

December 20, 2011

**ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY (FFO)
Professional Research Experience Program – Material Measurement Laboratory (PREP-
MML)**

EXECUTIVE SUMMARY

- 1. Federal Agency Name:** National Institute of Standards and Technology (NIST), United States Department of Commerce (DoC)
- 2. Funding Opportunity Title:** Professional Research Experience Program – Material Measurement Laboratory (PREP-MML)
- 3. Announcement Type:** Initial
- 4. Funding Opportunity Number:** 2012-NIST-PREP-MML-01
- 5. Catalog of Federal Domestic Assistance (CFDA) Number:** 11.609, Measurement and Engineering Research and Standards
- 6. Dates:** All applications, paper and electronic, must be received no later than 5:00 p.m. Eastern Time on April 13, 2012. Applications received after this deadline will not be reviewed or considered. Review, selection, and award processing is expected to be completed in August 2012. The earliest anticipated start date for awards made under this FFO is expected to be September 1, 2012.
- 7. Application Submission Address:**
 - Paper Submission: Donna Kimball
National Institute of Standards and Technology
PREP-MML
100 Bureau Drive, Mail Stop 8300
Gaithersburg, Maryland 20899-8300

Phone: 301-975-8362
 - Electronic Submission: www.grants.gov
- 8. Funding Opportunity Description:** NIST announces that the PREP-MML is soliciting applications for financial assistance from accredited institutions of higher education in the United States and its territories to enable those institutions to provide laboratory experiences and financial assistance to undergraduate and graduate students and post-doctoral associates in the MML at the NIST Laboratories in Gaithersburg, Maryland and Charleston, South Carolina.
- 9. Total Amount to be Awarded:** Approximately \$1,500,000 to fund the first year of new multi-year awards.

10. Anticipated Amounts: NIST anticipates funding one (1) to no more than three (3) projects for up to three (3) years in the range of approximately \$100,000 – \$500,000 per award per year, consistent with the multi-year funding policy described in Section II. Award Information of this FFO.

11. Funding Instrument: Cooperative Agreement

12. Who is Eligible: Accredited institutions of higher education in the United States and its territories that offer undergraduate and graduate degrees in physics, chemistry, mathematics, computer science, and/or engineering. Institutions must have a 4-year degree plan. Undergraduate and graduate students, who receive fellowships under the PREP-MML, must show evidence of a 3.0 or higher grade point average in a curriculum acceptable to the sponsoring educational institution and NIST/MML and must be enrolled full-time at a sponsoring institution. Post-doctoral associates must be affiliated with a sponsoring institution of higher education and be no more than 5 years beyond receiving their Ph.D.

13. Cost Sharing Requirements: This Program does not require cost sharing.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

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

NIST announces that the PREP-MML is soliciting applications for financial assistance from accredited institutions of higher education in the United States and its territories to enable those institutions to provide laboratory experiences and financial assistance to undergraduate and graduate students and post-doctoral associates in the MML at NIST Laboratories in Gaithersburg, Maryland and in Charleston, South Carolina. In both Gaithersburg and Charleston, the MML is the major operating unit within NIST focused on measurement research, standards, and data in the chemical, biological and materials sciences. The MML is comprised of what were previously the Chemical Science and Technology Laboratory, the Materials Science and Engineering Laboratory, and the Measurement Services Division of Technology Services.

The objectives of the PREP-MML are to encourage the growth and progress of science and engineering in the United States by providing research opportunities for undergraduate and graduate students and post-doctoral associates, enabling them to collaborate with internationally known NIST scientists, exposing them to cutting-edge research. The PREP-MML will promote undergraduate and graduate students' pursuit of degrees in science and engineering, and post-doctoral associates' professional development in science and engineering. The PREP-MML Coordinator and NIST/MML scientists will coordinate with appropriate division chiefs, outreach coordinators, and directors of multi-disciplinary academic organizations to identify students and programs that would benefit from the PREP-MML experience. Applicants must be able to ensure the availability of students for on-site collaborative research experiences at the NIST/MML Laboratories in Gaithersburg, Maryland and/or Charleston, South Carolina concurrent with their institution of higher education studies. Refer to <http://www.nist.gov/mml/> for more information about MML and areas of research

collaboration for the PREP-MML participants. Any participating student must also be enrolled in an academic program acceptable to both the sponsoring institution and NIST/MML.

