

**FINANCIAL ASSISTANCE  
FUNDING OPPORTUNITY ANNOUNCEMENT**



**U. S. Department of Energy  
Office of Science  
Office of Biological and Environmental Research**



**U. S. Department of Agriculture  
National Institute of Food and Agriculture**

**Plant Feedstock Genomics for Bioenergy: A Joint Research  
Funding Opportunity Announcement USDA, DOE**

**Funding Opportunity Number: DE-FOA-0001034  
Announcement Type: Initial  
CFDA Number: 81.049 & 10.310**

|                                   |                                                                            |
|-----------------------------------|----------------------------------------------------------------------------|
| <b>Issue Date:</b>                | <b>11/19/2013</b>                                                          |
| <b>Letter of Intent Due Date:</b> | <b>Not Applicable</b>                                                      |
| <b>Pre-Application Due Date:</b>  | <b>12/19/2013 at 5 PM Eastern Time<br/>(A Pre-Application is required)</b> |
| <b>Encourage/Discourage Date:</b> | <b>01/09/2014 at 5 PM Eastern Time</b>                                     |
| <b>Application Due Date:</b>      | <b>02/25/2014 at 11:59 PM Eastern Time</b>                                 |

## Table of Contents

|                                                           |    |
|-----------------------------------------------------------|----|
| REGISTRATIONS .....                                       | I  |
| SECTION I – FUNDING OPPORTUNITY DESCRIPTION.....          | 1  |
| SECTION II – AWARD INFORMATION.....                       | 5  |
| A. TYPE OF AWARD INSTRUMENT.....                          | 5  |
| B. ESTIMATED FUNDING .....                                | 5  |
| C. MAXIMUM AND MINIMUM AWARD SIZE.....                    | 5  |
| D. EXPECTED NUMBER OF AWARDS.....                         | 6  |
| E. ANTICIPATED AWARD SIZE .....                           | 6  |
| F. PERIOD OF PERFORMANCE .....                            | 6  |
| G. TYPE OF APPLICATION .....                              | 6  |
| SECTION III – ELIGIBILITY INFORMATION .....               | 7  |
| A. ELIGIBLE APPLICANTS .....                              | 7  |
| B. COST SHARING.....                                      | 7  |
| C. ELIGIBLE INDIVIDUALS.....                              | 7  |
| SECTION IV – APPLICATION AND SUBMISSION INFORMATION ..... | 8  |
| A. ADDRESS TO REQUEST APPLICATION PACKAGE.....            | 8  |
| B. LETTER OF INTENT AND PRE-APPLICATION.....              | 8  |
| C. CONTENT AND APPLICATION FORMS.....                     | 12 |
| D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS.....            | 23 |
| E. SUBMISSION DATES AND TIMES .....                       | 24 |
| F. INTERGOVERNMENTAL REVIEW.....                          | 24 |
| G. FUNDING RESTRICTIONS .....                             | 24 |
| H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS .....   | 25 |
| SECTION V - APPLICATION REVIEW INFORMATION.....           | 29 |
| A. CRITERIA .....                                         | 29 |
| B. REVIEW AND SELECTION PROCESS .....                     | 30 |
| C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES .....  | 31 |
| SECTION VI - AWARD ADMINISTRATION INFORMATION .....       | 32 |
| A. AWARD NOTICES.....                                     | 32 |
| B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS.....   | 33 |

|                                                                 |    |
|-----------------------------------------------------------------|----|
| C. REPORTING .....                                              | 35 |
| SECTION VII - QUESTIONS/AGENCY CONTACTS.....                    | 37 |
| A. QUESTIONS .....                                              | 37 |
| B. AGENCY CONTACTS .....                                        | 37 |
| SECTION VIII - OTHER INFORMATION .....                          | 38 |
| A. MODIFICATIONS .....                                          | 38 |
| B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE.....                 | 38 |
| C. COMMITMENT OF PUBLIC FUNDS.....                              | 38 |
| D. PROPRIETARY APPLICATION INFORMATION .....                    | 38 |
| E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL ..... | 39 |
| F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM.....      | 39 |
| G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER.....                | 39 |
| H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES .....        | 40 |
| I. AVAILABILITY OF FUNDS .....                                  | 40 |
| SECTION IX - APPENDICES/REFERENCE MATERIAL .....                | 41 |

## **REGISTRATIONS**

### **A. Systems to Register In**

There are several one-time actions you must complete in order to submit an application in response to this Announcement. Applicants not currently registered with SAM and Grants.gov should allow **at least 44 days** to complete these requirements. You should start the process as soon as possible.

Applicants must obtain a DUNS number at <http://fedgov.dnb.com/webform>.

Applicants must register with the System for Award Management (SAM) at <http://www.sam.gov/>. If you had an active registration in the Central Contractor Registry (CCR), you should have an active registration in SAM. More information about SAM registration for applicants is found at [https://www.sam.gov/sam/transcript/Quick\\_Guide\\_for\\_Grants\\_Registrations\\_v1.7.pdf](https://www.sam.gov/sam/transcript/Quick_Guide_for_Grants_Registrations_v1.7.pdf).

Applicants must register with FedConnect at [www.fedconnect.net](http://www.fedconnect.net). The full, binding version of assistance agreements will be posted to FedConnect.

Recipients must register with the Federal Funding Accountability and Transparency Act Subaward Reporting System at <https://www.frs.gov>. This registration must be completed before an award may be made: you are advised to register while preparing your application.

### **B. Registering in Grants.gov**

Applicants must register with Grants.gov.

For organizations, please follow the procedures detailed below, making use of the checklist provided below:

<http://www.grants.gov/web/grants/applicants/organization-registration.html>  
<http://www.grants.gov/documents/19/18243/OrganizationRegChecklist.pdf>

For individuals, please follow the procedures detailed below:

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

Organizations and individuals must have an E-Business (E-Biz) Point of Contact (POC). You may find the checklist at [http://www.grants.gov/documents/19/18243/E-Biz\\_POC\\_Checklist.pdf](http://www.grants.gov/documents/19/18243/E-Biz_POC_Checklist.pdf) useful.

Grants.gov maintains a User Guide at <http://www.grants.gov/documents/19/18243/GrantsGovApplicantUserGuide.pdf> and a list of Frequently Asked Questions at <http://www.grants.gov/web/grants/applicants/applicant-faqs.html>. Questions relating to the registration process, **system requirements, or how an application form works** must be directed to Grants.gov at 1-800-518-4726 or [support@grants.gov](mailto:support@grants.gov).

**IMPORTANT NOTICE:** When you have completed the grants.gov registration process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e., Grants.gov registration).

Applicants must download the application package, application forms and instructions, from Grants.gov at <http://www.grants.gov/>  
(Additional instructions are provided in Section IV A of this FOA.)

Applications must be submitted through Grants.gov to be considered for award. You cannot submit an application through Grants.gov unless you are registered. Please read the registration requirements carefully and start the process immediately. Remember you have to update your SAM registration annually. If you have any questions about your registration, you should contact the Grants.gov Helpdesk at 1-800-518-4726 to verify that you are still registered in Grants.gov.

### **C. DOE Office of Science Portfolio Analysis and Management System (PAMS)**

After you submit your application through Grants.gov, the application will automatically transfer into the Portfolio Analysis and Management System (PAMS) for processing by the DOE Office of Science. Many functions for grants and cooperative agreements can be done in PAMS, which is available at <https://pamspublic.science.energy.gov>.

You will want to “register to” your application: a process of linking yourself to the application after it has been submitted through grants.gov and processed by DOE.

You must register in PAMS to submit a pre-application or a letter of intent.

You may use the Internet Explorer, Firefox, Google Chrome, or Safari browsers to access PAMS.

Notifications sent from the PAMS system will come from the PAMS email address <[PAMS.Autoreply@science.doe.gov](mailto:PAMS.Autoreply@science.doe.gov)>. Please make sure your email server/software allows delivery of emails from the PAMS email address to yours.

Registering to PAMS is a two-step process; once you create an individual account, you must associate yourself with (“register to”) your institution. Detailed steps are listed below.

#### **1. CREATE PAMS ACCOUNT:**

To register, click the “Create New PAMS Account” link on the website <https://pamspublic.science.energy.gov/>.

- Click the “No, I have never had an account” link and then the “Create Account” button.
- You will be prompted to enter your name and email address, create a username and password, and select a security question and answer. Once you have done this, click the “Save and Continue” button.
- On the next page, enter the required information (at least one phone number and your mailing address) and any optional information you wish to provide (e.g., FAX number, website,

mailstop code, additional email addresses or phone numbers, Division/Department). Click the “Create Account” button.

- Read the user agreement and click the “Accept” button to indicate that you understand your responsibilities and agree to comply with the rules of behavior for PAMS.
- PAMS will take you the “Having Trouble Logging In?” page. (If you have been an Office of Science merit reviewer or if you have previously submitted an application, you may already be linked to an institution in PAMS. If this happens, you will be taken to the PAMS home page.)

## 2. REGISTER TO YOUR INSTITUTION:

- Click the link labeled “Option 2: I know my institution and I am here to register to the institution.” (Note: If you previously created a PAMS account but did not register to an institution at that time, you must click the Institutions tab and click the “Register to Institution” link.)
- PAMS will take you to the “Register to Institution” page.
- Type a word or phrase from your institution name in the field labeled, “Institution Name like,” choose the radio button next to the item that best describes your role in the system, and click the “Search” button. A “like” search in PAMS returns results that contain the word or phrase you enter; you do not need to enter the exact name of the institution, but you should enter a word or phrase contained within the institution name. (If your institution has a frequently used acronym, such as ANL for Argonne National Laboratory or UCLA for the Regents of the University of California, Los Angeles, you may find it easiest to search for the acronym under “Institution Name like.” Many institutions with acronyms are listed in PAMS with their acronyms in parentheses after their names.)
- Find your institution in the list that is returned by the search and click the “Actions” link in the Options column next to the institution name to obtain a dropdown list. Select “Add me to this institution” from the dropdown. PAMS will take you to the “Institutions – List” page.
- If you do not see your institution in the initial search results, you can search again by clicking the “Cancel” button, clicking the Option 2 link, and repeating the search.
- If, after searching, you think your institution is not currently in the database, click the “Cannot Find My Institution” button and enter the requested institution information into PAMS. Click the “Create Institution” button. PAMS will add the institution to the system, associate your profile with the new institution, and return you to the “Institutions – List” page when you are finished.

For help with PAMS, click the “External User Guide” link on the PAMS website, <https://pamspublic.science.energy.gov/>. You may also contact the PAMS Help Desk, which can be reached Monday through Friday, 9AM – 5:30 PM Eastern Time. Telephone: (855) 818-1846 (toll free) or (301) 903-9610, Email: [sc.pams-helpdesk@science.doe.gov](mailto:sc.pams-helpdesk@science.doe.gov). All submission and inquiries about this Funding Opportunity Announcement should reference **DE-FOA-0001034**.

## RECOMMENDATION

The Office of Science encourages you to register in all systems as soon as possible. You are also encouraged to submit letters of intent, pre-applications, and applications before the deadline.

## **Section I – FUNDING OPPORTUNITY DESCRIPTION**

### **GENERAL INQUIRIES ABOUT THIS FOA SHOULD BE DIRECTED TO:**

#### **Technical/Scientific Program Contact:**

**Program Manager:** Dr. Catherine M. Ronning  
U.S. Department of Energy  
Office of Biological and Environmental Research  
301-903-9549  
[catherine.ronning@science.doe.gov](mailto:catherine.ronning@science.doe.gov)

**Program Manager:** Dr. Ed Kaleikau  
U.S. Department of Agriculture  
National Institute of Food and Agriculture  
202-401-1931  
[ekaleikau@nifa.usda.gov](mailto:ekaleikau@nifa.usda.gov)

#### **Administrative Contact (questions about budgets and eligibility):**

Joanne Corcoran  
301-903-6488  
[joanne.corcoran@science.doe.gov](mailto:joanne.corcoran@science.doe.gov)

### **STATUTORY AUTHORITY**

Public Law 95-91, US Department of Energy Organization Act  
Public Law 109-58, Energy Policy Act of 2005  
Public Law 110-246, Food, Conservation, and Energy Act of 2008  
Competitive, Special, and Facilities Research Grant Act (7 USC 450i(b))

### **APPLICABLE REGULATIONS**

U.S. Department of Energy Financial Assistance Rules, codified at 10 CFR 600  
U.S. Department of Energy, Office of Science Financial Assistance Program Rule, codified at 10 CFR 605  
7 CFR 3430 – NIFA procedures to implement Competitive and Noncompetitive Nonformula Grant Programs—General Grant Administrative Provisions

### **SUMMARY**

The U.S. Department of Energy's Office of Science, Office of Biological and Environmental Research (OBER), and the U.S. Department of Agriculture (USDA), National Institute of Food and Agriculture (NIFA), hereby announce their interest in receiving applications for genomics-based research that will lead to the improved use of biomass and plant feedstocks for the production of fuels such as ethanol or renewable chemical feedstocks. Specifically, applications are sought for research on plants that will improve biomass and oil seed characteristics, yield, or

sustainability. Research to overcome the biological barriers to the low-cost, high-quality, scalable and sustainable production of bioenergy feedstocks using the tools of genetics and genomics are encouraged.

