

April 15, 2013

**AMENDED ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY FOR
MEASUREMENT SCIENCE FOR ADVANCED MANUFACTURING (MSAM)
SUMMARY OF AMENDMENT 1**

Background

On March 20, 2013, the National Institute of Standards and Technology (NIST) posted an Announcement of Federal Funding Opportunity (FFO) (2013-NIST-MSAM-01) on Grants.gov and on a NIST web site, http://www.manufacturing.gov/docs/msam_ffo.pdf, announcing the solicitation of proposals for fiscal year 2013 to advance innovation in measurement science for additive manufacturing. As set forth herein, NIST is issuing an Amendment (Amendment 1) to (1) clarify eligibility and multi-party participation in the "Who is Eligible" section of the Executive Summary on page 4 of the amended FFO below and in "Eligible Applicants," Section III.1 on page 7 of the amended FFO below, (2) extend the submission dates for Notices of Intent and full proposals in the "Dates" section of the Executive Summary on page 4 of the amended FFO below and in the "Submission Dates and Times," Section IV.3 and "Other Submission Requirements, Notice of Intent," Section IV.6.a on page 11 of the amended FFO below and (3) update the link to the Department of Commerce (DoC) Grants and Cooperative Agreements Manual in the "Award Information, Funding Instrument," Section II.1 on page 6 of the amendment FFO below.¹

Description of Amendment 1 to FFO

NIST is issuing an amendment (Amendment 1) to the FFO to:

(1) clarify eligibility and multi-party participation in the "Who is Eligible" section of the Executive Summary on page 4 of the amended FFO below and in "Eligible Applicants," Section III.1 on page 7 of the amended FFO below by: (1) changing the language in the first sentence of those sections to read, "Eligible applicants are any U.S. organization, excluding commercial organizations and federal entities, located within the United States, such as non-profit organizations, accredited U.S. institutions of higher education, and state, local, and tribal governments"; (2) changing the language in the third sentence of those sections to read, "In a team or consortium, eligible subawardees are the same types of organizations eligible to be applicants"; and (3) by adding a new fourth and fifth sentence in those sections, "Commercial organizations may participate in teams or consortia as contractors, or in unfunded roles such as informal collaborators or as third parties that help to accelerate project results or help move them into routine or commercial use. Federal entities may participate in teams or consortia as contractors, informal collaborators, or in other roles allowed by law, consistent with each entity's authorities, policies, and procedures."

The entire revised paragraphs are restated below for the public's convenience.

EXECUTIVE SUMMARY

Who is Eligible: *Eligible applicants are any U.S. organization, excluding commercial organizations and federal entities, located within the United States, such as non-profit organizations, accredited institutions of higher education, and state, tribal, and local governments. An eligible organization may work individually or include proposed subawardees, contractors or other collaborators in a project proposal, effectively forming a team or consortium. In a team or consortium, eligible subawardees are the same types of organizations eligible to be applicants. Commercial organizations may participate in teams or consortia as contractors, or in unfunded roles such as informal collaborators or as third parties that help to accelerate project results or help move them into routine or commercial use. Federal entities may participate in teams or consortia as contractors, informal collaborators, or in other roles allowed by law, consistent with each entity's authorities, policies, and procedures. An applicant may not submit more than one proposal. The NIST Hollings Manufacturing Extension Partnership, and its National Innovation Marketplace program, may be a useful resource for*

¹ All page number references are to the full text of the Amended FFO, including the revisions being made herein.

connecting applicants with potential subawardees, contractors or other collaborators.

III. Eligibility Information

1. Eligible Applicants. *Eligible applicants are any U.S. organization, excluding commercial organizations and federal entities, located within the United States, such as non-profit organizations, accredited institutions of higher education, and state, tribal, and local governments. An eligible organization may work individually or include proposed subawardees, contractors or other collaborators in a project proposal, effectively forming a team or consortium. In a team or consortium, eligible subawardees are the same types of organizations eligible to be applicants. Commercial organizations may participate in teams or consortia as contractors, or in unfunded roles such as informal collaborators or as third parties that help to accelerate project results or help move them into routine or commercial use. Federal entities may participate in teams or consortia as contractors, informal collaborators, or in other roles allowed by law, consistent with each entity's authorities, policies, and procedures. An applicant may not submit more than one proposal. The NIST Hollings Manufacturing Extension Partnership, and its National Innovation Marketplace program, may be a useful resource for connecting applicants with potential subawardees, contractors or other collaborators.*

(2) amend the submission dates for Notices of Intent by extending the submission date to Monday, April 22, 2013 and for electronic full proposals to 11:59 p.m. Eastern time, Tuesday, May 14, 2013, and for paper full proposals to 5:00 p.m. Eastern Time, Tuesday, May 14, 2013, in the "Dates" section of the Executive Summary on page 4 of the FFO below and in the "Submission Dates and Times," Section IV.3 and "Other Submission Requirements, Notice of Intent," Section IV.6.a on page 11 of the amended FFO below.

The entire revised paragraphs are restated below for the public's convenience.

EXECUTIVE SUMMARY

Dates: *Notices of Intent should be received no later than Monday, April 22, 2013. Submit an email stating your intent to apply to msam@nist.gov. This notice of intent is not required, but helps NIST better plan the review of applications. Notices of Intent received between April 12, 2013 and posting of this amendment (Amendment 1) are deemed timely.*

Electronic proposals must be received no later than 11:59 p.m. Eastern Time, Tuesday, May 14, 2013. Paper proposals must be received by NIST by 5:00 p.m. Eastern Time, Tuesday, May 14, 2013. Proposals received after the respective deadline will not be reviewed or considered. The anticipated start date for awards is expected to be October 1, 2013.