A PREP award may support students at institutions of higher education who show promise as present or future contributors to the NIST mission under 15 U.S.C. § 278g-1(a), or post-doctoral associates who are U.S. citizens involved in NIST research and technical activities under 15 U.S.C. § 278g-1(a), or persons who collaborate with NIST on research under 15 U.S.C. § 272(b) and/or (c).

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/MML and faculty, officials, students, and employees of recipient institutions. This includes NIST/MML collaboration with a recipient by assisting the PREP-MML fellows with their research projects, coordinating as needed with the fellows' faculty advisers regarding the fellows' progress, and approving changes in the research projects described in the fellows' agreements, consistent with NIST program objectives. Additional forms of substantial involvement that may arise are described in the DoC Grants and Cooperative Agreements Interim Manual, which is available at http://www.osec.doc.gov/oam/grants_management/policy/doc_grants_manual/default.htm.

2. Multi-Year Funding Policy

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

3. Funding Availability

NIST plans that a total of \$1,500,000 may be made available in FY 2012 to award one (1) to no more than three (3) multi-year awards to eligible applicants for the first year. New awards are expected to range from approximately \$100,000 to \$500,000, with project performance periods of up to three (3) years, consistent with the multi-year funding policy described in Section II. Award Information of this FFO. Therefore, applicants may propose multi-year projects for up to three (3) years in the range of approximately \$100,000 to \$500,000 per year.

4. Project/Award Period

Successful applicants will be eligible, but are not required, to participate in the PREP-MML for a 3-year period beginning at the time of award.

III. Eligibility Information

1. Eligible Applicants

Eligible applicants are accredited institutions of higher education located in the United States and its territories that offer undergraduate and graduate degrees in physics, chemistry, mathematics, computer science, and/or engineering. Institutions should have a 4-year degree plan. Undergraduate and graduate students, who receive fellowships under the PREP-MML, must show evidence of a 3.0 or higher grade point average in a curriculum acceptable to the sponsoring educational institution and NIST/MML and must be enrolled full-time at a sponsoring institution. Post-doctoral associates must be affiliated with a sponsoring institution of higher education and be no more than 5 years beyond receiving their Ph.D.

Applicants are encouraged, but are not required, to select eligible underrepresented minorities for participation in the PREP-MML.

2. Cost Sharing or Matching

Cost sharing and matching are not required under this program.

3. Other

a. Number of Years Undergraduate and Graduate Students and Post-Doctoral Associates May Participate in the PREP-MML. Undergraduate and graduate students and postdoctoral associates may only participate under one PREP-MML award at any given time and usually may only participate under each type of fellowship (undergraduate student, graduate student, or postdoctoral associate) for five years in total, for total participation of fifteen (15) years.

b. Pre-Applications. NIST is not accepting pre-applications under the PREP-MML Program.

IV. Application 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 may also be requested by contacting:

Donna Kimball
National Institute of Standards and Technology
PREP-MML
100 Bureau Drive, Mail Stop 8300
Gaithersburg, MD 20899-8300

Phone: 301-975-8362

2. Content and Format of Application 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 2012-NIST-PREP-MML-01 must 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
- (3) SF-424B, Assurances - Non-Construction Programs
- (4) CD-511, Certification Regarding Lobbying
- (5) SF-LLL, Disclosure of Lobbying Activities (IF APPLICABLE)
- (6) Technical Application. The Technical Application 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). *(A format that NIST offers for consideration is found in Section IV.2.b. 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. *(A format that NIST offers for consideration is found in Section IV.2.b. of this FFO.)*
- (8) Indirect Cost Rate Agreement. If indirect costs are included in the proposed budget, provide a copy of the approved negotiated agreement if this rate was negotiated with a cognizant Federal audit agency. If the rate was not established by a cognizant Federal audit agency, provide a statement to this effect. Successful applicants will be required to obtain such a rate.