## SUPPLEMENTARY INFORMATION

Renewable energy from plants, from lignocellulosic biomass and from seed oils, has the potential to reduce or remove dependency on fossil fuels as well as reduce negative environmental impacts from emissions of greenhouse gases and toxic pollutants. Realizing this potential will require the simultaneous development of high yielding production systems and bioconversion technologies that efficiently convert biomass energy and seed oils into the forms of energy usable by industry. Research applications are solicited for genomics-based research that will lead to improved utilization of plant biomass for the production of fuels such as ethanol or renewable chemical feedstocks. This FOA continues a commitment initiated in 2006 to conduct a fundamental research program in biomass genomics, providing the scientific foundation to facilitate the use of plant materials for bioenergy and biofuels. In 2014, the program seeks to build upon gains in genetic and genomic resources for bioenergy and biofuels by investigating environmental influences on gene expression and resulting phenotype, specifically bioenergy-relevant traits such as biomass yield and traits relevant to sustainable crop production such as nutrient/water utilization; to accelerate breeding of dedicated bioenergy feedstocks aimed at improving such traits; and to develop and use database and extension tools and resources for enhanced bioenergy crop research and training.

Specific areas of interest include:

- Research to further understanding of complex interactions between bioenergy feedstock plants and their environment, and how these processes influence plant growth, development, and expression of bioenergy-relevant traits such as biomass yield, nutrient and water use efficiency, and adaptation to changing environments, particularly on marginal croplands. Targeted crops include perennial grasses, sorghum, energy cane, woody biomass, and oilseed crops; research on the model crops *Brachypodium* and *Setaria* will also be considered if relevance and/or translatability to potential bioenergy crop plant(s) are clearly outlined. The long-term goal is to predict plant behavior under various conditions and use results to inform breeding programs. Specific areas include:
  - Beneficial or mutualistic plant-microbe interactions;
  - Adaptation to abiotic stresses;
  - Use of experimental data in the development of computational approaches and models to predict plant performance under varied conditions (proposals submitted under this topic area are encouraged to establish partnerships that maximize synergy and leverage with the DOE Systems Biology Knowledgebase (kbase.us)). *Applications focused on software development alone will not be considered).*
- Research to develop new cultivars of regionally adapted bioenergy feedstock crops in public breeding programs using innovative approaches to identify desirable traits and accelerate trait integration. The goal is to deploy dedicated energy feedstocks with

enhanced biomass yield, resistance / tolerance to environmental stress, climate change adaptation, and improved response to lower inputs.

- Targeted traits should aim to maximize biomass or seed oil yield and minimize water usage and nutrient inputs and focus on dedicated energy feedstocks: perennial grasses, sorghum, energy cane, woody biomass, and oilseed crops. Applications must include budgeted plans for research, extension, project management, and data and genetic resources management.
  - Approaches are expected to include research in the following areas but not limited to: utilization of advanced genomic and genetic tools, resources, and knowledge to accelerate the breeding cycle time; implementation of informatics-based tools for breeding; and development and use of extension tools for breeding and genomics.
  - Applicants are encouraged to consider developing content that is linked to their proposed breeding and genomics research objectives and suitable for delivery through the existing NIFA's eXtension Plant Breeding and Genomics Community of Practice ([http://www.extension.org/plant\\_breeding\\_genomics](http://www.extension.org/plant_breeding_genomics)). The goal is to amplify outreach and education efforts to plant breeders, seed industry professionals, and practitioners. A letter of acknowledgement from eXtension is required, and a letter of support may be required from the Community of Practice. For detailed guidance on how to "enhance an existing community of practice", go to <http://create.extension.org/node/2057> and <http://pbgworks.org/node/1066>. Applicants must plan ahead and allow additional time to develop this partnership.

**For USDA:**

- Applicants must provide a description and budgeted plan for the release of research results (e.g., data, germplasm, cultivars, genetic resources) that is compliant with the terms and conditions that govern USDA NIFA funded projects in the areas of plant breeding, genetics and genomics, especially– (Genetic Resources from Outside of the U.S., and Patents and Inventions including Plant Variety Protection) and; (Release of Animal or Plant Genome Sequence Data and Distribution of Animal or Plant Genomic Resources, and the Release or Distribution of Plant Germplasm). Terms and conditions can be found at: [http://www.nsf.gov/pubs/policydocs/rtc/agencyspecifics/nifa\\_512.pdf](http://www.nsf.gov/pubs/policydocs/rtc/agencyspecifics/nifa_512.pdf)
- All sequence and expression data must be released to public repositories (e.g., GenBank under the Bermuda standards; Gene Expression Omnibus (GEO) under Minimum Information About a Microarray Experiment (MIAME) compliance; etc.). All phenotype and map data must be deposited into an appropriate public database (e.g., major databases of the research community, etc.) in a rapid timeframe after quality control tests.

**For All Applicants:**

Research that seeks to increase starch content for improved nutrient qualities, to facilitate the digestion and fermentation of starch to produce sugars and other bio-based products or biofuels, or to increase grain yields or food yields for human consumption is not the focus of this FOA. Applications targeting algae or soybean will not be considered under this FOA.

Projects **should not** request support for whole genome-scale sequencing; such requests should be submitted separately to the DOE Joint Genome Institute's Community Sequencing Program for an independent merit review (see information at <http://www.jgi.doe.gov/CSP/index.html>). This FOA strongly encourages individual investigators as well as interdisciplinary teams that assemble a range of expertise into a coordinated approach; for the latter situation, applicants must include a clear plan describing the individual contributions of each participant, as well as the overall management scheme.

Information about the DOE Genomic Science Program data release policy, with which awardees will be expected to comply, is available at

<http://genomicscience.energy.gov/datasharing/index.shtml>.

Applicants are encouraged to visit the Plant Feedstocks Genomics for Bioenergy website for more detailed information about the program, including prior year award abstracts:

<http://www.genomicscience.energy.gov/research/DOEUSDA/>.

**Indirect Costs:**

- **DOE:** Explain the basis for each overhead and indirect cost. Include the current rate.
- **USDA:** Pursuant to Section 720 of the General Provisions in Title VII of the Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Programs (HR 112-284), for FY 2013, indirect costs were limited to 30 percent of the total Federal funds provided under each award. Therefore, when preparing budgets, applicants should limit their requests for recovery of indirect costs to the lesser of their institution's official negotiated indirect cost rate or the equivalent of 30 percent of total Federal funds awarded.

**Annual Meeting:** If a project is funded, beginning in the first year of funding, at least one member of the project team will be required to attend annual investigator meetings; these meetings may be held in conjunction with internationally attended genomics meetings (e.g. Plant and Animal Genome) or jointly with other DOE or USDA program meetings (e.g. the Genomic Science Program meeting) as specified by the USDA and DOE program managers. Reasonable travel expenses may be submitted as part of the project budget.

## **Section II – AWARD INFORMATION**

### **A. TYPE OF AWARD INSTRUMENT**

DOE anticipates awarding grants under this FOA.

### **B. ESTIMATED FUNDING**

It is anticipated that up to \$5 million total may be available for multiple awards to be made in FY 2014 depending on the availability of appropriated funds. The number of awards will be contingent on satisfactory peer review, the availability of appropriated funds, and the size of the awards. Multiple year funding is expected. Applicants may request project support for up to three years, with out-year support contingent on the availability of appropriated funds, progress of the research, and programmatic needs; it is anticipated that this will reflect a long-term commitment to improved use of primary feedstocks or residues for energy resources. Annual budgets are expected to range from \$200,000 to \$500,000 total costs.

Neither DOE nor USDA is under any obligation to pay for any costs associated with the preparation or submission of an application. DOE and USDA reserve the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this FOA.

This FOA is being released prior to the passage of an Appropriations Act for FY 2014. Enactment of additional Continuing Resolutions or an Appropriations Act may affect the availability or level of funding for this program.

The National Institute of Food and Agriculture is currently operating under temporary appropriations as part of the Continuing Resolution (CR) providing funds through January 15, 2014. Based on the current CR, NIFA anticipates the amount available for this program in FY 2014 will be approximately \$2 million. Adjustments will be made to program allocations once the FY 2014 appropriations are finalized. In FY 2014, it is anticipated that USDA support for this Plant Feedstock Genomics for Bioenergy FOA will be available through the Agriculture and Food Research Initiative (AFRI) Competitive Grants Program.

DOE is under no obligation to pay for any costs associated with preparation or submission of applications. DOE reserves the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this FOA.

### **C. MAXIMUM AND MINIMUM AWARD SIZE**

See B. Estimated Funding section above.

The award size will depend on the number of meritorious applications and the availability of appropriated funds.

#### **D. EXPECTED NUMBER OF AWARDS**

See B. Estimated Funding Section above

The exact number of awards will depend on the number of meritorious applications and the availability of appropriated funds.

#### **E. ANTICIPATED AWARD SIZE**

See B. Estimated Funding Section above.

#### **F. PERIOD OF PERFORMANCE**

See B. Estimated Funding section above.

#### **G. TYPE OF APPLICATION**

DOE will accept new and renewal applications under this FOA. USDA will accept only new applications under this FOA.

Renewal applications are requests for additional funding for a period subsequent to that provided by a current award. Renewal applications compete with all other applications and must be submitted by the established due date. In preparing a renewal application, applicants should assume that reviewers will not have access to previous applications. The application should be developed as fully as though the applicant were applying for the first time.

##### **RENEWAL APPLICATION INSTRUCTIONS**

Renewal applications must include the same forms and information as a new application, in addition to the following:

1. Include under the project description/narrative section, information on any research changes (size or scope) that affect the original research endeavor.
2. Include an estimate of anticipated unexpended funds that will remain at the end of the current project period.
3. Include a progress report, **5 pages maximum**, as an appendix to the narrative section (**this will not count against the narrative page limit**) that describes the results of work accomplished through the date of the renewal application and how such results relate to the activities proposed to be undertaken in the renewal period.

### **Section III – ELIGIBILITY INFORMATION**

#### **A. ELIGIBLE APPLICANTS**

All types of applicants are eligible to apply, except Federally Funded Research and Development Center (FFRDC) Contractors, and nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995.

**DOE Eligibility Criteria:** Applicants from U.S. Colleges and universities, non-profit organizations, for-profit commercial organizations, state and local governments, and unaffiliated individuals are eligible to apply, except as described in the preceding paragraph. Researchers from other Federal agencies are encouraged to submit a pre-application referencing **DE-FOA-0001034**; if a formal application is encouraged, additional submission information will be provided.

**USDA Eligibility Criteria:** The Secretary may award grants to State agricultural experiment stations; colleges and universities; university research foundations; other research institutions and organizations; Federal agencies; national laboratories; private organizations or corporations; individuals; or any group consisting of two or more of the aforementioned entities. Applications from scientists at non-U.S. organizations will not be accepted. Award recipients may subcontract to organizations not eligible to apply, provided such organizations are necessary for the conduct of the project.

#### **B. COST SHARING**

Cost sharing is not required.

#### **C. ELIGIBLE INDIVIDUALS**

If a DOE National Laboratory is involved as collaborator, the maximum that can be budgeted to the Lab is 50 percent of the total budget.

Individuals from underrepresented groups as well as individuals with disabilities are always encouraged to apply for assistance.

## **Section IV – APPLICATION AND SUBMISSION INFORMATION**

### **A. ADDRESS TO REQUEST APPLICATION PACKAGE**

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select “Apply for Grants”, and then select “Download Application Package.” Enter the CFDA number (81.049) and/or the funding opportunity number (DE-FOA-0001034) shown on the cover of this FOA and then follow the prompts to download the application package.

Applications submitted through [www.FedConnect.net](http://www.FedConnect.net) will not be accepted.

### **B. LETTER OF INTENT AND PRE-APPLICATION**

#### **1. Letter of Intent**

N/A

#### **2. Pre-application**

PRE-APPLICATION DUE DATE: DECEMBER 19, 2013

ENCOURAGE/DISCOURAGE DATE: JANUARY 9, 2014

A pre-application is required and must be submitted by December 19, 2013, 5:00 pm EST.

Pre-applications will be reviewed for responsiveness of the proposed work to the research topics identified in this FOA. DOE will send a response by email to each applicant encouraging or discouraging the submission of a full application by January 9, 2014. Applicants who have not received a response regarding the status of their preapplication by this date are responsible for contacting the program to confirm this status.

**Only those applicants that receive notification from DOE encouraging a full application may submit full applications.** No other full applications will be considered.

The pre-application attachment should include, at the top of the first page, the following information:

Title of Preapplication  
Principal Investigator Name, Job Title  
Institution  
PI Phone Number, PI Email Address  
Funding Opportunity Announcement Number: DE-FOA-0001034

Potential applicants must submit a brief pre-application that consists of a cover page **plus** two to three pages of narrative describing the research objectives, the technical approach(s), and the proposed team members and their roles. No budget information or biographical data need be

included, nor is an institutional endorsement necessary. The intent in requesting a pre-application is to save the time and effort of applicants in preparing and submitting a formal project application that may be inappropriate for the program. Pre-applications will be reviewed relative to the scope and research needs as outlined in the summary paragraph and in the SUPPLEMENTARY INFORMATION.

The pre-application must also include a list of the names and institutional affiliations of all participating investigators, including collaborators and consultants on the proposed project. For each funded investigator, provide a list of collaborative co-investigators including co-authors of the past 48 months, co-editors of the past 24 months, graduate and postdoctoral advisors/advisees, and close associations.