IV. Application/Proposal and Submission Information

3. Submission Dates and Times. *Notices of Intent should be received no later than Monday, April 22, 2013. Submit an email stating your intent to apply to msam@nist.gov. This notice of intent is not required, but helps NIST better plan the review of applications. Notices of Intent received between April 12, 2013 and posting of this amendment (Amendment 1) are deemed timely.*

Electronic proposals must be received no later than 11:59 p.m. Eastern Time, Tuesday, May 14, 2013. Paper proposals must be received by NIST by 5:00 p.m. Eastern Time, Tuesday, May 14, 2013. Proposals received after the respective deadline will not be reviewed or considered. The anticipated start date for awards is expected to be October 1, 2013.

6. Other Submission Requirements

a. Notice of Intent. Submit an email stating your intent to apply to msam@nist.gov. This notice of intent is not required, but helps NIST better plan the review of applications. Notices of Intent received between April 12, 2013 and posting of this amendment (Amendment 1) are deemed timely.

(3) **update** the link to the Department of Commerce (DoC) Grants and Cooperative Agreements Manual to [http://www.osec.doc.gov/oam/grants_management/policy/documents/FINAL%20Master%20DOC%20Grants%20Manual%202013%20\(03.01.13\)_b.pdf](http://www.osec.doc.gov/oam/grants_management/policy/documents/FINAL%20Master%20DOC%20Grants%20Manual%202013%20(03.01.13)_b.pdf) in the "Award Information, Funding Instrument," Section II.1. on page 6 of the amendment FFO below.

The entire revised paragraph is restated below for the public's convenience.

II. Award Information

- 1. Funding Instrument.** *The funding instrument used in this program will be a cooperative agreement. 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. Additional forms of substantial involvement that may arise are described in the Department of Commerce (DoC) Grants and Cooperative Agreements Manual, which is available at: [http://www.osec.doc.gov/oam/grants_management/policy/documents/FINAL%20Master%20DOC%20Grants%20Manual%202013%20\(03.01.13\)_b.pdf](http://www.osec.doc.gov/oam/grants_management/policy/documents/FINAL%20Master%20DOC%20Grants%20Manual%202013%20(03.01.13)_b.pdf).*

No other revisions are being made by this amendment. The full text of the Amended FFO, including the revisions being made herein, is set forth below.

04/15/13

**ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY (FFO)
Measurement Science for Advanced Manufacturing (MSAM)
Cooperative Agreement Program (CAP)**

EXECUTIVE SUMMARY

- **Federal Agency Name:** National Institute of Standards and Technology (NIST), United States Department of Commerce (DoC)
- **Funding Opportunity Title:** Measurement Science for Advanced Manufacturing (MSAM) Cooperative Agreement Program (CAP)
- **Announcement Type:** Initial
- **Funding Opportunity Number:** 2013-NIST-MSAM-01
- **Catalog of Federal Domestic Assistance (CFDA) Number:** 11.609, Measurement and Engineering Research and Standards
- **Dates:** Notices of Intent should be received no later than Monday, April 22, 2013. Submit an email stating your intent to apply to msam@nist.gov. This notice of intent is not required, but helps NIST better plan the review of applications. Notices of Intent received between April 12, 2013 and posting of this amendment (Amendment 1) are deemed timely.

Electronic proposals must be received no later than 11:59 p.m. Eastern Time, Tuesday, May 14, 2013. Paper proposals must be received by NIST by 5:00 p.m. Eastern Time, Tuesday, May 14, 2013. Proposals received after the respective deadline will not be reviewed or considered. The anticipated start date for awards is expected to be October 1, 2013.

- **Proposal Submission Address:** See Section IV in the Full Announcement Text of this FFO.
- **Funding Opportunity Description:** NIST is soliciting proposals for financial assistance for fiscal year (FY) 2013 from eligible applicants to advance innovation in measurement science for additive manufacturing. Proposals should address development of measurement science to support high-priority metrology and standards required to advance U.S. technical programs, technology transition, and commercial activities in additive manufacturing technology.
- **Total Amount to be Awarded:** Approximately \$5,000,000 may be available in FY 2013 (FY 13) funds, to fund one or more award(s) with project periods of up to two years. See Section II in the Full Announcement Text of this FFO.
- **Anticipated Amounts:** See Section II in the Full Announcement Text of this FFO.
- **Funding Instrument:** Cooperative agreement
- **Who is Eligible:** Eligible applicants are any U.S. organization, excluding commercial organizations and federal entities, located within the United States, such as non-profit organizations, accredited institutions of higher education, and state, tribal, and local governments. An eligible organization may work individually or include proposed subawardees, contractors or other collaborators in a project proposal, effectively forming a team or consortium. In a team or consortium, eligible subawardees are the same types of organizations eligible to be applicants. Commercial organizations may participate in teams or consortia as contractors, or in unfunded roles such as informal collaborators or as third parties that help to accelerate project results or help move them into routine or commercial use. Federal entities may participate in teams or consortia as contractors, informal collaborators, or in other roles allowed by law, consistent with each entity's authorities, policies, and procedures. An

applicant may not submit more than one proposal. The NIST Hollings Manufacturing Extension Partnership, and its National Innovation Marketplace program, may be a useful resource for connecting applicants with potential subawardees, contractors or other collaborators.²

- **Cost Sharing Requirements:** This program does not require cost sharing.

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FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

The statutory authorities for the Measurement Science for Advanced Manufacturing (MSAM) Cooperative Agreement Program (CAP) are 15 U.S.C. § 272(b) and (c).

Program Description: The MSAM CAP provides financial assistance to advance innovation in measurement science for additive manufacturing, a set of revolutionary manufacturing technologies for fabricating parts, and potentially entire systems, typically in a layer-by-layer fashion, by placing material precisely as directed by a 3D digital design file. Additive Manufacturing is the process of joining materials to make objects from 3D model data, usually layer upon layer, as opposed to subtractive manufacturing methodologies, such as traditional machining. Synonyms include: 3D printing, direct part manufacturing, layered manufacturing, and freeform fabrication, among others.