If submitting the application 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.(8) 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

Applications may be structured in any way that the applicant believes will best present the proposed plan to administer the PREP-MML to provide research opportunities for undergraduate and graduate students and post-doctoral associates. A format that NIST offers for consideration by the applicant is as follows:

- (1) Introduction: Describe the institution's qualifications for administering such a program. Applicant institutions must ensure the availability of students for on-site work experiences in Gaithersburg, Maryland and/or Charleston, South Carolina concurrent with their institution classroom studies.
- (2) Needs Assessment: Document and explain the needs to be met or problems to be solved as a result of the applicant's ability to administer the program.
- (3) Objectives: Provide detailed expected outcomes and benefits to the institution expressed in measurable terms.
- (4) Evaluation: Delineate plans for measuring success or determining the degree to which the programmatic objectives will be met.
- (5) Other: Applicants may provide additional information, which is not required to conform to a prescribed format. For example, applicants may wish to describe any plans for continuing the project with necessary funding beyond the Federal funding currently

requested. In addition, applicants may wish to describe the application criteria they plan to use in selecting undergraduate and graduate students and post-doctoral associates for the fellowship program. Applicants may include any information they may have regarding demonstrated commitment to encouraging and assisting underrepresented students in NIST fields of research.

- (6) Budget: Applicants should use the SF-424A to complete the budget submission. In addition to the SF-424A, applicants must provide a detailed Budget Narrative to explain fully and justify all proposed project funding including each level of fellowship (undergraduate, graduate, and post-doctoral) and other resources. Applications must include a budget for each funding period (budget year).

Costs may be included in the annual budget to support undergraduate, graduate, and/or post-doctoral fellows. The applicant should determine its capabilities for managing a selected number of fellows. For example, the annual budget could contain support for (1) 10 undergraduate, (2) 20 graduate, and (3) 15 post-doctoral fellows. Eligible costs are:

- (a) Stipend or wage (minimum of \$25,000 per year, per fellow or equivalent to what a research assistant 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 above, the applicant may include optional costs for:

- (a) Relocation expenses for post-doctoral fellows (optional and limited to \$5000 per fellow).
- (b) Applicant's Indirect costs (including administrative and operation costs), as appropriate, and
- (c) Necessary costs to provide oversight and implementation of the program. (**NOTE:** *All successful applicants will be required to have an applicant-identified PREP-MML coordinator to serve as a single point of contact for the recipient institution with (1) PREP-MML participants, (2) NIST's PREP-MML Administrator, and (3) NIST/MML's research advisors. The applicant's PREP-MML coordinator will be responsible for assisting students and institution sponsors; consulting with the NIST PREP-MML Administrator and with the NIST/MML's advisors in implementing the program; and resolving any difficulties that may arise. Additionally, the coordinator will serve as the Point of Contact for NIST regarding all agreements between NIST/MML, the institution, and each participating PREP-MML fellow.*)

3. Submission Dates and Times

All PREP-MML applications must be received no later than 5:00 p.m. Eastern Time on Friday, April 13, 2012. This deadline applies to all modes of application submission, including courier services, express mailing, and electronic.

Applications received after this deadline and time will be returned with no further consideration. NIST determines whether applications submitted by paper have been timely received by the deadline by the date and time receipt they are physically received by NIST at its Gaithersburg, Maryland campus. For electronic submissions, 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 any allowances for late submissions, including but not limited to incomplete Grants.gov registration, delays in mail delivery caused by Federal Government security screening for U.S. Postal Service mail, or for delays by guaranteed express mailing and/or couriers. To avoid any potential processing backlogs due to last minute Grants.gov registrations, applicants are highly encouraged to start their Grants.gov registration process at least four (4) weeks prior to the application due date.

Important: All applicants, both electronic and paper submitters, should be aware that adequate time must be factored into applicants' schedules for delivery of their application. Submitters of electronic applications are advised that volume on Grants.gov may be extremely heavy on the deadline date, and if Grants.gov is unable to accept applications electronically in a timely fashion, applicants are encouraged to exercise their option to submit applications in paper format. Submitters of paper applications should allow adequate time to ensure a paper application 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.

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 submission due date.

4. Executive Order 12372 (Intergovernmental Review of Federal Programs)

Applications under this Program are not subject to Executive Order 12372, "Intergovernmental Review of Federal Programs."

5. Funding Restrictions

No special restrictions apply.

6. Other Submission Requirements

a. Applications may be submitted by paper or electronically.

(1) Paper applications must be submitted in triplicate (an original and two copies) and sent to:

Donna Kimball
National Institute of Standards and Technology
PREP-MML
100 Bureau Drive, Mail Stop 8300
Gaithersburg, MD 20899-8300

Phone: (301) 975-8362

(2) Electronic applications must be submitted via Grants.gov at www.grants.gov.

