

November 13, 2013

**ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY (FFO)
Professional Research Experience Program (PREP-Boulder)**

EXECUTIVE SUMMARY

- **Federal Agency Name:** National Institute of Standards and Technology (NIST), United States Department of Commerce (DoC)
- **Funding Opportunity Title:** Professional Research Experience Program (PREP-Boulder)
- **Announcement Type:** Initial
- **Funding Opportunity Number:** 2014-NIST-PREP-BOULDER-01
- **Catalog of Federal Domestic Assistance (CFDA) Number:** 11.609, Measurement and Engineering Research and Standards
- **Dates:** Electronic applications must be received no later than 11:59 p.m. Eastern Time, Friday, December 13, 2013. Paper applications must be received by NIST by 5:00 p.m. Mountain Time, Friday, December 13, 2013. Applications received after the respective deadline will not be reviewed or considered. The earliest anticipated start date for awards under this FFO is expected to be approximately May 2014.
- **Application Submission Address:** See Section IV. in the Full Announcement Text of this FFO.
- **Funding Opportunity Description:** NIST is soliciting applications from eligible applicants to provide undergraduate/graduate students and post-doctoral associates with fellowship opportunities and financial assistance to obtain laboratory experiences within the NIST Boulder Laboratory, which includes programs from the Physical Measurement Laboratory, the Material Measurement Laboratory, and the Information Technology Laboratory. The recipients will work with the NIST Boulder Laboratory to foster collaborative research relationships among NIST Boulder staff, undergraduate/graduate students and post-doctoral fellows and the students' academic institutions within the NIST Boulder Laboratory.
- **Funding Availability.** NIST expects that approximately \$8,000,000 to \$12,000,000 may be made available in FY 2014 to award between (1) and (10) multi-year awards to eligible applicants for the first year. New awards are expected to range from approximately \$100,000 to \$8,000,000 annually, with project performance periods of up to five (5) years, consistent with the multi-year funding policy described in Section II of this FFO.
- **Funding Instrument:** Cooperative Agreement
- **Who is Eligible:** Eligible applicants are accredited institutions of higher education in the United States and its territories that offer undergraduate and graduate degrees in academic disciplines relevant to the technical programs of the NIST Boulder Laboratory. For purposes of this FFO, these disciplines include (but may not be limited to) physics, chemistry, mathematics, materials science, mechanical/electrical/electronic engineering, and computer science/engineering. Institutions must offer both 4-year undergraduate and graduate degree plans.
- **Cost Sharing Requirements:** This program does not require cost sharing.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

The statutory authority for the PREP-Boulder program is 15 U.S.C. § 278g-1(a) - (c); 15 U.S.C. § 272(b) and (c).

Program Description: The U. S. Department of Commerce, National Institute of Standards and Technology (NIST) is soliciting applications from eligible applicants to provide undergraduate/graduate students and post-doctoral associates with fellowship opportunities and financial assistance to obtain laboratory experiences within the technical programs of the NIST Boulder Laboratory, which includes programs from the Physical Measurement Laboratory (PML), the Material Measurement Laboratory (MML), and the Information Technology Laboratory (ITL). The recipients will work with the NIST Boulder Laboratory to foster collaborative research relationships among NIST Boulder staff, undergraduate/graduate students and post-doctoral fellows and the students' academic institutions.

The objectives of the PREP-Boulder program are to encourage the growth and progress of science and engineering in the United States by providing research opportunities for undergraduate/graduate students and post-doctoral fellows, enabling them to collaborate with NIST scientists and engineers, exposing them to cutting-edge research. The PREP-Boulder program will promote undergraduate and graduate students' pursuit of degrees in science and engineering, and post-doctoral fellows' professional development in science and engineering and will foster stronger scientific collaboration between the recipient institution and the NIST Boulder Laboratory. The NIST Administrative Coordinator for PREP-Boulder program, NIST scientists and engineers and appropriate division chiefs will coordinate with outreach coordinators and directors of multi-disciplinary academic organizations to identify students and programs that would benefit from the PREP-Boulder program experience. Applicants must be able to ensure the availability of undergraduate and graduate students for on-site collaborative research experiences at the NIST Boulder Laboratory, in Boulder, Colorado, concurrent with their academic studies. Participating students must be enrolled full-time in an academic program. A grade point average of 3.0/4.0 or better is encouraged. Post-doctoral fellows must be affiliated with a sponsoring institution of higher education.