Those pre-applications that are encouraged will be used to help the Office of Science begin planning for the full application peer review process. The intent of the Office of Science in discouraging submission of certain full applications is to save the time and effort of applicants in preparing and submitting full applications not responsive to this funding opportunity announcement.

The Principal Investigator will be automatically notified when the pre-application is encouraged or discouraged. The DOE Office of Science Portfolio Analysis and Management System (PAMS) will send an email to the Principal Investigator from [PAMS.Autoreply@science.doe.gov](mailto:PAMS.Autoreply@science.doe.gov), and the status of the pre-application will be updated at the PAMS website <https://pamspublic.science.energy.gov/>. Notifications are sent as soon as the decisions to encourage or discourage are finalized.

It is important that the pre-application be a single file with extension .pdf, .docx, or .doc. The pre-application must be submitted electronically through the DOE Office of Science Portfolio Analysis and Management System (PAMS) website <https://pamspublic.science.energy.gov/>. The Principal Investigator and anyone submitting on behalf of the Principal Investigator must register for an account in PAMS before it will be possible to submit a pre-application. All PIs and those submitting pre-applications on behalf of PIs are encouraged to establish PAMS accounts as soon as possible to avoid submission delays.

You may use the Internet Explorer, Firefox, Google Chrome, or Safari browsers to access PAMS.

Registering to PAMS is a two-step process; once you create an individual account, you must associate yourself with (“register to”) your institution. Detailed steps are listed below.

**Create PAMS Account:**

To register, click the “Create New PAMS Account” link on the website

<https://pamspublic.science.energy.gov/>.

- Click the “No, I have never had an account” link and then the “Create Account” button.
- You will be prompted to enter your name and email address, create a username and password, and select a security question and answer. Once you have done this, click the “Save and Continue” button.
- On the next page, enter the required information (at least one phone number and your mailing address) and any optional information you wish to provide (e.g., FAX number, website, mailstop code, additional email addresses or phone numbers, Division/Department). Click the “Create Account” button.
- Read the user agreement and click the “Accept” button to indicate that you understand your responsibilities and agree to comply with the rules of behavior for PAMS.

PAMS will take you the “Having Trouble Logging In?” page. (If you have been an Office of Science merit reviewer or if you have previously submitted an application, you may already be linked to an institution in PAMS. If this happens, you will be taken to the PAMS home page.

**Register to Your Institution:**

- Click the link labeled “Option 2: I know my institution and I am here to register to the institution.” (Note: If you previously created a PAMS account but did not register to an institution at that time, you must click the Institutions tab and click the “Register to Institution” link.)
- PAMS will take you to the “Register to Institution” page.
- Type a word or phrase from your institution name in the field labeled, “Institution Name like,” choose the radio button next to the item that best describes your role in the system, and click the “Search” button. A “like” search in PAMS returns results that contain the word or phrase you enter; you do not need to enter the exact name of the institution, but you should enter a word or phrase contained within the institution name. (If your institution has a frequently used acronym, such as ANL for Argonne National Laboratory or UCLA for the Regents of the University of California, Los Angeles, you may find it easiest to search for the acronym under “Institution Name like.” Many institutions with acronyms are listed in PAMS with their acronyms in parentheses after their names.)
- Find your institution in the list that is returned by the search and click the “Actions” link in the Options column next to the institution name to obtain a dropdown list. Select “Add me to this institution” from the dropdown. PAMS will take you to the “Institutions – List” page.
- If you do not see your institution in the initial search results, you can search again by clicking the “Cancel” button, clicking the Option 2 link, and repeating the search.
- If, after searching, you think your institution is not currently in the database, click the “Cannot Find My Institution” button and enter the requested institution information into PAMS. Click the “Create Institution” button. PAMS will add the institution to the system, associate your profile with the new institution, and return you to the “Institutions – List” page when you are finished.

### **Submit Your Pre-Application:**

- Create your pre-application (called a preproposal in PAMS) outside the system and save it as a file with extension .docx, .doc, or .pdf. Make a note of the location of the file on your computer so you can browse for it later from within PAMS.
- Log into PAMS and click the Proposals tab. Click the “View / Respond to Funding Opportunity Announcements” link and find the current announcement in the list. Click the “Actions/Views” link in the Options column next to this announcement to obtain a dropdown menu. Select “Submit Preproposal” from the dropdown.
- On the Submit Preproposal page, select the institution from which you are submitting this preproposal from the Institution dropdown. If you are associated with only one institution in the system, there will only be one institution in the dropdown.
- Note that you must select one and only one Principal Investigator (PI) per preproposal; to do so, click the “Select PI” button on the far right side of the screen. Find the appropriate PI from the list of all registered users from your institution returned by PAMS. (Hint: You may have to sort, filter, or search through the list if it has multiple pages.) Click the “Actions” link in the Options column next to the appropriate PI to obtain a dropdown menu. From the dropdown, choose “Select PI.”
- If the PI for whom you are submitting does not appear on the list, it means he or she has not yet registered in PAMS. For your convenience, you may have PAMS send an email invitation to the PI to register in PAMS. To do so, click the “Invite PI” link at the top left of the “Select PI” screen. You can enter an optional personal message to the PI in the “Comments” box, and it will be included in the email sent by PAMS to the PI. You must wait until the PI registers before you can submit the preproposal. Save the preproposal for later work by clicking the “Save” button at the bottom of the screen. It will be stored in “My Preproposals” for later editing.
- Enter a title for your preproposal.
- Select the appropriate technical contact from the Program Manager dropdown.
- To upload the preproposal file into PAMS, click the “Attach File” button at the far right side of the screen. Click the “Browse” (or “Choose File” depending on your browser) button to search for your file. You may enter an optional description of the file you are attaching. Click the “Upload” button to upload the file.
- At the bottom of the screen, click the “Submit to DOE” button to save and submit the preproposal to DOE.
- Upon submission, the PI will receive an email from the PAMS system <[PAMS.Autoreply@science.doe.gov](mailto:PAMS.Autoreply@science.doe.gov)> acknowledging receipt of the preproposal.

You are encouraged to register for an account in PAMS at least a week in advance of the preproposal submission deadline so that there will be no delays with your submission.

For help with PAMS, click the “External User Guide” link on the PAMS website, <https://pamspublic.science.energy.gov/>. You may also contact the PAMS Help Desk, which can be reached Monday through Friday, 9 AM – 5:30 PM Eastern Time. Telephone: (855) 818-1846 (toll free) or (301) 903-9610, Email: [sc.pams-helpdesk@science.doe.gov](mailto:sc.pams-helpdesk@science.doe.gov). All submission and inquiries about this Funding Opportunity Announcement should reference **DE-FOA-0001034**.

Preapplications submitted outside PAMS will not be considered. Preapplications may not be submitted through grants.gov or www.FedConnect.net.

## C. CONTENT AND APPLICATION FORMS

You must complete the mandatory forms and any applicable optional forms (e.g., Disclosure of Lobbying Activities (SF-LLL)) in accordance with the instructions on the forms and the additional instructions below. Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.

### 1. SF-424 (R&R)

Complete this form first to populate data in other forms. Complete all the required fields in accordance with the pop-up instructions on the form. The list of certifications and assurances referenced in Field 17 is available on the DOE Financial Assistance Forms Page at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> under Certifications and Assurances.

#### CERTIFICATIONS AND REPRESENTATIONS

By submitting an application in response to this FOA the Applicant makes the following representations and certifications:

- It is **not** a corporation that has been convicted (or had an officer or agent of such corporation acting on behalf of the corporation convicted) of a felony criminal violation under **any** Federal law within the preceding 24 months.
- **No** officer or agent of the corporation have been convicted of a felony criminal violation for an offense arising out of actions for or on behalf of the corporation under Federal law in the past 24 months.
- It is **not** a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.
- If chosen for a grant award in excess of \$1,000,000, it will, by the end of the Federal Government's fiscal year, upgrade the efficiency of its facilities by replacing any incandescent lighting of the type for which section 325 of the Energy Policy and Conservation Act (42 USC 6295) establishes a standard that does not meet or exceed the energy efficiency standard for incandescent light bulbs set forth in that section with a lamp that meets or exceeds the standards for lamps established in or pursuant to that section.

#### PUBLIC POLICY REQUIREMENTS

The applicant assures DOE of its compliance with applicable public policy requirements, including the following:

|                                                     |                                                   |
|-----------------------------------------------------|---------------------------------------------------|
| Animal Welfare Act                                  | 7 USC 2131 et seq., 10 CFR 600, 10 CFR 602        |
| Buy American Act                                    | 41 USC 10 et seq.                                 |
| Cargo Preference Act                                | 46 USC 55305, 46 CFR 381.7                        |
| Civil Rights Protections                            | 10 CFR 1040, 10 CFR 600                           |
| Debarment and Suspension                            | 10 CFR 600, 2 CFR 180, 2 CFR 901                  |
| Drug-Free Workplace Act                             | 41 USC 701, 10 CFR 607                            |
| Environmental Protections                           | 42 USC 7401, 33 USC 1251, 42 USC 4321, 10 CFR 600 |
| False Claims Act                                    | 31 USC 3729, 18 USC 287, 18 USC 1001, 10 CFR 1013 |
| Federal Funding Accountability and Transparency Act | P.L. 109-282, 2 CFR 170                           |
| Fly America Act                                     | 49 USC 40118                                      |
| Hatch Act                                           | 5 USC 1501 et seq., 10 CFR 600                    |
| Human Research Subjects Protections                 | 10 CFR 745, 10 CFR 600                            |
| Lobbying Disclosure Act                             | 2 USC 1601 et seq.                                |
| Lobbying Prohibitions                               | 31 USC 1352, 10 CFR 601                           |
| Metric System use                                   | EO 12770                                          |
| Non-delinquency on Federal Debt                     | 28 USC 3201                                       |
| Prohibition on benefitting Members of Congress      | 41 USC 6306                                       |
| Seat Belt Use                                       | EO 13043                                          |
| Terrorist Financing                                 | EO 13224, 66 FR 49079                             |
| Text Messaging While Driving                        | EO 13513, 74 FR 51225                             |
| Trafficking in Persons                              | 22 USC 7104, 2 CFR 175                            |

## 2. Research and Related Other Project Information

Complete questions 1 through 6 and attach files. The files must comply with the following instructions:

### PROJECT SUMMARY/ABSTRACT (FIELD 7 ON THE FORM)

The project summary/abstract is a summary of the proposed activity suitable for distribution to the public and sufficient to permit potential reviewers to identify conflicts of interest. It must be a self-contained document. Provide the name of the applicant, the project title, the project director/principal investigator(s) (PD/PI) and the PD/PI's institutional affiliation, any coinvestigators and their institutional affiliations, the objectives of the project, a description of the project, including methods to be employed, and the potential impact of the project (i.e., benefits, outcomes. A sample is provided below:

|                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p style="text-align: center;">A Really Great Idea</p> <p style="text-align: center;">A. Smith, Lead Institution (Principal Investigator)<br/> A. Brown, Institution 2 (Co-Investigator)<br/> A. Jones, Institution 3 (Co-Investigator)</p> <p>Text of abstract</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The project summary must not exceed 1 page when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left and right) with font not smaller than 11 point. To attach a Project Summary/Abstract, click “Add Attachment.”

- Do not include any proprietary or sensitive business information.
- DOE may use the abstract may to prepare public reports about supported research.

#### DOE COVER PAGE

(PART OF PROJECT NARRATIVE ATTACHED TO FIELD 8 ON THE FORM)

The application narrative should begin with a cover page that will not count toward the project narrative page limitation. The cover page must include the following items:

- The project title
- Applicant/Institution:
- Street Address/City/State/Zip:
- Postal Address:
- Lead PI name, telephone number, email:
- Administrative Point of Contact name, telephone number, email:
- Funding Opportunity FOA Number: DE-FOA-0001034
- DOE/Office of Science Program Office: Office of Biological and Environmental Research
- DOE/Office of Science Program Office Technical Contact: Dr. Catherine M. Ronning
- DOE Award Number (if Renewal Application):
- PAMS Preproposal tracking number:

#### COVER PAGE SUPPLEMENT FOR COLLABORATIONS

(PART OF PROJECT NARRATIVE ATTACHED TO FIELD 8 ON THE FORM)

Collaborative applications submitted from different institutions must clearly indicate they are part of a collaborative project/group. Every partner institution must submit an application through its own sponsored research office. Each application within the collaborative group, including the narrative and all required appendices and attachments, must be identical with one exception: Each application must contain unique budget and budget justification documents corresponding to the expenditures for that application’s submitting institution only. Each collaborative group can have only one lead institution.

Each application belonging to a collaborative group should have the same title in Block 11 of the SF 424 (R&R) form.

The Office of Science will use the multiple applications associated with a collaborative group to create one consolidated document for merit review that consists of the common, identical application materials combined with a set of detailed budgets from the partner institutions. It is very important that every application in the collaborative group be identical (including the title) with the exception of the budget and budget justification pages.

If the project is a collaboration, provide the following information on a separate page as a supplement to the cover page.