This announcement solicits proposals that address development of measurement science to support high-priority metrology and standards required to advance U.S. technical programs and ongoing national investments, technology transition, and commercial activities in additive manufacturing technology. The term measurement science is used in the context of creating critical solution-enabling tools – metrics, models, and knowledge – for U.S. manufacturers. Measurement science includes the following activities and their associated products and outputs:

- 1) Development of performance test methods and metrics, measurement methods, predictive models and simulation tools, knowledge models, protocols, technical data, reference materials, and/or test artifacts;
- 2) Conduct of inter-comparison studies and calibrations;
- 3) Evaluation of technologies, systems, and practices, including uncertainty analysis; and
- 4) Development of the technical basis for standards, codes, and practices.

Proposals shall identify and address high-priority measurement science research challenges, technical barriers, and related research and development gaps that prevent widespread use of Additive

² Information about the NIST Hollings Manufacturing Extension Partnership and its National Innovation Marketplace may be found online at: <http://www.nist.gov/mep/nim.cfm>.

Manufacturing technologies and systems by U.S. manufacturers and its supply chain. Proposals shall identify the applied measurement science solutions and the project's products and outputs that will be delivered. The measurement science program and projects being proposed should be applicable to Technology and Manufacturing Readiness Levels (TRL)³ 4-7, that overcome these barriers, challenges, and gaps. Proposals should provide a clear description of how the project's products and outputs will accelerate widespread additive manufacturing technology transition, including the U.S. metrology equipment supply industry and commercial activities by U.S. manufacturers. Proposals should identify the methods and mechanisms by which the applicant will coordinate its efforts and engage with stakeholders, such as the National Additive Manufacturing Innovation Institute (NAMII).

Proposals shall present an organizational structure and technical pathways to realize advancements in measurement science and research across several technical areas, including any of the following, or combinations of the following:

Technology Areas

- 1) Equipment capability and characterization;
- 2) Process capability and characterization;
- 3) Materials understanding, testing, and performance;
- 4) Product quality;
- 5) Qualification and certification of materials, equipment, processes, and parts;
- 6) Process measurement, optimization, and real time control;
- 7) Modeling and simulation; or
- 8) Open architecture system management and control.

In addition, proposals shall focus on any of the following, or combinations of the following, additive manufacturing component areas to most strongly leverage ongoing federal investments: metallic components; polymeric/composite components; and electronic components.

The contact person for this program is Frank Gayle, and he may be reached at (301) 975-2830 or by e-mail at frank.gayle@nist.gov.

II. Award Information

- 2. Funding Instrument.** The funding instrument used in this program will be a cooperative agreement. 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. Additional forms of substantial involvement that may arise are described in the Department of Commerce (DoC) Grants and Cooperative Agreements Manual, which is available at: [http://www.osec.doc.gov/oam/grants_management/policy/documents/FINAL%20Master%20DOC%20Grants%20Manual%202013%20\(03.01.13\)_b.pdf](http://www.osec.doc.gov/oam/grants_management/policy/documents/FINAL%20Master%20DOC%20Grants%20Manual%202013%20(03.01.13)_b.pdf).
- 3. Funding Availability.** NIST anticipates funding one or more awards totaling up to \$5,000,000 over a project performance period of up to two (2) years, subject to the availability of funds. A proposed project should not exceed \$5,000,000 over two years, and projects of smaller size will be considered. NIST will determine the number of awards selected and whether projects will be funded in whole or in part taking into account the effective fulfillment of program objectives and in accordance with the review and selection process in Section V.2 of this FFO.
- 4. Multi-Year Funding Policy.** When a proposal 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

³ Technology Readiness Level (TRL) and Manufacturing Readiness Level (MRL) are measures used to assess the maturity of evolving technologies (devices, materials, components, manufacturing processes, etc.) during its development and testing operations, and to assess the maturity of manufacturing readiness, respectively. A general description can be found online from a variety of sources, including, but not limited to the following: http://en.wikipedia.org/wiki/technology_readiness_level, http://en.wikipedia.org/wiki/manufacturing_readiness_level.

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 NIST advanced manufacturing programs, and the availability of funds.

III. Eligibility Information

- 1. Eligible Applicants.** Eligible applicants are any U.S. organization, excluding commercial organizations and federal entities, located within the United States, such as non-profit organizations, accredited institutions of higher education, and state, tribal, and local governments. An eligible organization may work individually or include proposed subawardees, contractors or other collaborators in a project proposal, effectively forming a team or consortium. In a team or consortium, eligible subawardees are the same types of organizations eligible to be applicants. Commercial organizations may participate in teams or consortia as contractors, or in unfunded roles such as informal collaborators or as third parties that help to accelerate project results or help move them into routine or commercial use. Federal entities may participate in teams or consortia as contractors, informal collaborators, or in other roles allowed by law, consistent with each entity's authorities, policies, and procedures. An applicant may not submit more than one proposal. The NIST Hollings Manufacturing Extension Partnership, and its National Innovation Marketplace program, may be a useful resource for connecting applicants with potential subawardees, contractors or other collaborators.¹
- 2. Cost Sharing or Matching.** Cost sharing or matching is not required.
- 3. Other**

Pre-Proposals. NIST is not accepting pre-proposals or white papers under the MSAM CAP listed in this FFO.

IV. Application/Proposal and Submission Information

- 1. Address to Request Application Package.** The standard application package, consisting of the standard forms, i.e., SF-424, SF-424A, SF-424B, SF-LLL, and the CD-511, is available at www.grants.gov. For applicants without Internet access, the standard application package may be requested by contacting the MSAM CAP office personnel listed below.

Kerry Miles, National Institute of Standards and Technology, 100 Bureau Drive, Stop 4700, Gaithersburg, MD 20899-2100 (Phone: (301) 975-5571, email: kerry.miles@nist.gov).