Financial support may be provided through the awards to the institutions for attendance at conferences, workshops, or other technical research meetings that are relevant to the mission of the NIST Boulder Laboratory. Refer to <http://www.nist.gov/> for information about the missions and areas of research collaboration available to program participants in the Physical Measurement Laboratory, the Material Measurement Laboratory, and the Information Technology Laboratory.

The recipient will collaborate with the NIST Administrative Coordinator for PREP-Boulder program in selecting undergraduate/graduate students and post-doctoral fellows to participate in the PREP-Boulder program. In accordance with the procedures proposed by the recipient and included in the cooperative agreement, the NIST Administrative Coordinator for PREP-Boulder program anticipates working with staff from the NIST Boulder Laboratory to approve candidate undergraduate/graduate students and post-doctoral fellows selected by the recipient. In addition, the undergraduate/graduate students and post-doctoral fellows selected to be part of the PREP-Boulder program managed by the recipient will require a moderate amount of research guidance and training from NIST staff as part of the collaboration.

Consistent with 15 U.S.C. § 278g-1(c), applicants are encouraged to promote the participation of underrepresented minorities in any research conducted under an award pursuant to this FFO.

II. Award Information

- 1. Funding Instrument.** The funding instrument that will be used is 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 Chapter 5.C of 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)

2. **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 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, and the availability of funds.
3. **Funding Availability.** NIST expects that approximately \$8,000,000 to \$12,000,000 may be made available in FY 2014 to award between (1) and (10) multi-year awards to eligible applicants for the first year. New awards are expected to range from approximately \$100,000 to \$8,000,000 annually, with project performance periods of up to five (5) years, consistent with the multi-year funding policy described in Section II.2. of this FFO.

III. Eligibility Information

1. **Eligible Applicants.** Eligible applicants are accredited institutions of higher education in the United States and its territories that offer undergraduate and graduate degrees in academic disciplines relevant to the technical programs of the NIST Boulder Laboratory. For purposes of this FFO, these disciplines include (but may not be limited to) physics, chemistry, mathematics, materials science, mechanical/electrical/electronic engineering, and computer science/engineering. Institutions must offer both 4-year undergraduate and graduate degree plans.
2. **Cost Sharing or Matching.** This program does not require cost sharing.
3. **Other**

Pre-Applications. NIST is not accepting pre-applications or white papers under 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. The standard application package, plus an additional copy of the SF-424A for year five (5) of the project, may also be requested by contacting the NIST personnel listed below:

Cynthia Kotary, Administrative Coordinator for the PREP-Boulder program, National Institute of Standards and Technology, 325 Broadway, Mailstop 104.01, Boulder, Colorado 80305. Phone: (303) 497-3319; email: cynthia.kotary@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 2014-NIST-PREP-BOULDER-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. Applicants should enter total budget information for the full five (5) years of the project in item 18 on the SF-424.
- (2) **SF-424A, Budget Information – Non-Construction Programs.** The budget should reflect anticipated expenses for the project, considering all potential cost increases, including cost of living adjustments. The applicant should submit two SF-424A forms. The first SF-424A form

should cover the first four (4) years of the project and is the SF-424A form that appears as part of the mandatory forms in the Grants.gov application package. The second SF-424A form should be submitted to cover year five (5) of the project. A fillable SF-424A form can be found at <http://www.nist.gov/director/ocfo/grants/upload/sf424a.pdf>. Applicants should download the fillable SF-424A form, complete the information for year five (5) of the project and submit the completed form as an attachment by clicking on "Add Attachments" found in item 15 of the SF-424, Application for Federal Assistance (see Section IV.2.a.(9) of this FFO).