- List all collaborating institutions by name with each institution's principal investigator on the same line.
- Indicate the lead PI who will be the point of contact and coordinator for the combined research activity.
- Provide a statement explaining the leadership structure of the collaboration.
- Include a description of each collaborating institution's facilities, equipment, and resources that will be made available to the collaborative group.
- If applicable, explain how students and junior researchers will be trained and mentored by the collaborators.
- Include a table modeled on the following chart providing summary budget information from all collaborating institutions. Provide the total costs of the budget request in each year for each institution and totals for all rows and columns.

| Collaborative Application Information |       |             |                  |                  |                  |                  |                  |                 |
|---------------------------------------|-------|-------------|------------------|------------------|------------------|------------------|------------------|-----------------|
|                                       | Names | Institution | Year 1<br>Budget | Year 2<br>Budget | Year 3<br>Budget | Year 4<br>Budget | Year 5<br>Budget | Total<br>Budget |
| Lead<br>PI                            |       |             |                  |                  |                  |                  |                  |                 |
| Co-PI                                 |       |             |                  |                  |                  |                  |                  |                 |
| Co-PI                                 |       |             |                  |                  |                  |                  |                  |                 |
| Co-PI                                 |       |             |                  |                  |                  |                  |                  |                 |

Example budget table (\$ in thousands)

\* Note that collaborating applications must be submitted separately.

#### PROJECT NARRATIVE (FIELD 8 ON THE FORM)

The project narrative **must not exceed 10 pages** of technical information, including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right). The font must not be smaller than 11 point. Merit reviewers will only consider the number of pages specified in the first sentence of this paragraph. This page limit does not apply to the Cover Page, Budget Page(s), Budget Justification, biographical material, publications and references, and appendices, each of which may have its own page limit.

Do not include any Internet addresses (URLs) that provide supplementary or additional information that constitutes a part of the application. Merit reviewers are not required to access Internet sites; however, Internet publications in a list of references will be treated identically to print publications. See Part VIII.D for instructions on how to mark proprietary application information. To attach a Project Narrative, click "Add Attachment."

**Background/Introduction:** Explanation of the importance and relevance of the proposed work as well as a review of the relevant literature.

**Proposed Research and Methods:** Identify the hypotheses to be tested (if any) and details of the methods to be used including the integration of experiments with theoretical and computational research efforts.

**Timetable of Activities:** Timeline for all major activities including milestones and deliverables.

**Project Objectives:** This section should provide a clear, concise statement of the specific objectives/aims of the proposed project.

**Data Sharing Plan:** All funded projects will be required to comply with the Genomic Science program data sharing policy: <http://genomicscience.energy.gov/datasharing/GTLDataPolicy.pdf>. Applications must include a plan for data management and data sharing that includes details on submitting publication-related data and information to a national or international public repository.

The Project Narrative comprises the research plan for the project. It should contain enough background material in the Introduction, including review of the relevant literature, to demonstrate sufficient knowledge of the state of the science. The major part of the narrative should be devoted to a description and justification of the proposed project, including details of the method to be used. It should also include a timeline for the major activities of the proposed project, and should indicate which project personnel will be responsible for which activities, and **must** include a data sharing plan.

#### APPENDIX 1: BIOGRAPHICAL SKETCH

Provide a biographical sketch for the project director/principal investigator (PD/PI) and each senior/key person listed in Section A on the R&R Budget form.

- Provide the biographical sketch information as an appendix to your project narrative.
- Do not attach a separate file.
- The biographical sketch appendix will not count in the project narrative page limitation.
- The biographical information (curriculum vitae) for each person must not exceed 5 pages when printed on 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right) with font not smaller than 11 point and must include:

**Education and Training:** Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree and year.

**Research and Professional Experience:** Beginning with the current position list, in chronological order, professional/academic positions with a brief description.

**Publications:** Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically. Patents, copyrights and software systems developed may be provided in addition to or substituted for publications.

In cases where the author list is exceptionally long, or the applicant is a member of a consortium which is given as the author (e.g., a genome sequencing paper; the Arabidopsis Genome Initiative) it is acceptable to list only the first few authors or the consortium name, as appropriate.

**Synergistic Activities:** List no more than 5 professional and scholarly activities related to the effort proposed.

**Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers:** Provide the following information in this section:

- **Collaborators and Co-editors:** List in alphabetical order all persons, including their current organizational affiliation, who are, or who have been, collaborators or co-authors with you on a research project, book or book article, report, abstract, or paper during the 48 months preceding the submission of this application. For publications or collaborations with more than 10 authors or participants, only list those individuals in the core group with whom the Principal Investigator interacted on a regular basis while the research was being done. Also, list any individuals who are currently, or have been, co-editors with you on a special issue of a journal, compendium, or conference proceedings during the 24 months preceding the submission of this application. If there are no collaborators or co-editors to report, state “None.”
- **Graduate and Postdoctoral Advisors and Advisees:** List the names and current organizational affiliations of your graduate advisor(s) and principal postdoctoral sponsor(s). Also, list the names and current organizational affiliations of your graduate students and postdoctoral associates.

It is important that we have a complete list of potential COIs. If inclusion of this list in Appendix 1 will cause you to exceed the 5-page limit, please submit the list separately as “Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers” under Appendix 6: Other Attachment.

**Personally Identifiable Information:** Do not include sensitive personally identifiable information such as a Social Security Number, date of birth, or city of birth. Do not include information that a merit reviewer should not make use of.

## APPENDIX 2: CURRENT AND PENDING SUPPORT

Provide a list of all current and pending support (both Federal and non-Federal) for the Project Director/Principal Investigator(s) (PD/PI) and senior/key persons, including subawardees, for ongoing projects and pending applications. For each organization providing support, show the total award amount for the entire award period (including indirect costs) and the number of person-months per year to be devoted to the project by the senior/key person. Provide the Current and Pending Support as an appendix to your project narrative. Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review.

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

## APPENDIX 3: BIBLIOGRAPHY & REFERENCES CITED

Provide a bibliography of any references cited in the Project Narrative. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. For research areas where there are routinely more than ten coauthors of archival publications, you may use an abbreviated style such as the Physical Review Letters (PRL) convention for citations (listing only the first author). For example, your paper may be listed as, “A Really Important New Result,” A. Aardvark et. al. (MONGO Collaboration), PRL 999. Include only bibliographic citations. Applicants should be especially careful to follow scholarly practices in providing citations for source materials relied upon when preparing any section of the application. Provide the Bibliography and References Cited information as an appendix to your project narrative.

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

## Appendix 4: Facilities & Other Resources

This information is used to assess the capability of the organizational resources, including subawardee resources, available to perform the effort proposed. Identify the facilities to be used (Laboratory, Animal, Computer, Office, Clinical and Other). If appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Describe other resources available to the project (e.g., machine shop, electronic shop) and the extent to which they would be available to the project. For proposed investigations requiring access to experimental user facilities maintained by institutions other than the applicant, please provide a document from the facility manager confirming that the researchers will have access to the facility. Please provide the Facility and Other Resource information as an appendix to your project narrative.

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

## APPENDIX 5: EQUIPMENT

List major items of equipment already available for this project and, if appropriate identify location and pertinent capabilities. Provide the Equipment information as an appendix to your project narrative.

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

## APPENDIX 6: OTHER ATTACHMENT

If you need to elaborate on your responses to questions 1-6 on the “Other Project Information” document, please provide the Other Attachment information as an appendix to your project narrative. Information not easily accessible to a reviewer may be included in this appendix, but do not use this appendix to circumvent the page limitations of the application, except as noted under Appendix 1: Biographical Sketch: Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers. **Reviewers are not required to consider information in this appendix.**

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

Do not attach any of the requested appendices described above as files for fields 9, 10, 11, and 12. Follow the above instructions to include the information as appendices to the project narrative file. These appendices will not count toward the project narrative’s page limitation.

## 3. Research And Related Budget

Complete the Research and Related Budget form in accordance with the instructions on the form (Activate Help Mode to see instructions) and the following instructions. You must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. You must complete all the mandatory information on the form before the NEXT PERIOD button is activated. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this FOA (See PART IV, G).

### Budget Fields

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section A<br>Senior/Key Person | For each Senior/Key Person, enter the requested information. List personnel, base salary, the number of months that person will be allocated to the project, requested salary fringe benefits, and the total funds requested for each person. The requested salary must be the product of the base salary and the effort.<br>Include a written narrative in the budget justification that justifies the need for requested personnel. |
| Section B<br>Other Personnel   | List personnel, the number of months that person will be allocated to the project, requested salary fringe benefits, and the total funds requested for                                                                                                                                                                                                                                                                                |

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | <p>each person.</p> <p>Include a written narrative in the budget justification that fully justifies the need for requested personnel.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Section C<br>Equipment                            | <p>For the purpose of this budget, equipment is designated as an item of property that has an acquisition cost of \$5,000 or more and an expected service life of more than one year. (Note that this designation applies for proposal budgeting only and differs from the DOE definition of capital equipment.) List <b>each</b> item of equipment separately and justify each in the budget justification section. Do not aggregate items of equipment. Allowable items ordinarily will be limited to research equipment and apparatus not already available for the conduct of the work. General-purpose office equipment is not eligible for support unless primarily or exclusively used in the actual conduct of scientific research.</p>                                                                                                        |
| Section D<br>Travel                               | <p>For purposes of this section only, travel to Canada or to Mexico is considered domestic travel. In the budget justification, list each trip's destination, dates, estimated costs including transportation and subsistence, number of staff traveling, the purpose of the travel, and how it relates to the project. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). To qualify for support, attendance at meetings or conferences must enhance the investigator's capability to perform the research, plan extensions of it, or disseminate its results. Domestic travel is to be justified separately from foreign travel.</p>                                                                                                                                |
| Section E<br>Participant/Trainee<br>Support Costs | <p>If applicable, submit training support costs. Educational projects that intend to support trainees (precollege, college, graduate and post graduate) must list each trainee cost that includes stipend levels and amounts, cost of tuition for each trainee, cost of any travel (provide the same information as needed under the regular travel category), and costs for any related training expenses. Participant costs are those costs associated with conferences, workshops, symposia or institutes and breakout items should indicate the number of participants, cost for each participant, purpose of the conference, dates and places of meetings and any related administrative expenses.</p> <p>Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis).</p> |
| Section F<br>Other Direct Costs                   | <ul style="list-style-type: none"> <li>• <b>Materials and Supplies:</b> Enter total funds requested for materials and supplies in the appropriate fields. In the budget justification, indicate general categories such as glassware, and chemicals, including an amount for each category (items not identified under "Equipment"). Categories less than \$1,000 are not required to be itemized. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis).</li> <li>• <b>Publication Costs:</b> Enter the total publication funds requested. The proposal budget may request funds for the costs of documenting, preparing, publishing or otherwise making available to others the</li> </ul>                                                                              |

|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                              | <p>findings and products of the work conducted under the award. In the budget justification, include supporting information. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis).</p> <ul style="list-style-type: none"> <li>• <b>Consultant Services:</b> Enter total funds requested for all consultant services. In the budget justification, identify each consultant, the services he/she will perform, total number of days, travel costs, and total estimated costs. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis).</li> <li>• <b>ADP/Computer Services:</b> Enter total funds requested for ADP/Computer Services. The cost of computer services, including computer-based retrieval of scientific, technical and education information may be requested. In the budget justification, include the established computer service rates at the proposing organization if applicable. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis).</li> <li>• <b>Subawards/Consortium/Contractual Costs:</b> Enter total costs for all subawards/consortium organizations and other contractual costs proposed for the project. In the budget justification, justify the details.</li> <li>• <b>Equipment or Facility Rental/User Fees:</b> Enter total funds requested for Equipment or Facility Rental/User Fees. In the budget justification, identify each rental/user fee and justify. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis).</li> <li>• <b>Alterations and Renovations:</b> Enter total funds requested for Alterations and Renovations. In the budget justification, itemize by category and justify the costs of alterations and renovations, including repairs, painting, removal or installation of partitions, shielding, or air conditioning. Where applicable, provide the square footage and costs.</li> <li>• <b>Other:</b> Add text to describe any other Direct Costs not requested above. Enter costs associated with “Other” item(s). Use the budget justification to further itemize and justify.</li> </ul> |
| Section G<br>Direct Costs                    | This represents Total Direct Costs (Sections A through F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Section H<br>Other Indirect Costs            | Enter the Indirect Cost information for each field. Only four general categories of indirect costs are allowed/requested on this form, so please consolidate if needed. Include the cognizant Federal agency and contact information if using a negotiated rate agreement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Section I<br>Total Direct and Indirect Costs | This is the total of Sections G and H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## BUDGET JUSTIFICATION (FIELD K ON THE FORM)

Provide the required supporting information for the following costs (See R&R Budget instructions): equipment; domestic and foreign travel; participant/trainees; materials and supplies; publication; consultant services; ADP/computer services; subaward/consortium/contractual; equipment or facility rental/user fees; alterations and renovations; and indirect cost type. Provide any other information you wish to submit to justify your budget request. **Attach a single budget justification file for the entire project period in field K.** The file automatically carries over to each budget year.

### 4. R&R Subaward Budget Attachment(s) Form

**Budgets for Subawardees, other than DOE FFRDC Contractors:** You must provide a separate cumulative R&R budget for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (whichever is less). If you are selected for award, you must submit a multi-year budget for each of these subawardees (See Section IV.D for submission of Subawardees' multi-year budgets). Download the R&R Budget Attachment from the R&R SUBAWARD BUDGET ATTACHMENT(S) FORM and e-mail it to each subawardee that is required to submit a separate budget. After the subawardee has e-mailed its completed budget back to you, attach it to one of the blocks provided on the form. Use up to 10 letters of the subawardee's name (plus.xfd) as the file name (e.g., ucla.xfd or energyres.xfd).