2. Content and Format of Application/Proposal Submission

a. Required Forms and Documents

- (1) SF-424, Application for Federal Assistance. The SF-424 must be signed by an authorized representative of the applicant organization. The FFO number 2013-NIST-MSAM-01 should be identified in item 12 of the SF-424. The list of certifications and assurances referenced in item 21 of the SF-424 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, considering all potential cost increases, including cost of living adjustments.)
- (3) SF-424B, Assurances – Non-Construction Programs
- (4) CD-511, Certification Regarding Lobbying
- (5) SF-LLL, Disclosure of Lobbying Activities (if applicable)

- (6) **Technical Proposal.** The Technical Proposal is a word-processed document, responsive to the program description (see Section I. of this FFO) and the evaluation criteria (see Section V.1. of this FFO). See Section IV.2.b. for proposal format requirements.

The Technical Proposal should contain the following information:

- a) **Executive Summary.** A concise description of the project that is consistent with the evaluation criteria (see Section V.1. of this FFO) and should not exceed one (1) single-sided page.
 - b) **Proposed Research Program.** A description sufficient to permit evaluation of the proposal in accordance with the Quality of the Proposed Research Program evaluation criterion (see Section V.1.(1) of this FFO).
 - c) **Technical Plan and Qualifications of the Applicant to Perform the Work.** A description sufficient to permit evaluation of the proposal in accordance with the Technically Sound Plan to Perform the Work evaluation criterion (see Section V.1.(2) of this FFO).
 - d) **Stakeholder Engagement Plan and Evaluation of Impacts.** A description sufficient to permit evaluation of the proposal in accordance with the Stakeholder Engagement Plan and Evaluation of Impacts evaluation criterion (see Section V.1.(3) of this FFO).
 - e) **Resource Availability.** A description of how the proposed budget and resource availability is matched to the proposed work, sufficient to permit evaluation of the proposal in accordance with the Match of the Budget to Proposed Work evaluation criterion (see Section V.1.(4) of this FFO).
- (7) **Budget Narrative.** The Budget Narrative should 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). The written justification should include the necessity and the basis for the cost. Only allowable costs should be included in the budget. Information on cost allowability is available in the Supplemental Information, section B.1 of the DoC Pre-Award Notification Requirements for Grants and Cooperative Agreements, which are contained in the Federal Register notice of December 17, 2012 (77 FR 74634), and are available at <https://www.federalregister.gov/articles/2012/12/17/2012-30228/departments-of-commerce-pre-award-notification-requirements-for-grants-and-cooperative-agreements>. 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 hours or effort level), salary rate, and 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 (health insurance, parking) 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.) that is charged directly to the award, should be allocated to the award according to expected usage on the project.

- d) **Travel** - For travel costs associated with travel required by the recipient to complete the project, the budget justification for travel should include the following: destination; names/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 travel.
- 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.
- 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.

If a recipient has never received Federal funding from any Federal agency, a certification may be required from a CPA to determine whether the applicant has a functioning financial management system that meets the provisions of 15 C.F.R. § 14.21. Therefore, costs for such an inquiry and certification should be included in the budget accordingly.

- (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.
- (9) **Resumes of Key Personnel** (these do not contribute to the total number of pages). Provide a one (1) page resume for each key person identified in the proposal. Information on any pages beyond the first page of each resume will not be considered.
- (10) **Required Letters of Commitment** – Letters that commit specific resources to the project in the event that the proposal is funded are required from all of the following that apply (these do not contribute to the total number of pages):
 - a) If the applicant's proposal includes subawards or contracts to third parties, in some cases effectively forming a team, as described in Section III.I, letters of commitment by an authorized organization representative from proposed subawardees and contractors should be included. Each letter should indicate the submitting organization's willingness to participate as a contractor or subawardee and describe what work they will do and the associated cost to the applicant (see Section I of this FFO).
 - b) If key personnel are identified by the applicant and are willing to fill vacancies on the applicant's staff, letters of commitment from the identified persons should be included. The letters from such individuals, or groups of individuals, should indicate the relationship of the writer to the applicant and how the writer will help fulfill the efforts described in the Funding Opportunity Description (see Section I of this FFO).

Letters of commitment should not be letters submitted by non-proposing entities wishing to vouch for the applicant's (or entities associated with the applicant) knowledge, skills, and abilities or entities to conduct the proposed work. These should be in the form of a letter of support (see

Section IV.2.a.11 of this FFO).

- (11) **Letters of Interest - Optional** (these do not contribute to the total number of pages) letters that indicate a willingness from any third party that will help accelerate project results and/or move them into routine or commercial use. This includes letters from any non-federal third party that will help to accelerate the project results and/or move them into routine or commercial use. This may include letters from potential investors who indicate a strong interest in evaluating the results of a project for possible funding, or strategic partners who can aid in any element of the plan to realize impact.

If submitting the proposal electronically via Grants.gov, 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.(11) 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 indicating a proposal is received does not provide information about whether attachments have been received.

If submitting a proposal by paper, all of the required proposal documents should be submitted in the order listed above.

b. Proposal Format

- (1) **Cover Page.**
- (2) **Double-sided copy.** For paper submissions, print on both sides of the paper (front to back counts as two (2) pages).
- (3) **E-mail and facsimile (fax) submissions.** Will not be accepted.
- (4) **Number of paper copies.** For paper submissions, one (1) signed stapled original and two (2) stapled copies. If original proposal is in color, the two (2) copies must also be in color. If submitting electronically via Grants.gov, paper copies are not required.
- (5) **Figures, graphs, images, and pictures.** Should be of a size that is easily readable or viewable and may be landscape orientation.
- (6) **Font.** Easy to read font such as Times New Roman or Arial font (11-point minimum), single space allowed. Smaller type may be used in figures and tables but must be clearly legible.
- (7) **Page layout.** The Technical Proposal (Section IV.2.a.(6)) must be in portrait orientation except for figures, graphs, images, and pictures. Paragraphs are to be clearly separated from each other by double spacing paragraph formatting or equivalent. Margins should be of one (1) inch top, bottom, left, and right.
- (8) **Page Limit.** The Technical Proposals are limited to thirty (30) pages. Information on pages beyond the page limit will not be considered.
 - a) Page limit includes: Table of contents (if included), Technical Proposal with all required sections, including management information and qualifications, figures, graphs, tables, images, and pictures.
 - b) Page limit excludes: Cover page, 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, the timeline tool, resumes, bibliographic list of references; table of abbreviations; letters of commitment;

letters of support; and any human subjects and/or vertebrate animal research documentation.