- (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 of no more than twenty-five (25) pages responsive to the program description (see Section I. of this FFO) and the evaluation criteria (see Section V.1 of this FFO). It should contain the following information:
 - (a) **Executive Summary.** The Executive Summary should briefly describe the proposed project and how the applicant will plan and implement the project (see Section I of this FFO), consistent with the evaluation criteria (see Section V.1 of this FFO). The executive summary should not exceed one (1) single-sided page.
 - (b) **Project Approach/Methodology and Program Management Plan.** A description of the proposed approach to plan and implement the project (see Section I of this FFO), sufficient to permit evaluation of the proposal, in accordance with the Project Approach/Methodology and Program Management Plan evaluation criterion (see Section V.1.a of this FFO).
 - (c) **Qualifications and Experience.** A description of the applicant's qualifications for conducting the proposed project, sufficient to permit evaluation of the proposal in accordance with the Qualifications and Experience evaluation criterion (see Section V.1.b of this FFO).
 - (d) **Success Metrics.** A description of three or more metrics by which to evaluate the success of the program in meeting program objectives. Outputs may be quantified, such as: the number and quality of publications by the applicant's participants in the project; the number and types of patents, tools, or software developed by the applicant's participants in the project; ability of students to earn college credits and work towards their undergraduate or graduate degree; and/or the number of science and technology jobs obtained by the applicant's participants in the project once they complete their participation in the project. The metrics should provide a sound basis for evaluating the technical success of specific projects, the quality of the research experience provided to the applicant's participants, and the extent to which collaborations have been formed or strengthened between the recipient institution and the NIST Boulder Laboratory. This section should be the primary, but not only, means by which the proposal will be evaluated according to the Success Metrics evaluation criteria (see Section V.1.c of this FFO).
- (7) **Budget Narrative.** Applicants should use the SF-424A forms to complete the budget submission (see Section IV.2.1.(2) of this FFO). In addition to the SF-424A forms, applicants must provide a detailed budget narrative to explain fully and justify all proposed project funding including each level of fellowship (undergraduate/graduate students and post-doctoral fellows) and other resources. Costs should be included in the annual budget to support undergraduate/graduate students and/or post-doctoral fellows. The applicant should

determine its capabilities for managing a selected number of students. For example, the annual budget could contain support for (1) 10 undergraduate, (2) 20 graduate, and (3) 15 post-doctoral fellows. This section should be the primary, but not only, means by which the proposal will be evaluated according to the Budget Narrative criterion (see Section V.1.d of this FFO).

Costs that fit the program description are:

- (a) Stipend or wage (commensurate to what a research associate in the fellow's given department would receive),
- (b) Full tuition assistance will be provided for students calculated at the in-state rate, and
- (c) Fringe benefits (which may include fees and health insurance).

In addition to the costs listed above, if the applicant anticipates any of the following types of expenses, these should be included as well:

- (a) Relocation expenses for post-doctoral fellows (optional and limited to \$5000 per fellow).
 - (b) Applicant's Indirect costs (including administrative and operation costs and costs to administer travel for PREP-Boulder program participants), as appropriate, and
 - (c) Necessary costs to provide oversight and implementation of the program.
(NOTE: All successful applicants will be required to have a PREP-Boulder program coordinator. Responsibilities of the successful applicant's PREP-Boulder program coordinator include: serving as a single point of contact for University staff, PREP-Boulder program applicants and participants and NIST Boulder research scientists and engineers; assisting students, University sponsors, and NIST Boulder advisors in implementing the program and resolving any difficulties that may arise, and serving as the signatory on all agreements between NIST Boulder, the University, and each fellow.
- (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) **SF-424A, Budget Information - Non-Construction Programs** for year 5 of the project. The SF-424A form that appears as part of the mandatory forms in the Grants.gov application package covers the first four (4) years of the project. The second SF-424A form should be submitted to cover year five (5) of the project. A fillable SF-424A form can be found at <http://www.nist.gov/director/ocfo/grants/upload/sf424a.pdf>. Applicants should download the fillable SF-424A form, complete the information for year five (5) of the project and submit the completed form as an attachment, using the procedure described in the next paragraph.