### 5. Project/Performance Site Location(s)

Indicate the primary site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the blocks provided.

Note that the Project/Performance Site Congressional District is entered in the format of the 2 digit state code followed by a dash and a 3 digit Congressional district code, for example VA-001. Hover over this field for additional instructions.

Use the Next Site button to expand the form to add additional Project/Performance Site Locations.

## 6. Summary of Required Forms/Files

Your application must include the following items:

| <b>Name of Document</b>                                         | <b>Format</b> | <b>Attach to</b> |
|-----------------------------------------------------------------|---------------|------------------|
| <b>SF 424 (R&amp;R)</b>                                         | Form          | N/A              |
| <b>RESEARCH AND RELATED Other Project Information</b>           | Form          | N/A              |
| Project Summary/Abstract                                        | PDF           | Field 7          |
| Project Narrative, including required appendices                | PDF           | Field 8          |
| <b>RESEARCH &amp; RELATED BUDGET</b>                            | Form          | N/A              |
| Budget Justification                                            | PDF           | Field K          |
| <b>PROJECT/PERFORMANCE SITE LOCATION(S)</b>                     | Form          | N/A              |
| <b>SF-LLL Disclosure of Lobbying Activities</b> , if applicable | Form          | N/A              |

## D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

If selected for award, NIFA and DOE reserve the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable
- For NIFA, the NIFA Supplemental Form

Applications that USDA has agreed to fund will be sent to the agency for final negotiations and implementation of awards.

## **E. SUBMISSION DATES AND TIMES**

### **1. Letter of Intent Due Date**

N/A

### **2. Pre-application Due Date**

December 19, 2013, 5:00 pm EST

A pre-application is required and must be submitted by December 19, 2013, 5:00 pm EST.

Pre-applications will be reviewed for responsiveness of the proposed work to the research topics identified in this FOA. DOE will send a response by email to each applicant encouraging or discouraging the submission of a formal application by *January 9, 2014*. Applicants who have not received a response regarding the status of their pre-application by this date are responsible for contacting the program to confirm this status. Only those applicants that receive notification from DOE encouraging a formal application may submit full applications. No other formal applications will be considered.

### **3. Application Due Date**

February 25, 2014, 11:59 PM EST

You are encouraged to transmit your application well before the deadline.

### **4. Late Submissions**

Applications received after the deadline will not be reviewed or considered for award.

## **F. INTERGOVERNMENTAL REVIEW**

This program is not subject to Executive Order 12372 Intergovernmental Review of Federal Programs.

## **G. FUNDING RESTRICTIONS**

Funding for all awards and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority.

**Cost Principles:** Costs must be allowable, allocable and reasonable in accordance with the applicable Federal cost principles referenced in 10 CFR 600. The cost principles for commercial organization are in FAR Part 31.

**Pre-award Costs:** Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR 600 and 2 CFR 215. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90 day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

## **H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS**

### **1. Where to Submit**

Applications must be submitted through grants.gov to be considered for award.

Submit electronic applications through the "Apply for Grants" function at [www.Grants.gov](http://www.Grants.gov). If you have problems completing the registration process or submitting your application, call Grants.gov at 1-800-518-4726 or send an email to [support@grants.gov](mailto:support@grants.gov).

Please ensure that you have read the applicable instructions, guides, help notices, frequently asked questions, and other forms of technical support on grants.gov.

### **2. Registration Process**

#### **ONE-TIME REGISTRATION PROCESS**

You must complete the one-time registration process (all steps) before you can submit your first application through Grants.gov (See <http://www.grants.gov/web/grants/applicants/grant-application-process.html> ). We recommend that you start this process at least six weeks before the application due date. It may take 44 days or more to complete the entire process. Use the Grants.gov Organizational Registration Checklists at <http://www.grants.gov/web/grants/applicants/organization-registration.html> to guide you through the process. IMPORTANT: During the SAM registration process, you will be asked to designate an E-Business Point of Contact (EBIZ POC). The EBIZ POC must obtain a special password called "Marketing Partner Identification Number" (MPIN). When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e., Grants.gov registration).

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of four e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to two (2) business days from application submission to receipt of email Number 2. The titles of the four e-mails are:

Number 1 - Grants.gov Submission Receipt Number

Number 2 - Grants.gov Submission Validation Receipt for Application Number

Number 3 - Grants.gov Grantor Agency Retrieval Receipt for Application Number

Number 4 - Grants.gov Agency Tracking Number Assignment for Application Number

#### **4. Viewing Submitted Applications**

Each Grants.gov application submitted to the DOE Office of Science (SC) automatically transfers into PAMS and is subsequently assigned to a program manager. At the time of program manager assignment, the three people listed on the SF-424 (R&R) cover page will receive an email with the subject line, "Receipt of Proposal 0000xxxxxx by the DOE Office of Science." These three people are the Principal Investigator (Block 14), Authorized Representative (Block 19), and Point of Contact (Block 5). In PAMS notation, applications are known as proposals, the Principal Investigator is known as the PI, the Authorized Representative is known as the Sponsored Research Officer/Business Officer/Administrative Officer (SRO/BO/AO), and the Point of Contact is known as the POC.

There will be a period of time between the application's receipt at grants.gov and its assignment to a DOE Office of Science program manager. Program managers are typically assigned two weeks after applications are due at grants.gov: please refrain from attempting to view the proposal in PAMS until you receive an email providing the assignment of a program manager.

Once the email is sent, the PI, SRO/BO/PO, and POC will each be able to view the submitted proposal in PAMS. Viewing the proposal is optional.

You may use the Internet Explorer, Firefox, Google Chrome, or Safari browsers to access PAMS.

Following are two sets of instructions for viewing the submitted proposal, one for individuals who already have PAMS accounts and one for those who do not.

If you already have a PAMS account, follow these instructions:

1. Log in to PAMS at <https://pamspublic.science.energy.gov/>.
2. Click the "Proposals" tab and click "Access Previously Submitted Grants.gov Proposal."
3. Enter the following information:
  - Proposal ID: Enter the ten-digit PAMS proposal ID, including the leading zeros (e.g., 00002xxxxx). Do not use the Grants.gov proposal number. Use the PAMS number previously sent to you in the email with subject line, "Receipt of Proposal ...".
  - Email (as entered in Grants.gov proposal): Enter your email address as it appears on the SF424(R&R) Cover Page.
  - Choose Role: Select the radio button in front of the role corresponding to the SF-424

- (R&R) cover page. If your name appears in block 19 of the SF-424 (R&R) cover page as the authorizing representative, select “SRO/BO/AO (Sponsored Research Officer/Business Officer/Administrative Officer).” If your name appears in block 14 of the SF424 R&R cover page as the PI, select “Principal Investigator (PI).” If your name appears in block 5 of the SF424 R&R as the point of contact, select “Other (POC).”
4. Click the “Save and Continue” button. You will be taken to your “My Proposals” page. The Grants.gov proposal will now appear in your list of proposals. Click the “Actions/Views” link in the options column next to this proposal to obtain a dropdown list. Select “Proposal” from the dropdown to see the proposal. Note that the steps above will work only for proposals submitted to the DOE Office of Science since May 2012.

If you do not already have a PAMS account, follow these instructions:

1. To register, click the “Create New PAMS Account” link on the website <https://pamspublic.science.energy.gov/>.
2. Click the “No, I have never had an account” link and then the “Create Account” button.
3. You will be prompted to enter your name and email address, create a username and password, and select a security question and answer. Once you have done this, click the “Save and Continue” button.
4. On the next page, enter the required information (at least one phone number and your mailing address) and any optional information you wish to provide (e.g., FAX number, website, mailstop code, additional email addresses or phone numbers, Division/Department). Click the “Create Account” button.
5. Read the user agreement and click the “Accept” button to indicate that you understand your responsibilities and agree to comply with the rules of behavior for PAMS.
6. You will be taken to the Register to Institution page. Select the link labeled, “Option 1: My institution has submitted a proposal in Grants.gov. I am here to register as an SRO, PI, or POC (Sponsored Research Officer, Principal Investigator, or Point of Contact).”
7. Enter the following information:
  - Proposal ID: Enter the ten-digit PAMS proposal ID, including the leading zeros (e.g., 00002xxxxx). Do not use the Grants.gov proposal number. Use the PAMS number previously sent to you in the email with subject line, “Receipt of Proposal ...”.
  - Email (as entered in Grants.gov proposal): Enter your email address as it appears on the SF424(R&R) Cover Page.
  - Choose Role: Select the radio button in front of the role corresponding to the SF-424 (R&R) cover page. If your name appears in block 19 of the SF-424 (R&R) cover page as the authorizing representative, select “SRO/BO/AO (Sponsored Research Officer/Business Officer/Administrative Officer).” If your name appears in block 14 of the SF424 R&R cover page as the PI, select “Principal Investigator (PI).” If your name appears in block 5 of the SF424 R&R as the point of contact, select “Other (POC).”
8. Click the “Save and Continue” button. You will be taken to your “My Proposals” page. The Grants.gov proposal will now appear in your list of proposals. Click the “Actions/Views” link in the options column next to this proposal to obtain a dropdown list. Select “Proposal” from the dropdown to see the proposal.

If you were listed as the PI on a prior submission but you have not previously created an account, you may already be listed in PAMS. If this is the case, you will be taken to the PAMS home page after agreeing to the Rules of Behavior. If that happens, follow the instructions listed above under “If you already have a PAMS account...” to access your Grants.gov proposal.

The steps above will work only for proposals submitted to the DOE Office of Science since May 2012.

For help with PAMS, click the “External User Guide” link on the PAMS website, <https://pamspublic.science.energy.gov/>. You may also contact the PAMS Help Desk, which can be reached Monday through Friday, 9 AM – 5:30 PM Eastern Time. Telephone: (855) 818-1846 (toll free) or (301) 903-9610, Email: [sc.pams-helpdesk@science.doe.gov](mailto:sc.pams-helpdesk@science.doe.gov). All submission and inquiries about this Funding Opportunity Announcement should reference **DE-FOA-0001034**.

## **Section V - APPLICATION REVIEW INFORMATION**

### **A. CRITERIA**

#### **1. Initial Review Criteria**

Prior to a comprehensive merit evaluation, DOE will perform an initial review in accordance with 10 CFR 605.10(b) to determine that (1) the applicant is eligible for the award; (2) the information required by the FOA has been submitted; (3) all mandatory requirements are satisfied; (4) the proposed project is responsive to the objectives of the funding opportunity announcement, and (5) the proposed project is not duplicative of programmatic work. Applications that fail to pass the initial review will not be forwarded for merit review and will be eliminated from further consideration.

#### **2. Merit Review Criteria**

Applications will be subjected to scientific merit review (peer review) and will be evaluated against the following criteria, listed in descending order of importance as found in 10 CFR 605.10 (d), the Office of Science Financial Assistance Program Rule.

- Scientific and/or Technical Merit of the Project;
- Appropriateness of the Proposed Method or Approach;
- Competency of Applicant's Personnel and Adequacy of Proposed Resources; and
- Reasonableness and Appropriateness of the Proposed Budget.

The evaluation process will include program policy factors such as the relevance of the proposed research to the terms of the FOA and the agency's programmatic needs. Note that external peer reviewers are selected with regard to both their scientific expertise and the absence of conflict-of-interest issues. Both Federal and non-Federal reviewers may be used, and submission of an application constitutes agreement that this is acceptable to the investigator(s) and the submitting institution. DOE and USDA will make final funding decisions based on the results of the peer review and internal programmatic review. USDA agrees to abide by DOE's application review procedures. Applicants selected for funding may be required to provide additional information. The application will then be forwarded to the appropriate offices for funding in accordance with each agency's procedures.

The questions below are provided to the merit reviewers to elaborate the criteria established by regulation:

#### SCIENTIFIC AND/OR TECHNICAL MERIT OF THE PROPOSED RESEARCH

- What is the scientific innovation of proposed effort?
- How does the proposed work compare with other efforts in its field, both in terms of scientific and/or technical merit and originality?
- How might the results of the proposed work impact the direction, progress, and thinking in relevant scientific fields of research?
- What is the likelihood of achieving influential results?

#### APPROPRIATENESS OF THE PROPOSED METHOD OR APPROACH

- Does the proposed effort employ innovative concepts or methods?
- How logical and feasible are the approaches?
- Are the conceptual framework, methods, and analyses well justified, adequately developed, and likely to lead to scientifically valid conclusions?
- Does the applicant recognize significant potential problems and consider alternative strategies?

#### COMPETENCY OF APPLICANT'S PERSONNEL AND ADEQUACY OF PROPOSED RESOURCES

- Does the proposed work take advantage of unique facilities and capabilities?
- What is the past performance of the team?
- How well qualified is the team to carry out the proposed work?
- Are the environment and facilities adequate for performing the proposed effort?

#### REASONABLENESS AND APPROPRIATENESS OF THE PROPOSED BUDGET

- Are the proposed budget and staffing levels adequate to carry out the proposed work?
- Is the budget reasonable and appropriate for the scope?

## **B. REVIEW AND SELECTION PROCESS**

### **1. Merit Review**

Applications that pass the initial review will be subjected to a formal merit review and will be evaluated based on the criteria codified at 10 CFR 605.10(d) in accordance with the guidance provided in the "Office of Science Merit Review System for Financial Assistance," which is available at: <http://www.sc.doe.gov/grants/merit.asp>.