(9) Page numbering. Number pages sequentially.

(10) Proposal language. English.

(11) Staple paper submission. For paper submissions, staple the original signed proposal and each of the two (2) copies securely with one (1) staple in the upper left-hand corner.

(12) Typed document. All proposals, including forms, must be typed; handwritten proposals and forms will not be accepted.

- 3. Submission Dates and Times.** Notices of Intent should be received no later than Monday, April 22, 2013. Submit an email stating your intent to apply to msam@nist.gov. This notice of intent is not required, but helps NIST better plan the review of applications. Notices of Intent received between April 12, 2013 and posting of this amendment (Amendment 1) are deemed timely.

Electronic proposals must be received no later than 11:59 p.m. Eastern Time, Tuesday, May 14, 2013. Paper proposals must be received by NIST by 5:00 p.m. Eastern Time, Tuesday, May 14, 2013. Proposals received after the respective deadline will not be reviewed or considered. The anticipated start date for awards is expected to be October 1, 2013

- 4. Executive Order 12372 (Intergovernmental Review of Federal Programs).** Proposals under all Programs in this FFO are not subject to Executive Order 12372.

- 5. Funding Restrictions.** Proposals on product development and commercialization are not considered responsive to this FFO. Profit or fee is not an allowable cost.

6. Other Submission Requirements

- a. Notice of Intent.** Submit an email stating your intent to apply to msam@nist.gov. This notice of intent is not required, but helps NIST better plan the review of applications. Notices of Intent received between April 12, 2013 and posting of this amendment (Amendment 1) are deemed timely.

b. Proposals may be submitted by paper or electronically.

- (1) Paper proposals must be submitted in triplicate (an original and two copies) and submitted to the program personnel identified in Section IV.1 of this FFO.

- (2) Electronic proposals must be submitted via Grants.gov at www.grants.gov, under announcement 2013-NIST-MSAM-01.

- a) Submitters of electronic proposals 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 a proposal is received does not provide information about whether attachments have been received. For further information or questions regarding applying electronically for the 2013-NIST-MSAM-01 announcement, contact Christopher Hunton by phone at 301-975-5718 or by e-mail at christopher.hunton@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 a proposal 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 Dun and Bradstreet Data Universal Numbering System (DUNS) number (See Section VI.2.b) 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. After registering, it may take several days or longer from the initial log-on before a new Grants.gov system user can submit a proposal. Only authorized individual(s) will be able to submit the proposal, and the system may need time to process a submitted proposal. 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) Information essential to successful submission of proposals on the Grants.gov system is detailed in the For Applicants section found in red on the left side of the www.grants.gov home page, and all potential applicants should pay close attention to the information contained therein. The All About Grants, Applicant FAQs, and Submit Application FAQs sections found under the Applicant Resources option are particularly important.

All applicants, both electronic and paper submitters, should be aware that adequate time must be factored into applicants' schedules for delivery of their proposal. Submitters of electronic proposals are advised that volume on Grants.gov may be extremely heavy on the deadline date, and if Grants.gov is unable to accept proposals electronically in a timely fashion, applicants are encouraged to exercise their option to submit proposals in paper format. Submitters of paper proposals should allow adequate time to ensure a paper proposal will be received on time, taking into account that Federal Government security screening for U.S. Postal Service mail may delay receipt of mail for up to two (2) weeks and that guaranteed express mailings and/or couriers are not always able to fulfill their guarantees.

Refer to important information in Section IV.3. Submission Dates and Times, to help ensure your proposal is received on time.

- c. **Amendments.** Any amendments to this FFO will be announced through Grants.gov. Applicants can sign up for Grants.gov FFO amendments, or may request copies from Kerry Miles by telephone at (301) 975-5571 or by email to kerry.miles@nist.gov to request copies.

V. Application/Proposal Review Information

1. Evaluation Criteria

The evaluation criteria that will be used in evaluating these proposals and assigned weights are as follows:

- (1) Proposed Research Program.** The quality and scientific and technical merit of the proposed research program will be evaluated by assessing the clarity, rationality, innovation, and feasibility of the proposal. The extent to which the applicant demonstrates the proposed research program is aligned with NIST advanced manufacturing programs, as presented on the web at <http://www.nist.gov/manufacturing-portal.cfm>, and the objectives of this FFO (see Section I of this FFO) will be evaluated. The degree to which the proposal aims to overcome important problem(s), recognized gaps, or exploit promising opportunities in advanced manufacturing and the additive manufacturing objectives of this FFO will be evaluated. The degree to which the proposal has a strong potential to significantly advance the state of the art measurement science in advanced manufacturing, contribute to the U.S. scientific and technical knowledge base, and enhance U.S. manufacturing competitiveness as related to the additive manufacturing objectives of this FFO will also be evaluated. **(0 – 30 points)**
- (2) Technical Plan and Qualifications of the Applicant to Perform the Work.** The technical plan to perform the work should document the approaches to carrying out the proposed project, and should address the questions “what, how, where, when, why, and by whom” in substantial detail.

Measurable success criteria for the proposed efforts should be described and will be evaluated. Appropriate interim and final key quantitative milestones for each year of the technical plan should be provided. A timeline, preferably using a tool such as a Gantt chart, should be used to logically illustrate timing and interrelationships of major tasks and key subtasks. The quality of the timeline will be evaluated. In addition, the qualifications and experience of the applicant's organization and staff to carry out the objectives of the proposal as described in Section I of this FFO will be evaluated.