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.(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 indicating an application is received does not provide information about whether attachments have been received.***

b. Application Format

- (1) **Double-sided.** For paper submissions, print on both sides of the paper for the original and copies (front to back counts as two (2) pages).
 - (2) **E-mail and facsimile (fax) submissions.** Will not be accepted.
 - (3) **Number of paper copies.** For paper submissions, one (1) signed stapled original and two (2) stapled copies. If the 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.
 - (4) **Figures, graphs, images, and pictures.** Should be of a size that is easily readable or viewable and may be landscape orientation.
 - (5) **Font.** Easy to read font (10-point minimum). Smaller type may be used in figures and tables but must be clearly legible.
 - (6) **Line spacing.** Applicants can use single spacing or double spacing.
 - (7) **Margins.** One (1) inch top, bottom, left, and right.
 - (8) **Page layout.** 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.
 - (9) **Page limit.** Applications are limited to twenty-five (25) pages.
 - (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:** SF-424, Application for Federal Assistance; the SF-424A, Budget Information – Non-Construction Programs form for the first four (4) years of the project and the SF-424A, Budget Information – Non-Construction Programs form for year five (5) of the project; SF-424B, Assurances – Non-Construction Programs; SF-LLL, Disclosure of Lobbying Activities; CD-511, Certification Regarding Lobbying; Budget Narrative; and Indirect Cost Rate Agreement.
 - (10) **Page numbering.** Number pages sequentially.
 - (11) **Page size.** 21.6 by 27.9 centimeters (8 ½ by 11 inches).
 - (12) **Language.** English.
 - (13) **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.
 - (14) **Typed document.** All applications, including forms, must be typed; handwritten applications and forms will not be accepted.
- 3. Submission Dates and Times.** Electronic applications must be received no later than 11:59 p.m. Eastern Time, Friday, December 13, 2013. Paper applications must be received by NIST by 5:00 p.m. Mountain Time, Friday, December 13, 2013. Applications received after the respective deadline will not be reviewed or considered. The earliest anticipated start date for awards under this FFO is

expected to be approximately May 2014.

For electronic applications, NIST will consider the date and time stamped on the validation generated by www.grants.gov as the official submission time. NIST strongly recommends that applicants do not wait until the last minute to submit an application. NIST will not make allowance for any late submissions. To avoid any potential processing backlogs due to last minute Grants.gov registrations, applicants are highly encouraged to begin their Grants.gov registration process early.

In the event of a natural disaster that interferes with timely application submissions, NIST may issue an amendment to this FFO to change the application due date.

4. Intergovernmental Review. Proposals under this Program are not subject to Executive Order 12372.

5. Funding Restrictions. Profit or fee is not an allowable cost.

6. Other Submission Requirements

a. Applications may be submitted by paper or electronically.

(1) Paper proposals must be submitted in triplicate (an original and two copies) and submitted to the NIST personnel listed below:

Cynthia Kotary, Administrative Coordinator for the PREP-Boulder program, National Institute of Standards and Technology, 325 Broadway, Mailstop 104.01, Boulder, Colorado 80305.

(2) Electronic applications must be submitted via Grants.gov at www.grants.gov, under announcement 2014-NIST-PREP-BOULDER-01.

- a) 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 2014-NIST-PREP-BOULDER-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 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 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 an application. Only authorized individual(s) will be able to submit the application, and the system may need time to process a submitted application. Applicants should save and print the proof of submission they receive from Grants.gov. If problems occur while using Grants.gov, the applicant is advised to (a) print any error message received and (b) call Grants.gov directly for immediate assistance. If calling from within the United States or from a U. S. territory, please call 800-518-4726. If calling from a place other than the United States or a U. S. territory, please call 606-545-5035. Assistance from the Grants.gov Help Desk will be available around the clock every day, with the exception of Federal holidays. Help Desk service will resume at 7:00 a.m.

Eastern Time the day after Federal holidays. For assistance using Grants.gov, you may also contact support@grants.gov.