Submitters of electronic applications 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 2012-NIST-PREP-MML-01 announcement, contact Christopher Hunton by phone at 301-975-5718 or by e-mail at christopher.hunton@nist.gov.

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 and must be registered with the Federal Central Contractor Registry and with a Credential Provider, 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.

Information essential to successful submission of applications 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.

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

- b. Any amendments to this FFO will be announced through Grants.gov. Applicants can sign up for Grants.gov FFO amendments or alternatively may call Donna Kimball at (301) 975-8362 to request copies.

V. Application Review Information

1. Evaluation Criteria

This is a competitive program that reviews the applicant's application and supporting documentation to determine the final selection. The applications will be evaluated and scored on the basis of the following evaluation criteria:

- a. Soundness of the applicant's academic program, relevancy of applicant's current and proposed new research areas, integration of current and new students into these research areas, qualifications of the applicant pool as demonstrated by resumes, proposed research

projects for students, and the appropriateness those proposed assignments in light of ongoing research at NIST/MML and the students' academic programs. **(0-30 points)**

- b. Experience in or a plan for providing students pursuing degrees in physics, chemistry, mathematics, computer science, and/or engineering with work experiences in laboratories or other settings consistent with furthering the students' education and the applicant's support for such experiences. If an applicant has experience, describe that experience. If this will be a new or developing activity for an applicant, describe the applicant's plans to support the new program. Examples of experience or a plan may include: training, education, and coursework opportunities, available professors to serve as advisors, Teaching Assistant opportunities, laboratory and equipment time, publication record of applicant's advisors, and collaborations with NIST and/or other research facilities. This also includes demonstrated commitment to encouraging and assisting underrepresented students in NIST fields of research. **(0-30 points)**
- c. Qualifications and experience of applicant's staff, as demonstrated by resumes, adequacy and reasonableness of plans for utilizing the applicant's staff effectively to administer the program, coordinating with the PREP-MML Administrative Coordinator and the NIST/MML Technical Advisors in Gaithersburg, Maryland and Charleston, South Carolina. Examples may include: available staff and resources to (1) assist with student appointments, (2) work with NIST for arranging visits to NIST, (3) a coordinator that is familiar with the applicant's research capabilities and the NIST fields of research. **(0-20 points)**
- d. Costs of the proposed project budget (proposed fellowships and other proposed costs) in light of the activities proposed and the objectives of the sponsoring institution and NIST. **(0-10 points)**
- e. Applicant institution's assurance of the availability of students for on-site work experiences in Gaithersburg, Maryland and/or Charleston, South Carolina, concurrent with their university classroom studies. **(0-10 points)**

2. Selection Factors

The Selecting Official shall select applications for award based upon the rank order of the applications, and may select an application out of rank based on one or more of the following selection factors:

- a. The availability of Federal funds;
- b. Applicant's performance under current or previous Federal financial assistance awards;
- c. Duplication or redundancy;
- d. Balance/distribution of funds to ensure fellowship opportunities for all types of fellowships, diversity of sponsoring institutions, and to support the Program objectives; and
- e. Assessment of whether the PREP-MML award would be a new opportunity for an institution that would significantly encourage and support its development of students and programs in research areas of interest to NIST.

3. Review and Selection Process

- a. **Initial Administrative Review of Applications.** An initial review of timely received applications will be conducted to determine eligibility, completeness, and responsiveness to this FFO and the scope of the stated program objectives. 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 processes below:
 - (1) Each PREP-MML application will be reviewed by at least three independent, objective NIST employees who are knowledgeable in the subject matter of this FFO and its objectives and who are able to conduct a review based on the evaluation criteria (see Section V.1. of this FFO). Based on the average of the reviewers' scores, a rank order will be prepared and provided to the Selecting Official for further consideration.
 - (2) The Selecting Official, who is the Executive Officer of the NIST Material Measurement Laboratory in Gaithersburg, Maryland, will select funding recipients based upon the rank order and the selection factors (see Section V.2. of this FFO).

NIST reserves the right to negotiate 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 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 NIST Grants Officer are final.

4. Anticipated Announcement and Award Dates

Review, selection, and award processing is expected to be completed in August 2012. The earliest anticipated start date for awards made under this FFO is expected to be September 1, 2012.