The extent to which the applicant has access to the necessary technical experts and overall support to accomplish the project objectives will be evaluated. The applicant's relevant knowledge, skills, and abilities to advance measurement science in advanced manufacturing and the additive manufacturing objectives of this FFO will be considered as part of this criterion. Information on past performance relevant to this project will also be considered as part of this criterion. Examples of key personnel past experiences should be provided and include experiences working with a wide variety of organizations, including scientific and engineering research organizations; accredited institutions of higher education; non-profit organizations; consortia; commercial organizations; standards development organizations and standards development processes.

Teaming and partnerships are encouraged. Thus, if a non-profit industry consortium is the applicant, a partnership should be proposed to engage universities for applied research. If contractors and/or subawardees are proposed to offer key expertise, access to facilities, or specialized goods and services, discuss what each brings to the project and what each will do. **(0 – 30 points)**

- (3) Stakeholder Engagement Plan and Evaluation of Impacts.** The extent to which the applicant demonstrates an understanding of stakeholders interested in furthering the program objectives as described in Section I of this FFO, and the plan for their engagement, will be evaluated. The extent to which the applicant's proposed methods and approach for stakeholder outreach or engagement includes but is not limited to small and medium-size firms, in advanced manufacturing will be evaluated. Detailed information on how the applicant plans to assess the nature and magnitude of potential impacts of the proposed project on stakeholders is required. This should include a description of expected impacts on national and international standards development. The degree to which the proposed project will enhance and strengthen education and workforce training within the scope of the objectives of the proposal as described in Section I of this FFO will be evaluated. The applicant should provide a strategic vision, plan, and timeline for how and when the research results from the proposed project will diffuse beyond the proposing organization through stakeholder(s) engagement into the U.S. technology base. In addition, the applicant should describe, if applicable, how results from the proposed project will provide the necessary core knowledge to commercialize the project's technical results. Note: Commercialization activities will not be funded under the cooperative agreement(s) but may be considered in the evaluation. **(0 – 25 points)**

- (4) Resource Availability.** An assessment of the budget against the proposed project scope and activities will be conducted to determine the practicality and cost-effectiveness of the proposed budget with respect to carrying out the work and objectives of the proposal as described in Section I of this FFO. The plan to obtain or leverage additional or external resources to accelerate the project results and/or move them into routine or commercial use should be described. The budget and budget narrative should only include the federal funds being requested. **(0 – 15 points)**

2. Review and Selection Process

- a. Initial Screening of all Program Proposals.** All proposals received in response to this FFO will be assigned to the NIST Office of the Chief Manufacturing Officer and reviewed to determine whether or not they are eligible, complete, and responsive to this FFO (see Section I in this FFO). Proposals determined to be ineligible, incomplete, and/or non-responsive based on this FFO may be eliminated from further review.

- b. Review of Eligible, Complete, and Responsive Proposals.** Proposals that are determined to be eligible, complete, and responsive will proceed for full review in accordance with the review and selection processes below.

At least three (3) independent, objective individuals knowledgeable about the particular scientific area described in the proposal will conduct a technical review of each proposal, based on the evaluation criteria (see Section V.1 of this FFO). If non-federal reviewers are used, the reviewers may discuss the proposals with each other, but scores will be determined on an individual basis, not as a consensus.

An Evaluation Panel will be established. The Evaluation Panel will consist of NIST staff and other federal agency representatives with appropriate technical expertise. The Evaluation Panel may ask questions of some or all applicants in writing and/or may require teleconferences with some or all applicants. Using the additional information obtained by the Evaluation Panel, taking into consideration the results of the reviewers' evaluations; program balance; and the relevance of a proposal to the program objectives described in Section I of this FFO, the Evaluation Panel will prepare and provide a final adjectival ranking of the proposals to the Selecting Official, the NIST Associate Director for Innovation and Industry Services, or designee, for further consideration. For decision-making purposes, proposals receiving the same adjectival rating will be considered to have an equivalent ranking, although their technical review scores, while comparable, will not necessarily be the same. The adjectival rankings are:

Fundable, Outstanding
Fundable, Very Good
Fundable
Unfundable

The Selecting Official will make final proposal selections. The Selecting Official shall select the most meritorious proposal(s) for award based upon the adjectival ranking of the proposals, and may select a proposal based on one or more of the following selection factors: the results of the reviewers' evaluations; the Evaluation Panel evaluation; the availability of funds; program balance; the relevance to the objectives described in Section I. of this FFO; and the relevance to NIST's advanced manufacturing programs, as presented on the web at <http://www.nist.gov/manufacturing-portal.cfm>.

In accordance with the Federal appropriations law expected to be in effect at the time of project funding, NIST anticipates that the selected applicant(s) will be provided a form and asked to make a representation regarding any unpaid delinquent tax liability or felony conviction under any Federal law.

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. NIST also reserves the right to reject a proposal where information is uncovered that raises a reasonable doubt as to the responsibility of the applicant. NIST may select part, some, all, or none of the proposals. The final approval of selected proposals and issuance of awards will be by the NIST Grants Officer. The award decisions of the Grants Officer are final.

- 3. Anticipated Announcement and Award Dates.** After review, selection, and award processing, the anticipated start date for awards is expected to be October 1, 2013.
- 4. Additional Information**
- a. Proposal Replacement Pages.** Applicants may not submit replacement pages and/or missing documents once a proposal has been submitted. Any revisions must be made by submission of a new proposal that must be received by NIST by the submission deadline.

- b. **Notification to Unsuccessful Applicants.** Unsuccessful applicants will be notified in writing.
- c. **Retention of Unsuccessful Proposals.** One (1) of each non-selected proposal will be retained for three (3) years for record keeping purposes and the other two (2) copies will be destroyed. After three (3) years, the remaining copy will be destroyed.

