contacts

Questions should be directed to the following contact persons:

Subject Area	Point of Contact
Programmatic and Technical Questions	Dr. Peter J. Mohr Phone: (301) 975-3217 E-mail: mohr@nist.gov
Technical Assistance with Grants.gov Submissions	Christopher Hunton Phone: 301-975-5718 Fax: (301) 975-6368 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 E-mail: dean.iwasaki@nist.gov

VIII. Other Information

1. Personal and Business Information. The applicant acknowledges and understands that information and data contained in applications for financial assistance, as well as information and data contained in financial, performance and other reports submitted by applicants, may be used by the Department of Commerce in conducting reviews and evaluations of its financial assistance programs. For this purpose, applicant information and data may be accessed, reviewed and evaluated by Department of Commerce employees, other Federal

employees, and also by Federal agents and contractors, and/or by non-Federal personnel, all of whom enter into appropriate conflict of interest and confidentiality agreements covering the use of such information. As may be provided in the terms and conditions of a specific financial assistance award, applicants are expected to support program reviews and evaluations by submitting required financial and performance information and data in an accurate and timely manner, and by cooperating with Department of Commerce and external program evaluators. In accordance with 2 C.F.R. § 200.303(e), applicants are reminded that they must take reasonable measures to safeguard protected personally identifiable information and other confidential or sensitive personal or business information created or obtained in connection with a Department of Commerce financial assistance award.

In addition, Department of Commerce regulations implementing the Freedom of Information Act (FOIA), 5 U.S.C. Sec. 552, are found at 15 C.F.R. Part 4, Public Information. These regulations set forth rules for the Department regarding making requested materials, information, and records publicly available under the FOIA. Applications submitted in response to this Federal Funding Opportunity may be subject to requests for release under the Act. In the event that an application contains information or data that the applicant deems to be confidential commercial information that should be exempt from disclosure under FOIA, that information should be identified, bracketed, and marked as Privileged, Confidential, Commercial or Financial Information. In accordance with 15 CFR § 4.9, the Department of Commerce will protect from disclosure confidential business information contained in financial assistance applications and other documentation provided by applicants to the extent permitted by law.