## **2. Selection**

The Selection Officials will consider the following items, listed in no order of significance:

- Scientific and technical merit of the proposed activity as determined by merit review
- Availability of funds
- Relevance of the proposed activity to Office of Science and NIFA priorities
- Ensuring an appropriate balance of activities within Office of Science and NIFA programs
- Previous performance

## **3. Discussions and Award**

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to the following: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR 600 and 10 CFR 605; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

## **C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES**

It is anticipated that the award selection will be completed by within six months. It is expected that awards will be made in Fiscal Year 2014.

## **Section VI - AWARD ADMINISTRATION INFORMATION**

### **A. AWARD NOTICES**

#### **1. Notice of Selection**

**Selected Applicants Notification:** DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Part IV.G with respect to the allowability of pre-award costs.) Those applications selected for funding by USDA will be notified and will be requested to submit additional information.

**Non-selected Notification:** Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

#### **2. Notice of Award**

**DOE:** An Assistance Agreement issued by the contracting officer is the authorizing award document. It normally includes, either as an attachment or by reference, the following items: (1) Special Terms and Conditions; (2) Applicable program regulations, if any; (3) Application as approved by DOE; (4) DOE assistance regulations at 10 CFR 600, or, for Federal Demonstration Partnership (FDP) institutions, the FDP terms and conditions; (5) National Policy Assurances To Be Incorporated As Award Terms; (6) Budget Summary; and (7) Federal Assistance Reporting Checklist, which identifies the reporting requirements.

For grants made to universities, non-profits and other entities subject to OMB Circular A- 110 the Award also includes the Research Terms and Conditions located at <http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp>.

**USDA:** Once NIFA conducts peer panel and internal administrative reviews, successful applicants will receive a signed, electronic notification of their award. The award document will provide pertinent instructions and information including, at a minimum, the following:

1. Legal name and address of performing organization or institution to whom the Director has issued an award under the terms of this request for applications;
2. Title of project;
3. Name(s) and institution(s) of PDs chosen to direct and control approved activities;
4. Identifying award number assigned by the Department;
5. Project period, specifying the amount of time the Department intends to support the project without requiring recompetition for funds;
6. Total amount of Departmental financial assistance approved by the Director during the project period;
7. Legal authority(ies) under which the award is issued;
8. Appropriate Catalog of Federal Domestic Assistance (CFDA) number;
9. Applicable award terms and conditions (see <http://www.nifa.usda.gov/business/awards/awardterms.html> to view NIFA award terms and conditions);

10. Approved budget plan for categorizing allocable project funds to accomplish the stated purpose of the award; and
11. Other information or provisions deemed necessary by NIFA to carry out its respective awarding activities or to accomplish the purpose of a particular award.

## **B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS**

### **1. Administrative Requirements**

**DOE:** The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR 600 and 10 CFR 605. Grants and cooperative agreements made to universities, non-profits and other entities subject to 2 CFR 215 are subject to the Research Terms and Conditions located on the National Science Foundation web site at <http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp> .

#### **REGISTRATION REQUIREMENTS**

Additional administrative requirements for DOE grants and cooperative agreements are contained in 2 CFR 25 (See: <http://www.ecfr.gov>). Prime awardees must keep their data at the System for Award Management (SAM) current at <http://www.sam.gov>. SAM is the government-wide system that replaced the Central Contractor Registry (CCR). If you had an active registration in the CCR, you have an active registration in SAM. Subawardees at all tiers must obtain DUNS numbers and provide the DUNS to the prime awardee before the subaward can be issued.

#### **SUBAWARD AND EXECUTIVE REPORTING**

Additional administrative requirements necessary for DOE grants and cooperative agreements to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR 170. (See: <http://www.ecfr.gov> ). Prime awardees must register with the new FSRS database and report the required data on their first tier subawardees. Prime awardees must report the executive compensation for their own executives as part of their registration profile in the System for Award Management (SAM).

#### **PROHIBITION ON LOBBYING ACTIVITY**

By accepting funds under this award, you agree that none of the funds obligated on the award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 USC 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

**USDA:** Several Federal statutes and regulations apply to grant applications considered for review and to project grants awarded under this program. These include, but are not limited to:

- 2 CFR 220 – Cost Principles for Educational Institutions (OMB Circular A-21).
- 2 CFR 225 – Cost Principles for State, Local, and Indian Tribal Governments (OMB Circular A-87).
- 2 CFR 230– Cost Principles for Non-profit Organizations (OMB Circular A-122).
- 7 CFR 1, subpart A—USDA implementation of the Freedom of Information Act.
- 7 CFR 3—USDA implementation of OMB Circular A-129 regarding debt collection.
- 7 CFR 15, subpart A—USDA implementation of Title VI of the Civil Rights Act of 1964, as amended.
- 7 CFR 331 and 9 CFR 121—USDA implementation of the Agricultural Bioterrorism Protection Act of 2002.
- 7 CFR 3015—USDA Uniform Federal Assistance Regulations, implementing OMB directives (i.e., OMB Circulars A-21, A-87, and A-122, now codified at 2 CFR 220, 225 and 230), and incorporating provisions of 31 USC 6301-6308 (formerly the Federal Grant and Cooperative Agreement Act of 1977, Pub. L. 95-224)), as well as general policy requirements applicable to recipients of Departmental financial assistance.
- 7 CFR 3016 – USDA Implementation of Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments.
- 7 CFR 3017—USDA implementation of Governmentwide Debarment and Suspension (Nonprocurement).
- 7 CFR 3018—USDA implementation of Restrictions on Lobbying. Imposes prohibitions and requirements for disclosure and certification related to lobbying on recipients of Federal contracts, grants, cooperative agreements, and loans.
- 7 CFR 3019—USDA implementation of OMB Circular A-110, Uniform Administrative Requirements for Grants and Other Agreements With Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations (2 CFR 215).
- 7 CFR 3021—USDA Implementation of Governmentwide Requirements for Drug-Free Workplace (Grants).
- 7 CFR 3022 —Research Institutions Conducting USDA-Funded Extramural Research; Research Misconduct.
- 7 CFR 3052—USDA implementation of OMB Circular A-133, Audits of States, Local Governments, and Nonprofit Organizations.
- 7 CFR 3407—USDA procedures to implement the National Environmental Policy Act of 1969, as amended.
- 7 CFR 3430—Competitive and Noncompetitive Non-formula Grant Programs--General Grant Administrative Provisions.
- 29 USC 794 (section 504, Rehabilitation Act of 1973) and 7 CFR 15b (USDA implementation of statute) —prohibiting discrimination based upon physical or mental handicap in Federally assisted programs.
- 35 USC 200 et seq. —Bayh Dole Act, controlling allocation of rights to inventions made by employees of small business firms and domestic nonprofit organizations, including universities, in Federally assisted programs (implementing regulations are contained in 37 CFR 401)

## **2. Terms and Conditions**

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> under Award Terms.

The standard DOE financial assistance intellectual property provisions applicable to various types of recipients are located at:  
<http://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards>

## **3. National Policy Assurances**

The National Policy Assurances To Be Incorporated As Award Terms are located at <http://www.nsf.gov/bfa/dias/policy/rtc/appc.pdf> and at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> under Award Terms.

## **4. Statement of Substantial Involvement**

Either a grant or cooperative agreement may be awarded under this FOA. If the award is a cooperative agreement, the DOE Contract Specialist and DOE Project Officer will negotiate a Statement of Substantial Involvement prior to award.

## **C. REPORTING**

**DOE:** Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. The checklist is available at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> under Award Forms.

**USDA** grantees are to submit initial project information and annual summary reports to NIFA's electronic, Web-based inventory system that facilitates both grantee submissions of project outcomes and public access to information on Federally-funded projects. The details of these reporting requirements are included in the award terms and conditions.

### **1. Annual Performance Report**

An Annual Performance Report must be submitted within 90 days after the completion of the first year of the project, and annually thereafter during the life of the grant. Generally, the Annual Performance Reports shall include a summary of the overall progress toward meeting project objectives, current problems or unusual developments, the next year's activities, progress assessing outcomes as part of the project Evaluation Plan, and any other information that is pertinent to the ongoing project or which may be specified in the terms and conditions of the award. Annual project reports must contain data to document the outputs and outcomes and will need to be collected by the grantee. A specific format for these reports will be provided on an annual basis by NIFA.

## 2. Final Performance Report

A Final Performance Report must be submitted within 90 days after the expiration date of the project. The expiration date is specified in the award documents and modifications thereto, if any. Generally, the Final Performance Report shall be a summary of the completed project, to include results of the project Evaluation Plan (Part I. C. 3.), a review of project objectives and accomplishments; a description of any products and outcomes resulting from the project; activities undertaken to disseminate products and outcomes; partnerships and collaborative ventures that resulted from the project; future initiatives that are planned as a result of the project; the impact of the project on the Project Director(s), students, the departments, the institution, and the food, agricultural and human sciences higher education system; and data on project personnel and beneficiaries. The report must document how project accomplishments (products, results and impacts, etc.) have been published or otherwise disseminated to the broadest extent throughout the academic community. The Final Performance Report should be accompanied by samples or copies of any products or publications resulting from or developed by the project. The Final Performance Report also must contain any other information which may be specified in the terms and conditions of the award. A specific format for the final report will be provided by NIFA.

## 3. Federal Financial Report

For informational purposes, the “Federal Financial Report,” Form SF-425, consolidates into a single report the former Financial Status Report (SF-269 and SF-269A) and the Federal Cash Transactions Report (SF-272 and SF-272A). The NIFA Agency-specific Terms and Conditions include the requirement that Form SF-425 is due on an annual basis no later than 90 days following the award’s anniversary date (i.e., one year following the month and day of which the project period begins and each year thereafter up until a final report is required). A final “Federal Financial Report,” Form SF-425, is due 90 days after the expiration date of this award.

## 4. Project Directors Conference

During the tenure of a grant, Project Director(s) may be invited to attend at least one national Project Directors meeting, if offered, in Washington, DC, or any other announced location. The purpose of the meeting will be to discuss project and grant management, opportunities for collaborative efforts, future directions for education reform, and opportunities to enhance dissemination of exemplary end products/results. Reasonable travel expenses to attend this meeting may be included in the proposal’s travel expenses.

## **Section VII - QUESTIONS/AGENCY CONTACTS**

### **A. QUESTIONS**

Questions relating to the grants.gov registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or [support@grants.gov](mailto:support@grants.gov). DOE cannot answer these questions.

Please only contact the grants.gov help desk for questions related to grants.gov.

For help with PAMS, click the “External User Guide” link on the PAMS website, <https://pamspublic.science.energy.gov/>. You may also contact the PAMS Help Desk, which can be reached Monday through Friday, 9AM – 5:30 PM Eastern Time. Telephone: (855) 818-1846 (toll free) or (301) 903-9610, Email: [sc.pams-helpdesk@science.doe.gov](mailto:sc.pams-helpdesk@science.doe.gov). All submission and inquiries about this Funding Opportunity Announcement should reference **DE-FOA-0001034**.

Please contact the PAMS help desk for technological issues with the PAMS system.

Questions regarding the specific program areas and technical requirements may be directed to the technical contacts listed for each program within the FOA or below.

Please contact the program staff with all questions not directly related to the grants.gov or PAMS systems.

### **B. AGENCY CONTACTS**

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Grants.gov<br>Customer Support        | 800-518-4726 (toll-free)<br><a href="mailto:support@grants.gov">support@grants.gov</a>                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| PAMS<br>Customer Support              | 855-818-1846 (toll-free)<br>301-903-9610<br><a href="mailto:sc.pams-helpdesk@science.doe.gov">sc.pams-helpdesk@science.doe.gov</a>                                                                                                                                                                                                                                                                                                                                                                                             |
| Program Manager<br>Scientific Contact | <b>Program Manager:</b> Dr. Catherine M. Ronning<br>U. S. Department of Energy<br>Office of Biological and Environmental Research<br><b>Phone:</b> 301-903-9549<br><b>E-Mail:</b> <a href="mailto:Catherine.ronning@science.doe.gov">Catherine.ronning@science.doe.gov</a><br><br><b>Program Manager:</b> Dr. Ed Kaleikau<br>U.S. Department of Agriculture<br>National Institute of Food and Agriculture<br><b>Phone:</b> 202-401-1931<br><b>E-Mail:</b> <a href="mailto:ekaleikau@nifa.usda.gov">ekaleikau@nifa.usda.gov</a> |

## **Section VIII - OTHER INFORMATION**

### **A. MODIFICATIONS**

Notices of any modifications to this FOA will be posted on Grants.gov and the FedConnect portal. You can receive an email when a modification or an FOA message is posted by registering with FedConnect as an interested party for this FOA. It is recommended that you register as soon after release of the FOA as possible to ensure you receive timely notice of any modifications or other FOAs. More information is available at <http://www.fedconnect.net>.

### **B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE**

DOE reserves the right, without qualification, to reject any or all applications received in response to this FOA and to select any application, in whole or in part, as a basis for negotiation and/or award.

### **C. COMMITMENT OF PUBLIC FUNDS**

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

### **D. PROPRIETARY APPLICATION INFORMATION**

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

“The data contained in pages \_\_\_\_\_ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government’s right to use or disclose data obtained without restriction from any source, including the applicant.”