VI. Award Administration Information

- 1. **Award Notices.** Successful applicants will receive an award from the NIST Grants Officer. The award cover page, i.e., CD-450, Financial Assistance Award is available at http://ocio.os.doc.gov/s/groups/public/@doc/@os/@ocio/@oitpp/documents/content/dev01_002513.pdf and the DoC Financial Assistance Standard Terms and Conditions (January 2013) are available at http://www.osec.doc.gov/oam/grants_management/policy/documents/DOC_Standard_Terms_and_Conditions_01_10_2013.pdf.
- 2. **Administrative and National Policy Requirements**
 - a. **DoC Pre-Award Notification Requirements.** The DoC Pre-Award Notification Requirements for Grants and Cooperative Agreements, 77 FR 74634 (December 17, 2012), are applicable to this FFO and are available at <https://www.federalregister.gov/articles/2012/12/17/2012-30228/departement-of-commerce-pre-award-notification-requirements-for-grants-and-cooperative-agreements>.
 - b. **Employer/Taxpayer Identification Number (EIN/TIN), Dun and Bradstreet Data Universal Numbering System (DUNS), and System for Award Management (SAM).** All applicants for Federal financial assistance are required to obtain a universal identifier in the form of DUNS number and maintain a current registration in the Federal government's primary registrant database, SAM. On the form SF-424 items 8.b. and 8.c., the applicant's 9-digit EIN/TIN and 9-digit DUNS number must be consistent with the information in SAM (<https://www.sam.gov/>) and Automated Standard Application for Payment System (ASAP). For complex organizations with multiple EIN/TIN and DUNS numbers, the EIN/TIN and DUNS numbers MUST be the numbers for the applying organization. Organizations that provide incorrect/inconsistent EIN/TIN and DUNS numbers may experience significant delays in receiving funds if their proposal is selected for funding. Confirm that the EIN/TIN and DUNS number are consistent with the information on the SAM and ASAP.

Per 2 C.F.R. Part 25, each applicant must:

- (1) Be registered in the CCR before submitting a proposal noting the CCR now resides in SAM;
- (2) Maintain an active CCR registration, noting the CCR now resides in SAM, with current information at all times during which it has an active Federal award or a proposal under consideration by an agency; and
- (3) Provide its DUNS number in each application or proposal it submits to the agency.

The applicant can obtain a DUNS number from Dun and Bradstreet. A DUNS number can be created within one business day. The CCR or SAM registration process may take five or more business days to complete. If you are currently registered with the CCR, you may not need to make any changes. However, please make certain that the TIN associated with your DUNS number is correct. Also note that you will need to update your CCR registration annually. This may take three or more business days to complete. Information about SAM is available at SAM.gov. See also 2 C.F.R. Part 25 and the Federal Register notice published on September 14, 2010, at 75 FR 55671.

- c. **Collaborations with NIST Employees.** All proposals 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 proposal prior to the merit review.

- d. **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, 15 C.F.R. § 14.36, and in Section B.21 of the DoC Pre-Award Notification Requirements, 77 FR 74634 (December 17, 2012). Questions about these requirements may be directed to the Chief Counsel for NIST, (301) 975-2803.

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 FFO, 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.

- e. **Research Projects Involving Human Subjects, Human Tissue, Data or Recordings Involving Human Subjects Including Software Testing.** Any proposal that includes research involving human subjects, human tissue/cells, data or recordings involving human subjects, including software testing, must meet the requirements of the Common Rule for the Protection of Human Subjects ("Common Rule"), codified for the Department of Commerce (DoC) at 15 C.F.R. Part 27. In addition, any such application that includes research on these topics must be in compliance with any statutory requirements imposed upon the Department of Health and Human Services (DHHS) and other Federal agencies regarding these topics, all regulatory 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 these topics.

NIST reserves the right to make an independent determination of whether an applicant's research involves human subjects. If NIST determines that your research project involves human subjects, you will be required to provide additional information for review and approval. If an award is issued, no research activities involving human subjects shall be initiated or costs incurred under the award until the NIST Grants Officer issues written approval. Retroactive approvals are not permitted.

NIST will accept applications that include exempt and non-exempt human subjects research activities. Non-exempt human subjects research activities will be required to have protocols approved by an Institutional Review Board (IRB) currently registered with the Office for Human Research Protections (OHRP) within the DHHS and that will be performed by entities possessing a currently valid Federal-wide Assurance (FWA) on file from OHRP that is appropriately linked to the cognizant IRB for the protocol. Information regarding how to apply for an FWA and register and IRB with OHRP can be found at <http://www.hhs.gov/ohrp/assurances/index.html>. ***The applicant should clearly indicate in the proposal, by separable task, all research activities believed to be exempt or non-exempt research involving human subjects and the expected institution(s) where the research activities involving human subjects may be conducted.***

Generally, NIST does not fund research involving human subjects in foreign countries. NIST will consider, however, the use of **preexisting** tissue, cells, or data from a foreign source on a limited basis if all of the following criteria are satisfied:

- (1) the scientific source is considered unique,
- (2) an equivalent source is unavailable within the United States,

- (3) an alternative approach is not scientifically of equivalent merit, and
- (4) the specific use qualifies for an exemption under the Common Rule.

Any award issued by NIST for the program announced in this FFO is required to adhere to all Presidential policies, statutes, guidelines, and regulations regarding the use of human embryonic stem cells. The DoC/NIST follows the NIH Guidelines by supporting and conducting research using only human embryonic stem cell lines that have been approved by NIH in accordance with the NIH Guidelines. Detailed information regarding NIH Guidelines for stem cells is located on the NIH Stem Cell Information website: <http://stemcells.nih.gov>. The DoC/NIST will not support or conduct any type of research that the NIH Guidelines prohibit NIH from funding. The DoC/NIST will review research using human embryonic stem cell lines that it supports and conducts in accordance with the Common Rule and NIST implementing procedures, as appropriate.