5. Additional Information

- a. **Safety.** Safety is a top priority at NIST. Undergraduate and graduate students and post-doctoral associates participating in the PREP-MML will be expected to be safety-conscious, to attend NIST safety training, and to comply with all NIST safety policies and procedures, and with all applicable NIST visitor policies.
- b. **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.
- c. **Notification to Unsuccessful Applicants.** Unsuccessful applicants will be notified in writing.

- d. **Retention of Unsuccessful Applications.** One (1) 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/dev01002513.pdf> and the DoC Financial Assistance Standard Terms and Conditions (March 2008), which may be updated by the time of award, are available at <http://www.osec.doc.gov/oam/archive/docs/GRANTS/DOC%20STCsMAR08Rev.pdf>.
2. **Administrative and National Policy Requirements**
 - a. **DoC Pre-Award Notification Requirements.** The DoC Pre-Award Notification Requirements for Grants and Cooperative Agreements, which are contained in the *Federal Register* notice of February 11, 2008 (73 FR 7696), are applicable to this FFO and are available at http://www2.ntia.doc.gov/files/DOC_pre-award_notification_requirements_73_FR_7696.pdf.
 - b. **Employer/Taxpayer Identification Number (EIN/TIN), Dun and Bradstreet Data Universal Numbering System (DUNS), and Central Contractor Registration (CCR).** 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 CCR database. 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 CCR (www.ccr.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 CCR and ASAP.

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

- (1) Be registered in the CCR before submitting an application;
- (2) Maintain an active CCR registration 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 it submits to the agency.

See also the *Federal Register* notice published on September 14, 2010, at 75 FR 55671.

- c. **Use of NIST Intellectual Property.** The nature of MML-PREP involves collaboration among NIST and PREP participants, which anticipates the potential use of NIST intellectual property by the applicant. If the applicant specifically 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 at 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, 73 FR 7696 (February 11, 2008). 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.

- d. Research Projects Involving Human Subjects, Human Tissue, Data or Recordings Involving Human Subjects.** Any application that includes an undergraduate and/or graduate student's and/or post doctoral associate's participation in research involving human subjects, human tissue/cells, data or recordings involving human subjects 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 research activities involving human subjects that have been or will be 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. NIST will not issue a single project assurance (SPA) for any IRB reviewing any human subjects protocol proposed to NIST. 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>.

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 is required to adhere to all Presidential policies, statutes, guidelines and regulations regarding the use of human embryonic stem cells. The DoC 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 will not support or conduct any type of research that the NIH Guidelines prohibit NIH from funding. The DoC 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 includes exempt and/or non-exempt research activities involving human subjects the following information is required in the proposal:

- (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 nonduplication-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.

- e. Research Projects Involving Vertebrate Animals.** Any application that includes an undergraduate and/or graduate student's and/or post doctoral associate's participation in research involving live vertebrate animals 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 that are being cared for, euthanized, or used by the project participants to accomplish research goals, teaching, or testing. 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.

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 includes research activities involving live vertebrate animals the following information is required in the proposal:

- (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.

- f. **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 this program fails to receive funding or is 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.

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 March 2008 (<http://www.osec.doc.gov/oam/archive/docs/GRANTS/DOC%20STCsMAR08Rev.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, or any portion thereof, unless otherwise specified in a special award condition. Reports are due no later than 30 days following the end of each reporting period. A final SF-425 will be required within 90 days after the expiration date of the award.

- (2) **Performance (Technical) Reports.** Unless otherwise specified in the special award conditions, each PREP-MML undergraduate student will be required to submit to his/her institution and NIST a brief report on their experiences and accomplishments during the semester or quarter within 30 days after the end of the school term (semester or quarter). If undergraduate participants leave the program before the end of their school terms, they will be required to submit their reports within 30 days of leaving. The PREP-MML graduate students and post-doctoral associates will be required to submit a brief annual report describing their experiences and accomplishments by each August 31st of their fellowship term. The PREP-MML participants who leave the program without completing their fellowship terms will be required to submit their reports within 30 days of

their departures.

Additionally, the recipient's PREP-MML Coordinator 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.

- 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)

Subject Area	Point of Contact
Technical questions:	Donna Kimball Phone: 301-975-8362 E-mail: donna.kimball@nist.gov
Electronic application submission	Christopher Hunton Phone: 301-975-5718 Fax: 301-840-5979 E-mail: christopher.hunton@nist.gov
Grant rules and regulations	James Browning Phone: 301-975-8088 Fax: 301-840-5976 E-mail: james.browning@nist.gov