- c) Information essential to the successful submission of applications on the Grants.gov system is found by means of the “Applicants” tab in the banner just below the top of the www.grants.gov home page. Clicking on the “Applicants” tab produces the Grant Applicants page. All potential applicants should pay close attention to the information contained under the “Applicant Actions” and “Applicant Resources” section headings, which appear in the box near the top left of the Grant Applicants page, and should follow the links associated with each subcategory.

Particular attention should be given to the items found under “Applicant FAQs”. The “Grant Application FAQs” contains information important to successful submission on Grants.gov, and provides essential details on the naming convention for attachments to Grants.gov applications.

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 application is received on time.

- b. **Amendments.** Any amendments to this FFO will be announced through Grants.gov. Applicants may sign up for Grants.gov FFO amendments or may request copies from Cynthia Kotary by telephone at (303) 497-3319; email: cynthia.kotary@nist.gov.

V. Application/Proposal Review Information

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

a. **Project Approach/Methodology and Program Management Plan (0 – 35 points)**

The applicant’s proposal will be evaluated based on the responsiveness and quality of:

- The plan to provide qualified undergraduate/graduate students and post-doctoral fellows with the opportunity to obtain research experience within the NIST Boulder Laboratory.
- A demonstrated ability to coordinate with science and engineering institutions to identify professional research opportunities, to match students/researchers with these opportunities, and to manage cooperative agreements for collaborative research. If this will be a new or developing activity for an applicant, the applicant’s plan to implement the new program will be evaluated.
- A demonstrated ability to ensure the availability of undergraduate and graduate students for on-site work at the NIST Boulder, Colorado campus during their tenure as students, concurrent with taking their coursework. If this will be a new or developing activity for an applicant, the applicant’s plan to implement the new program will be evaluated.
- A demonstrated ability to ensure that post-doctoral fellows are available for full time on-site collaborative research experiences at the NIST Boulder Colorado campus. If this will be a new or developing activity for an applicant, the applicant’s plan to implement the new program will be evaluated.

- The stated expectations regarding the outcomes and benefits to the applicant and to the participating students, expressed in measurable terms.
- b. **Qualifications and Experience (0 – 35 points)**
The applicant's proposal will be evaluated on based on:
- The quality of the applicant's academic program, including existing post-doctoral research programs.
 - The proposed program objectives.
 - The appropriateness of proposed student work assignments in light of ongoing research within the NIST Boulder Laboratory.
 - Demonstrated experience in placing undergraduate/graduate students or post-doctoral fellows in research laboratories, or other appropriate settings, consistent with furthering the students' education and research experiences. If this will be a new or developing activity for an applicant, the applicant's qualifications to plan and implement the new program will be evaluated.
- c. **Success Metrics (0 – 20 points)** The clarity and quality of proposed metrics and mechanisms for evaluating the effectiveness of outputs from the PREP-Boulder program will be evaluated.
- d. **Budget Narrative. (0 – 10 points)** An assessment of the budget against the proposed activities (proposed students and post-doctoral fellows and other proposed costs the applicant will incur) will be conducted to determine the practicality of the proposed budget with respect to developing and implementing the PREP-Boulder program as described in Section I of this FFO

2. Review and Selection Process

- a. **Initial Screening of all Program Applications.** An initial review of timely received applications will be conducted to determine eligibility, completeness, and responsiveness to this FFO (see Section I. of this FFO). Applications determined to be ineligible, incomplete, and/or non-responsive may be eliminated from further review.
- b. **Full Review of Eligible, Complete, and Responsive Applications.** Applications that are determined to be eligible, complete, and responsive will proceed for full reviews in accordance with the review and selection process below:

At least three (3) independent, objective reviewers knowledgeable about the scientific areas described in the application will conduct a technical review of each application, based on the evaluation criteria (see Section V.1 of this FFO). Based on the reviewers' scores, a rank order will be prepared and provided to the Selecting Official for further consideration.