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

“The following contains proprietary information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation.”

## **E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL**

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

## **F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM**

**Patent Rights:** The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 USC 5908 provides that title to such inventions vests in the United States, except where 35 USC 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See “Notice of Right to Request Patent Waiver” in paragraph G below.)

**Rights in Technical Data:** Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE’s own needs or to insure the commercialization of technology developed under a DOE agreement.

**USDA:** 35 USC 200 et seq. —Bayh Dole Act, controlling allocation of rights to inventions made by employees of small business firms and domestic nonprofit organizations, including universities, in Federally assisted programs (implementing regulations are contained in 37 CFR 401).

## **G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER**

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this FOA, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784. For more information, see <http://energy.gov/gc/patents-licensing-and-patent-waivers>.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

## **H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES**

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

## **I. AVAILABILITY OF FUNDS**

Funds are not presently available for this award. The Government's obligation under this award is contingent upon the availability of appropriated funds from which payment for award purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the Contracting Officer for this award and until the awardee receives notice of such availability, to be confirmed in writing by the Contracting Officer.

## **Section IX - APPENDICES/REFERENCE MATERIAL**

### **Glossary of Useful Grants and Cooperative Agreement terms**

|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| <b>acquisition cost</b>                               | The cost of an asset, including the cost to put it in place. When used with equipment (capital expenditure), the term means the net invoice price of property or supplies including cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the property usable for the purpose for which it was acquired. Other charges, such as the cost of installation, transportation, taxes, duty, or protective in-transit insurance, are included or excluded from the unit acquisition cost in accordance with the recipient's regular accounting practices. It does not include costs for rental of property or alteration and rental of real property.                                                                                                            |
| <b>administrative requirements</b>                    | The general business management practices that are common to the administration of all grants, such as financial accountability, reporting, equipment management, and retention of records.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>allocation</b>                                     | The process of assigning costs to one or more cost objectives, in reasonable and realistic proportion to the benefit provided or other equitable relationship.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>allocability</b>                                   | The principle which requires that an expense or service charged must directly benefit and be necessary for the performance of the project; when multiple projects are benefited reasonable proportions must be able to be assigned.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>allowable cost</b>                                 | A cost incurred by a recipient that is: (1) reasonable for the performance of the award; (2) allocable; (3) in conformance with any limitations or exclusions set forth in the Federal cost principles applicable to the organization incurring the cost or in the Notice of Financial Assistance Agreement Award as to the type or amount of cost; (4) consistent with regulations, policies, and procedures of the recipient that are applied uniformly to both federally supported and other activities of the organization; (5) accorded consistent treatment as a direct or indirect cost; (6) determined in accordance with generally accepted accounting principles; and (7) not included as a cost in any other federally supported award (unless specifically authorized by statute). |
| <b>application</b>                                    | A request for financial support of a project or activity submitted to DOE on specified forms and in accordance with DOE instructions. Also known as a proposal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Appropriation Act</b>                              | The statute that provides the authority for Federal agencies to incur obligations to and make payments out of the U.S. treasury for specified purposes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>approved budget</b>                                | The financial expenditure plan for the grant-supported project or activity, including revisions approved by DOE and permissible revisions made by the grantee. The approved budget consists of Federal (grant) funds and, if required by the terms and conditions of the award, non-Federal participation in the form of matching or cost sharing. The approved budget specified in the Notice of Financial Assistance Agreement may be shown in detailed budget categories or as total costs without a categorical breakout. Expenditures charged to an approved budget that consists of both Federal and non-Federal shares are deemed to be borne by the grantee in the same proportion as the percentage of Federal/non-Federal participation in the overall budget.                       |
| <b>assurance</b>                                      | A certification by an applicant, normally included with the application or State plan, indicating that the entity is in compliance with, or that it will abide by, a particular requirement if awarded a Federal grant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>authorized organizational representative award</b> | The individual, named by the applicant organization, who is authorized to act for the applicant and to assume the obligations imposed by the Federal laws, regulations, requirements, and conditions that apply to grant applications or grant awards. The provision of funds by DOE, based on an approved application and budget or progress report, to an organizational entity or an individual to carry out a project or activity.                                                                                                                                                                                                                                                                                                                                                         |
| <b>Bayh-Dole Act</b>                                  | Law which encourages universities and researchers to develop their inventions into marketable products; formal citation is Section 6 of the Patent and Trademark                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|                                                | Amendment of 1980, Pub. L. 96-517                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>budget</b>                                  | An estimate of expenditures to be incurred in the performance of a proposed statement of work, or the financial plan or cost assessment for the grant proposal or contract. The budget represents costs associated with project implementation.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>budget period</b>                           | The intervals of time (usually 12 months each) into which a project period is divided for budgetary and funding purposes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>business officer</b>                        | The financial official of the grantee who has primary fiscal responsibility for the grant. Also known as authorized organizational representative.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>carryover</b>                               | Unobligated Federal funds remaining at the end of any budget period that, with the approval of the Contracting Officer or under an automatic authority, may be carried forward to another budget period to cover allowable costs of that budget period (whether as an offset or additional authorization). Obligated, but unliquidated, funds are not considered carryover.                                                                                                                                                                                                                                                                                                          |
| <b>change in scope</b>                         | An activity whereby the objectives or specific aims identified in the approved grant application are significantly changed by the grantee after award. Contracting Officer prior approval is required for a change in scope to be allowable under an award.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>closeout</b>                                | The process by which a Federal awarding agency determines that all applicable administrative actions and all required work under an award have been completed by the grantee and the Federal awarding agency.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>competitive segment</b>                     | The initial project period recommended for support (up to 5 years) or each extension of a project period resulting from a renewal award.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>conference (domestic or international)</b>  | A symposium, seminar, workshop, or any other organized and formal meeting, whether conducted face-to-face or via the Internet, where individuals assemble (or meet virtually) to exchange information and views or explore or clarify a defined subject, problem, or area of knowledge, whether or not a published report results from such meeting.                                                                                                                                                                                                                                                                                                                                 |
| <b>consortium or subaward agreement</b>        | A formalized agreement whereby a research project is carried out by the grantee and one or more other organizations that are separate legal entities. Under the agreement, the grantee must perform a substantive role in the conduct of the planned research and not merely serve as a conduit of funds to another party or parties. These agreements typically involve a specific level of effort from the consortium organization's PD/PI and a categorical breakdown of costs, such as personnel, supplies, and other allowable expenses, including F&A costs. The relationship between the recipient and the collaborating organizations is considered a subaward relationship. |
| <b>consultant</b>                              | An individual who provides professional advice or services for a fee, but normally not as an employee of the engaging party. In unusual situations, an individual may be both a consultant and an employee of the same party, receiving compensation for some services as a consultant and for other work as a salaried employee. To prevent apparent or actual conflicts of interest, grantees and consultants must establish written guidelines indicating the conditions of payment of consulting fees. Consultants also include firms that provide professional advice or services.                                                                                              |
| <b>continuation application/award</b>          | A financial assistance request (in the form of an application or progress report) or resulting award for a subsequent budget period within a previously approved project period for which a recipient does not have to compete with other applicants.                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>contract</b>                                | An award instrument used to acquire from a non-federal party, by purchase, lease, or barter, property or services for the direct benefit or use of the Federal government. The same term may be used to describe a vendor relationship between a recipient and another party under a grant (to acquire routine goods and services); however, the recipient may use subaward to describe the contract under a grant relationship.                                                                                                                                                                                                                                                     |
| <b>Contract (or Grants Management) Officer</b> | A DOE official responsible for the business management aspects of grants and cooperative agreements, including review, negotiation, award, and administration, and for the interpretation of grants administration policies and provisions. COs and GMOs are delegated the authority to obligate DOE to the expenditure of funds and permit changes to approved projects on behalf of DOE.                                                                                                                                                                                                                                                                                           |
| <b>Contract (or Grants</b>                     | A DOE staff member who works with a contract or grants management officer and is                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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| <b>Management) Specialist</b>   | assigned the day-to-day management of a portfolio of grants and/or cooperative agreements. These activities include, but are not limited to, evaluating grant applications for administrative content and compliance with statutes, regulations, and guidelines; negotiating grants; providing consultation and technical assistance to grantees; and administering grants after award.                                                                                                                                                                                                            |
| <b>cooperative agreement</b>    | A type of financial assistance used when there will be substantial Federal scientific or programmatic involvement. Substantial involvement means that, after award, scientific or program staff will assist, guide, coordinate, or participate in project activities.                                                                                                                                                                                                                                                                                                                              |
| <b>cost principles</b>          | The government-wide principles, issued by OMB (or, in the case of commercial organizations, the Federal Acquisition Regulation [48 CFR 21], or, in the case of hospitals, 45 CFR 74, Appendix E, “Principles For Determining Costs Applicable to Research and Development Under Grants and Contracts with Hospitals”), on allowability and unallowability of costs under federally sponsored agreements.                                                                                                                                                                                           |
| <b>cost sharing</b>             | The portion of the costs of a project or program not borne by the sponsor; these could be grantee contributions or third-party in-kind contributions; costs used to satisfy cost sharing requirements are subject to the same policies governing allowability as other costs of the project. Research grants are generally not subject to cost sharing requirements. Also known as matching.                                                                                                                                                                                                       |
| <b>deadline</b>                 | The published date and/or time that a grant application is to be either postmarked/mailed or electronically submitted to the funding agency.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>debarment and suspension</b> | The actions taken by a debarring official in accordance with OMB guidance at 2 CFR 180, “Non-procurement Debarment and Suspension,” to exclude a person or organization from participating in grants and other non-procurement awards government-wide. If debarred or suspended, the person or organization may not receive financial assistance (under a grant, cooperative agreement, or subaward, or contract under a grant) for a specified period of time. Debarments and suspensions carried out pursuant to 2 CFR 376 are distinct from post-award suspension action by an awarding agency. |
| <b>direct costs</b>             | Costs that can be identified specifically with a particular sponsored project, an instructional activity, or any other institutional activity, or that can be directly assigned to such activities relatively easily with a high degree of accuracy.                                                                                                                                                                                                                                                                                                                                               |
| <b>disallowance</b>             | A charge to a grant that the Federal awarding agency determines to be unallowable in accordance with the applicable Federal cost principles or other terms and conditions contained in the award.                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>domestic organization</b>    | A public (including a State or other governmental agency) or private non-profit or for-profit organization that is located in the United States or its territories, is subject to U.S. laws, and assumes legal and financial accountability for awarded funds and for the performance of the grant-supported activities.                                                                                                                                                                                                                                                                           |
| <b>DUNS number</b>              | A nine-digit number established and assigned by Dun and Bradstreet to uniquely identify a business entity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>effort</b>                   | The amount of time, usually expressed as a percentage of the total, which a faculty member or other employee spends on a sponsored project. No one is allowed to spend more than 100% total commitment on all academic activities, including grant-sponsored research, university-sponsored research, teaching, administration, advising and other contracted duties. Effort is indicated on the budget in units of person-months.                                                                                                                                                                 |
| <b>equipment</b>                | An article of tangible nonexpendable personal property that has a useful life of more than 1 year and an acquisition cost per unit that equals or exceeds \$5,000 or the capitalization threshold established by the organization, whichever is less.                                                                                                                                                                                                                                                                                                                                              |
| <b>expanded authorities</b>     | Authorization to grantees under certain research grant mechanisms which waives the requirement for prior agency approval for specified actions related to awards. Example: 90-day preaward spending authority, no cost extensions for up to one additional year, and automatic carryover of unobligated funds from one budget period to the next. The expanded authorities are now contained in the standard terms and conditions for most research grants.                                                                                                                                        |
| <b>expiration date</b>          | Generally, the date signifying the end of the current project period, after which the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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| <b>facilities and administrative costs</b>    | grantee is not authorized to obligate grant funds.<br>Costs that are incurred by a grantee for common or joint objectives and that, therefore, cannot be identified specifically with a particular project or program. These costs also are known as indirect costs.                                                                                                                                                                                                                                                                                           |
| <b>Federal Financial Report</b>               | Submitted on Standard Form (SF) 425, to indicate the status of awarded funds for the period covered. Frequency of reporting is specified in the Reporting Checklist provided as part of the Notice of Financial Assistance Agreement. Replaces the SF-269 Financial Status Report (FSR)                                                                                                                                                                                                                                                                        |
| <b>financial assistance</b>                   | Transfer by DOE of money or property to an eligible entity to support or stimulate a public purpose authorized by statute.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Financial Status Report foreign travel</b> | See Federal Financial Report.<br>Foreign travel includes travel outside of the United States and its territories and possessions (Guam, American Samoa, Puerto Rico, the Virgin Islands, and the Canal Zone) and Canada. A trip is considered foreign travel for all legs of the itinerary if the traveler does not return to his or her post prior to departure for a foreign destination. Costs for foreign travel may be restricted by the language of a Funding Opportunity Announcement.                                                                  |
| <b>funding opportunity announcement</b>       | A publicly available document by which a Federal Agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds. Funding opportunity announcements may be known as program announcements, requests for applications, notices of funding availability, solicitations, or other names depending on the Agency and type of program. Funding opportunity announcements can be found at <a href="http://Grants.gov/FIND">Grants.gov/FIND</a> . An FOA may also be known as a solicitation. |
| <b>grant</b>                                  | A financial assistance mechanism providing money, property, or both to an eligible entity to carry out an approved project or activity. A grant is used whenever DOE anticipates no substantial programmatic involvement with the recipient during performance of the financially assisted activities.                                                                                                                                                                                                                                                         |
| <b>grant-supported project or activity</b>    | Those activities specified or described in a grant application or in a subsequent submission that are approved by DOE for funding, regardless of whether Federal funding constitutes all or only a portion of the financial support necessary to carry them out.                                                                                                                                                                                                                                                                                               |
| <b>grantee</b>                                | The organization or individual awarded a grant or cooperative agreement by DOE that is responsible and accountable for the use of the funds provided and for the performance of the grant-supported project or activity. The grantee is the entire legal entity even if a particular component is designated in Notice of Financial Assistance Agreement. The grantee is legally responsible and accountable to DOE for the performance and financial aspects of the grant-supported project or activity. Also known as awardee or recipient.                  |
| <b>Grants.gov</b>                             | Grants.gov ( <a href="http://www.grants.gov/">http://www.grants.gov/</a> ) has been designated by the Office of Management and Budget as the single access point for all grant programs offered by 26 Federal grant-making agencies. It provides a single interface for agencies to announce their grant opportunities and for all applicants to find and apply for those opportunities.                                                                                                                                                                       |
| <b>indirect costs</b>                         | See facilities and administrative costs definition.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>institutional base salary</b>              | The annual compensation paid by an organization for an employee's appointment, whether that individual's time is spent on research, teaching, patient care, or other activities. Base salary excludes any income that an individual may be permitted to earn outside of duties for the applicant/grantee organization. Base salary may not be increased as a result of replacing organizational salary funds with grant funds.                                                                                                                                 |
| <b>matching or cost sharing</b>               | The value of third-party in-kind contributions and the portion of the costs of a federally assisted project or program not borne by the Federal government. Matching or cost sharing may be required by statute or program regulation. Costs used to satisfy matching or cost-sharing requirements are subject to the same policies governing allowability as other costs under the approved budget.                                                                                                                                                           |
| <b>merit (or peer) review</b>                 | The process that involves the consistent application of standards and procedures that produce fair, equitable, and objective examinations of applications based on an                                                                                                                                                                                                                                                                                                                                                                                          |