Any request to support or conduct research using human embryonic stem cell lines not currently approved by the NIH, will require that the owner, deriver or licensee of the human embryonic stem cell line apply for and receive approval of the registration of the cell line through the established NIH application procedures: http://hescregapp.od.nih.gov/NIH_Form_2890_Login.htm. Due to the timing uncertainty associated with establishing an embryonic stem cell line in the NIH registry, the use of existing human embryonic stem cell lines in the NIH Embryonic Stem Cell Registry may be preferred by applicants or current award recipients. The NIH Embryonic Stem Cell Registry is located at: http://grants.nih.gov/stem_cells/registry/current.htm.

An applicant or current award recipient proposing to use a registered embryonic stem cell line will be required to document an executed agreement for access to the cell line with the provider of the cell line, and acceptance of any established restrictions for use of the cell line, as may be noted in the NIH Embryonic Stem Cell Registry.

If the applicant's proposal appears to include research activities involving human subjects the following information may be requested during the proposal 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 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 FWAs or IRB registrations are being applied for, that should be clearly stated.

Additional documentation may be requested, as warranted, during review of the applicant's proposal, but may include the following for research activities involving human subjects that are planned in the first year of the award:

- (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 applicant's proposal submitted to NIST, if the protocol includes tasks not applicable to the proposal, 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 issued, a draft of the proposed protocol may be requested;
- (6) Any additional clarifying documentation that NIST may request during review of proposals to perform the NIST administrative review of research involving human subjects.

f. Research Projects Involving Live Vertebrate Animals. Any application that includes participation in research involving live vertebrate animals, that are being cared for, euthanized, or used by the project participants to accomplish research goals, teaching, or testing, must be in compliance with 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. In addition, such applications must meet the requirements of the Animal Welfare Act (7 U.S.C. § 2131 et seq.), 9 C.F.R. Parts 1, 2, and 3, and if appropriate, 21 C.F.R. Part 58. These regulations 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 animal materials from commercial processors of animal products or to animal cell lines or tissues from tissue banks. ***The applicant should clearly indicate in the proposal, 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.***

NIST reserves the right to make an independent determination of whether your research involves live vertebrate animals. If NIST determines that your research project involves live vertebrate animals, you will be required to provide additional information for review and approval. If an award is issued, no research activities involving live vertebrate animals subjects shall be initiated or costs incurred under the award until the NIST Grants Officer issues written approval.

If the applicant's proposal appears to include research activities involving live vertebrate animals the following information may be requested during the proposal review process:

- (1) The name(s) of the institution(s) where the animal research will be conducted;
- (2) The assurance type and number, as applicable, for the cognizant 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 (if currently approved);
- (4) If the review by the cognizant Institutional Animal Care and Use Committee (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.

Additional documentation will be requested, as warranted, during review of the proposal, but may include the following for research activities involving live vertebrate animals that are planned in the first year of the award:

- (1) A signed (by the Principal Investigator) copy of the IACUC approved Animal Study Proposal (ASP);
- (2) Documentation of the IACUC approval indicating the approval and expiration dates of the ASP; and
- (3) If applicable, a nonduplication-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 issued, a draft of the proposed ASP may be requested.
- (5) Any additional clarifying documentation that NIST may request during review of proposals to perform the NIST administrative review of research involving live vertebrate animals.

g. Funding Availability and Limitation of Liability. Funding for the programs listed in this FFO is

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

- h. Collaborations Making Use of Federal Facilities.** All proposals 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 proposal prior to the merit review. Examples of some facilities that may be available for collaborations are listed on the NIST Web site, <http://www.nist.gov/user-facilities.cfm>.

3. Reporting

- a. Reporting Requirements.** In lieu of the reporting requirements described in Sections A.01 Financial Reports and B.01 Performance (Technical) Reports of the DoC Financial Assistance Standard Terms and Conditions dated January 2013 (http://www.osec.doc.gov/oam/grants_management/policy/documents/DOC_Standard_Terms_and_Conditions_01_10_2013.pdf), the following reporting requirements shall apply:

- (1) Financial Reports.** Each award recipient will be required to submit an SF-425, Federal Financial Report in triplicate (an original and two (2) copies), on a semi-annual basis for the periods ending March 31 and September 30 of each year. Reports will be due within 30 days after the end of the reporting period.

- (2) Performance (Technical) Reports.** Each award recipient will be required to submit a technical progress report in triplicate (an original and two (2) copies), on a semi-annual basis for the periods ending March 31 and September 30 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. Two (2) copies of the technical progress report shall be submitted to the Project Manager and the original report to the NIST Grants Officer. Technical progress reports shall contain information as prescribed in 15 C.F.R. § 14.51.

- (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.

- b. OMB Circular A-133 Audit Requirements.** Single or program-specific audits shall be performed in accordance with the requirements contained in OMB Circular A-133, *"Audits of States, Local Governments, and Non-Profit Organizations,"* and the related *Compliance Supplement*. OMB Circular A-133 requires any non-Federal entity (*i.e.*, including non-profit institutions of higher education and other non-profit organizations) that expends Federal awards of \$500,000 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 Circular. 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.

VII. Agency Contact(s)

Questions should be directed to the following contact persons:

Subject Area	Point of Contact
Programmatic and technical questions:	Frank Gayle Phone: 301-975-2830 E-mail: frank.gayle@nist.gov or Kerry Miles Phone: 301-975-5571 E-mail: kerry.miles@nist.gov
Technical assistance with Grants.gov submissions	Christopher Hunton Phone: 301-975-5718 Fax: 301-840-5976 E-mail: christopher.hunton@nist.gov or Grants.gov Phone: 800-518-4726 E-mail: support@grants.gov
Grant rules and regulations	Scott McNichol Phone: 301-975-5603 Fax: 301-840-5976 E-mail: scott.mcnichol@nist.gov