The Selecting Official, who is the Boulder Laboratory Operations Director, or designee, will make recommendations to the NIST Grants and Agreements Management Division regarding the final application selections. The Selecting Official shall recommend applications for awards based upon the rank order of the applications, but may recommend applications out of rank based on one or more of the following selection factors:

- (1) The results of the reviewers' evaluations.
- (2) The objectives as set forth in the Funding Opportunity Description (Section I) set forth in this FFO.
- (3) Whether the project duplicates other projects funded or considered for funding by DoC or

other federal agencies.

- (4) The availability of funds.

NIST reserves the right to negotiate the budget costs with the selected applicant. Negotiations may include requesting that the applicant remove certain costs. Additionally, NIST may request that the applicant modify objectives or work plans and provide supplemental information required by the agency prior to award. NIST also reserves the right to reject an application where information is uncovered that raises a reasonable doubt as to the responsibility of the applicant. NIST may select part, some, all, or none of the applications. The final approval of selected applications and issuance of awards will be by the NIST Grants Officer. The award decisions of the Grants Officer are final.

3. **Anticipated Announcement and Award Dates.** Awards may be made approximately in the May 2014 time frame.
4. **Additional Information**
 - a. **Application Replacement Pages.** Applicants may not submit replacement pages and/or missing documents once an application has been submitted. Any revisions must be made by submission of a new application that must be received by NIST by the submission deadline.
 - b. **Notification to Unsuccessful Applicants.** Unsuccessful applicants will be notified in writing.
 - c. **Retention of Unsuccessful Applications.** One (1) copy of each non-selected application 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. In addition to these, NIST will have additional terms and conditions that are specific to the PREP-Boulder program and these are available at <http://www.boulder.nist.gov/bdprepo.htm>.
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/department-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 application 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 Central Contractor Registry (CCR) before submitting an application 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 an application under consideration by an agency; and
- (3) Provide its DUNS number in each application or application 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 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.

The PREP-Boulder Program Description specifically anticipates research collaboration with NIST, Applicants are not required to propose collaborations with specific NIST programs or with specific NIST employees. Any proposed collaboration with a specific NIST program or employee will not make an application either more or less favorable in the competitive process.

If the applicant chooses to propose collaboration with a specific NIST program or employee, 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. Such collaboration with a specific NIST program or employee is at the sole discretion of NIST and must be approved by appropriate NIST management. Prior to beginning the merit review process, NIST will verify the approval of any such proposed collaboration. Any unapproved collaboration will be stricken from the proposal prior to the merit review. Any NIST staff identified in the proposal for such collaboration will be restricted from participating in the merit review process for that proposal.

- 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 December 17, 2012 (77 FR 74634). 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 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 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 activities 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 activities involve human subjects. NIST policy also requires a NIST administrative review for research involving human subjects approved by a non-NIST Institutional Review Board (IRB). (15 C.F.R. § 27.112 Review by Institution.) If NIST determines that your application 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. 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, if the application is funded. Non-exempt human subjects research activities by either domestic or foreign organizations 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 possessing a currently valid Federalwide Assurance (FWA) on file from OHRP. 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>. 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.

The applicant should clearly indicate in the application, 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.

If an activity/task involves data obtained through intervention or interaction with living individuals or identifiable private information obtained from or about living individuals but the applicant participant(s) believes that the activity/task is not research as defined under the Common Rule, the following may be requested for that activity/task:

Justification, including the rationale for the determination and in some cases additional documentation, to support a determination that the activity/task in the application is not research as defined under the Common Rule. See 15 C.F.R. § 27.102. This may result in a NIST determination. If the applicant participant(s) uses a cognizant IRB that provides an IRB approval, a copy of that IRB approval documentation will be required by NIST. The applicant participant(s) is not required to establish a relationship with a cognizant IRB if they do not have one, but if the applicant participant(s) has a cognizant IRB that requires review of the activity/task, or the applicant participant(s) elects to obtain IRB review, a copy of the IRB approval documentation will be required by NIST.

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).