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|                                             | evaluation of scientific or technical merit or other relevant aspects of the application. The review is performed by experts (reviewers) in the field of endeavor for which support is requested. Merit review is intended to provide guidance and to the DOE individuals responsible for making award decisions.                                                                                                                                                                                                                                                                                                                                                                 |
| <b>monitoring</b>                           | A process whereby the programmatic and business management performance aspects of a grant are assessed by reviewing information gathered from various required reports, audits, site visits, and other sources.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>no-cost extension</b>                    | An extension of time to a project period and/or budget period to complete the work of the grant under that period, without additional Federal funds or competition.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>non-Federal share</b>                    | When cost sharing or matching is required as a condition of an award, the portion of allowable project/program costs not borne by the Federal government.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Notice of Financial Assistance Award</b> | The official, legally binding document, signed (or the electronic equivalent of signature) by a Contracting Officer that:<br>notifies the recipient of the award of a grant;<br>contains or references all the terms and conditions of the grant and Federal funding limits and obligations; and,<br>provides the documentary basis for recording the obligation of Federal funds in the DOE accounting system.<br>Also commonly referred to as an Assistance Agreement.                                                                                                                                                                                                          |
| <b>obligations</b>                          | The amounts for which the recipient has made binding commitments for orders placed for property and services, contracts and subawards, and similar transactions during a funding period that will require payment during the same or a future period.                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>OMB Circulars</b>                        | Government-wide guidance issued to Heads of Federal agencies by the Director of OMB. OMB Circulars directly pertinent to grants include the following: <ul style="list-style-type: none"> <li>• cost principles (OMB Circular A-21, OMB Circular A-87, and OMB Circular A-122);</li> <li>• uniform administrative requirements (OMB Circular A-102 and OMB Circular A-110);</li> <li>• audit requirements for non-profit organizations (OMB Circular A-133).</li> </ul> Some (but not all) of these OMB Circulars have been reissued in Title 2 of the Code of Federal Regulations.<br>DOE administrative regulations are located in Title 10 of the Code of Federal Regulations. |
| <b>Other Significant Contributors</b>       | Individuals who have committed to contribute to the scientific development or execution of the project, but are not committing any specified measurable effort (i.e., person months) to the project. These individuals are typically presented at “effort of zero person months” or “as needed.” Individuals with measurable effort may not be listed as Other Significant Contributors (OSCs). Consultants should be included if they meet this definition.                                                                                                                                                                                                                      |
| <b>participant</b>                          | Program participants are the recipients of service or training provided at a workshop, conference, seminar, symposium or other short-term instructional or information-sharing activity funded by an external grant or award, or the training beneficiaries of the project or program funded by an external grant or award. A participant is not involved in providing any deliverable to the grantee or a third party or would not be terminated or replaced for failure to perform.                                                                                                                                                                                             |
| <b>participant costs</b>                    | Costs used to pay program participants small stipends and reimbursement of travel costs or other out-of-pocket costs incurred to support attendance at a workshop, conference, seminar, symposium, or other short-term training or information-sharing activity.                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>person months</b>                        | The metric for expressing the effort (amount of time) PD/PI(s), faculty and other senior/key personnel devote to a specific project. The effort is based on the type of appointment of the individual with the organization; e.g., calendar year, academic year, and/or summer term; and the organization’s definition of such. For instance, some institutions define the academic year as a 9-month appointment while others define it as a 10-month appointment.                                                                                                                                                                                                               |
| <b>pre-application or pre-</b>              | A brief outline or narrative of proposed work and sometimes budget, for informal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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| <b>proposal</b>                                     | <p>review by a sponsor to determine whether a full proposal should be submitted. Three predominant reasons for requiring submission of a preliminary proposal are:</p> <ul style="list-style-type: none"> <li>• Reduce the proposers' unnecessary effort in proposal preparation when the chance of success is very small. This is particularly true of exploratory initiatives where the community senses that a major new direction is being identified, or competitions that will result in a small number of actual awards.</li> <li>• Increase the overall quality of the full submission.</li> <li>• Distill the number of applications that will be submitted to the agency and the number of anticipated reviewers needed to review.</li> </ul>                                                                                      |
| <b>pre-award costs</b>                              | Any cost incurred prior to the beginning date of the project period or the initial budget period of a competitive segment (under a multi-year award), in anticipation of the award and at the applicant's own risk, for otherwise allowable costs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>prior approval</b>                               | Written approval from the designated Contracting Officer required for specified post-award changes in the approved project or budget. Such approval must be obtained before undertaking the proposed activity or spending DOE funds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Program Director/<br/>Principal Investigator</b> | The individual(s) designated by the applicant organization to have the appropriate level of authority and responsibility to direct the project or program to be supported by the award. The applicant organization may designate multiple individuals as program directors/principal investigators (PD/PIs) who share the authority and responsibility for leading and directing the project, intellectually and logistically. When multiple PD/PIs are named, each is responsible and accountable to the applicant organization, or as appropriate, to a collaborating organization for the proper conduct of the project or program including the submission of all required reports. The presence of more than one PD/PI on an application or award diminishes neither the responsibility nor the accountability of any individual PD/PI. |
| <b>program income</b>                               | Program income is gross income earned by a research grant recipient from the activities, part or all of which are borne as a direct cost by the grant. Examples are fees for services performed under the grant, rental or usage fees charged for use of equipment purchased with grant funds, third party patient reimbursements for hospital or medical services paid from the grant, funds generated by the sale of commodities, such as cell lines or research animals developed from or paid for from the grant, and patent or copyright royalties.                                                                                                                                                                                                                                                                                     |
| <b>Program Manager</b>                              | The DOE official responsible for the programmatic, scientific, and/or technical aspects of a grant. The same role is filled by Program Directors, Program Officers, or Project Directors at other Federal agencies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>progress report</b>                              | Periodic, frequently annual, report submitted by the grantee and used by DOE to assess progress and to determine whether to provide funding for the budget period subsequent to that covered by the report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>project/performance<br/>site</b>                 | Location(s) of where the work described in the research plan will be conducted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>project period</b>                               | The total time for which Federal support of a project has been programmatically approved as shown in the Notice of Financial Assistance Agreement; however, it does not constitute a commitment by the Federal government to fund the entire period. The total project period comprises the initial competitive segment, any subsequent competitive segments resulting from a renewal award(s), and extensions.                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>proposal<br/>re-budgeting</b>                    | See application.<br>Reallocation of funds available for spending between budget categories to allow best use of funds to accomplish the project goals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>recipient<br/>renewal application</b>            | The organizational entity or individual receiving a grant or cooperative agreement.<br>An application requesting additional funding for a period subsequent to that provided by a current award. Renewal applications compete for funds with all other peer reviewed applications and must be developed as fully as though the applicant is applying for the first time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>research</b>                                     | A systematic, intensive study intended to increase knowledge or understanding of the subject studied, a systematic study specifically directed toward applying new                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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|                                      | knowledge to meet a recognized need, or a systematic application of knowledge to the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements. Also termed “research and development.”                                                                                                                                                                                                                                                                                                                                                             |
| <b>research misconduct</b>           | Fabrication, falsification, plagiarism, or other practices that seriously deviate from those that are commonly accepted within the scientific community in proposing, performing, or reporting research, or in reporting research results; does not include honest error or honest differences in interpretations or judgments of data.                                                                                                                                                                                                                                                                                                                                 |
| <b>SAM.gov</b>                       | The System for Award Management (SAM) is the Government-wide system that consolidated the Central Contractor Registration (CCR), the Excluded Parties List System (EPLS), the Online Representations and Certifications Application (ORCA), and the Federal Agency Registration (FedReg).                                                                                                                                                                                                                                                                                                                                                                               |
| <b>scope of work</b>                 | The aims, objectives, and purposes of a grant; as well as the methodology, approach, analyses or other activities; and the tools, technologies, and timeframes needed to meet the grant’s objectives. This includes the research or training plan included with the original grant application, along with any approved modifications.                                                                                                                                                                                                                                                                                                                                  |
| <b>Senior/Key Personnel</b>          | The PD/PI and other individuals who contribute to the scientific development or execution of a project in a substantive, measurable way, whether or not they receive salaries or compensation under the grant. Typically these individuals have doctoral or other professional degrees, although individuals at the masters or baccalaureate level may be considered senior/key personnel if their involvement meets this definition. Consultants and those with a postdoctoral role also may be considered senior/key personnel if they meet this definition. “Zero percent” effort or “as needed” is not an acceptable level of involvement for Senior/Key Personnel. |
| <b>significant rebudgeting</b>       | A threshold that is reached when expenditures in a single direct cost budget category deviate (increase or decrease) from the categorical commitment level established for the budget period by more than 25 percent of the total costs awarded. Significant rebudgeting is one indicator of change in scope.                                                                                                                                                                                                                                                                                                                                                           |
| <b>small business concern</b>        | A business that is independently owned and operated and not dominant in its field of operation; has its principal place of business in the United States and is organized for profit; is at least 51 percent owned, or in the case of a publicly owned business, at least 51 percent of its voting stock is owned by U.S. citizens or lawfully admitted permanent resident aliens; has, including its affiliates, not more than 500 employees; and meets other regulatory requirements established by the SBA at 13 CFR 121.                                                                                                                                            |
| <b>solicitation subaward</b>         | See Funding Opportunity Announcement<br>A legal instrument by which a recipient provides funds (or property in lieu of funds) to an eligible subrecipient (or a lower-tier transaction) to perform a substantive portion of the grant-supported program or project. The term includes such financial assistance when provided by any legal agreement (even if the agreement is called a contract) but does not include any form of assistance which is excluded from the definition of a grant, including the recipient’s procurement of property or services needed to carry out the project or program. The term includes consortium agreements.                      |
| <b>subrecipient</b>                  | A party that receives a subaward from a recipient or another subrecipient under a Federal financial assistance award and is accountable to the recipient or subrecipient for the use of the Federal funds provided by the subaward.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>supplement</b>                    | A request for an increase in support during a current budget period for expansion of the project’s scope or to meet increased costs unforeseen at the time of the new or renewal application. A supplement may increase support for future years in addition to the current year. Supplements require applications and are subject to administrative and merit review.                                                                                                                                                                                                                                                                                                  |
| <b>terms and conditions of award</b> | All legal requirements imposed on a grant by DOE, whether based on statute, regulation, policy, or other document referenced in the grant award, or specified by the grant award document itself. The Notice of Financial Assistance Agreement may include both standard and special conditions that are considered necessary to attain the grant’s objectives, facilitate post-award administration of the grant, conserve grant                                                                                                                                                                                                                                       |

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| <b>unallowable costs</b>       | funds, or otherwise protect the Federal government's interests.<br>Specific categories of costs that cannot be charged, directly or indirectly, to federally sponsored agreements in accordance with federal regulations.                                                    |
| <b>unliquidated obligation</b> | For reports prepared on a cash basis, the amount of obligations incurred by the recipient that has not been paid; or<br>For reports prepared on an accrued expenditure basis, the amount of obligations incurred by the recipient for which an outlay has not been recorded. |
| <b>unobligated balance</b>     | The portion of the funds authorized by the Federal agency for expenditure by the recipient that has not been obligated by the recipient.                                                                                                                                     |