- (a) The name(s) of the institution(s) where the exempt research will be conducted; and/or from which biological materials, or data from human subjects will be provided.
- (b) A copy of the protocol of 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).
- (c) 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.
- (d) Any additional clarifying documentation that NIST may request during the review process in order to make a determination that the activity or use of biological materials or data from human subjects is exempt under the Common Rule (see 15 C.F.R. § 27.101).

If the application appears to NIST to include research activities (exempt or non-exempt) involving human subjects, and the performer of the activity has a cognizant IRB, 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 FWAs or IRB registrations are being applied for, that should be clearly stated.

Additional documentation may be requested by NIST for performers with a cognizant IRB during review of the application, and 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 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 may be requested;
- (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.)

- f. Research Applications Involving Live Vertebrate Animals.** Any application that includes research activities involving live vertebrate animals, that are being cared for, euthanized, or used by participants in the application to accomplish research goals, teaching, or testing, must 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 stock items from animal material suppliers (e.g., tissue banks), such as cell lines and tissue samples, or from commercial food processors, where the vertebrate animal was euthanized for food purposes and not for sample collection. NIST does require documentation for obtaining custom samples from live vertebrate animals from animal material suppliers and other organizations (*i.e.*, universities, companies, and government laboratories, etc.). Custom samples includes samples from animal material suppliers, such as when a catalog item indicates that the researcher is to specify the characteristics of the live vertebrate animal to be used, or how a sample is to be collected from the live vertebrate animal.

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.

NIST reserves the right to make an independent determination of whether an applicant's research activities involve live vertebrate animals or custom samples from live vertebrate animals. If NIST determines that the application includes research activities or custom samples involving 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 application appears to include research activities or custom sample collections involving live vertebrate animals the following information may be requested during the application review process:

- (1) The name(s) of the institution(s) where the animal research 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 (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.

Additional documentation may be requested by NIST during review of the application and may include the following for research activities and/or custom sample collections 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 Application (ASP);

- (2) Documentation of the IACUC approval indicating the approval and expiration dates of the ASP; and
- (3) If applicable, a non-duplication-of-funding letter if the ASP is funded from several sources.
- (4) If a new ASP will only be submitted to an IACUC if an award from NIST 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.

For more information regarding human subjects or research projects involving live vertebrate animals, contact Linda Beth Schilling, Senior Coordinator and Policy Advisor for Human & Animal Subjects Research at NIST (email: linda.schilling@nist.gov; phone: 301-975-2887).

- g. Funding Availability and Limitation of Liability.** Funding for the program listed in this FFO is contingent upon the availability of appropriations. In no event will NIST or DoC be responsible for application preparation costs if these programs fail to receive funding or are cancelled because of agency priorities. Publication of this FFO does not oblige NIST or DoC to award any specific project or to obligate any available funds.
- h. DoC Representation by Corporations Regarding an Unpaid Delinquent Tax Liability or a Felony Conviction Under Any Federal Law.** In accordance with the Federal appropriations law expected to be in effect at the time of project funding, NIST anticipates that the selected applicants will be provided a form and asked to make a representation regarding any unpaid delinquent tax liability or felony conviction under any Federal law.

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. A final financial report is due within 90 days after the end of the project period.
 - (2) **Performance (Technical) Reports.** A summary evaluation shall be submitted in May of each year of the award to assess performance against the metrics established for the program and consistent with reporting requirements in 15 C.F.R. Part 14. It should also provide overall assessment of program activities and explore opportunities to improve program effectiveness. This evaluation should be reviewed by the principal investigator, the PREP committee and/or Coordinator and be vetted through the NIST Boulder Laboratory Operations Director.
 - (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 applicant may need to submit patent and property 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 applicant'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:	Cynthia Kotary Phone: 303-497-3319 E-mail: cynthia.kotary@nist.gov
Electronic submission through Grants.gov	Christopher Hunton Phone: 301-975-5718 E-mail: christopher.hunton@nist.gov or Grants.gov Phone: 800-518-4726 E-mail: support@grants.gov
Grant rules and regulations	Jannet Cancino Phone: 301-975-6544 E-mail: jannet.cancino@nist.gov