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-0000770

Announcement Type: Initial
CFDA Number: 81.049 & 10.310

Issue Date:	**November 20, 2012**
Pre-Application Due Date:	**December 18, 2012, 4:30 p.m. Eastern Time**
	(Pre-applications are Required)
Application Due Date:	**February 25, 2013, 11:59 p.m. Eastern Time**

REGISTRATIONS

Required Registrations

There are several one-time actions you must complete in order to submit an application in response to this Announcement (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the System for Award Management (SAM), and register with Grants.gov). Applicants who are not registered with SAM and Grants.gov, should allow **at least 44 days** to complete these requirements. It is suggested that the process be started 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.

Applicants must register with Grants.gov. There are 3 steps to this process.

1. The Authorized Organizational Representative (AOR) must register at:
   https://apply07.grants.gov/apply/OrcRegister
2. An email is sent to the E-Business (E-Biz) POC listed in SAM. The E-Biz POC must approve the AOR registration using their MPIN from their SAM registration.
3. AOR verifies that registration was completed at:
   http://grants.gov/applicants/applicant_profile.jsp.

More information about the above steps is provided at:
http://www.grants.gov/applicants/organization_registration.jsp.

Applicants must register with FedConnect at www.fedconnect.net. If an award is made, the full and binding version of the assistance agreement between your institution and DOE will be posted to FedConnect.

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

DOE Office of Science Portfolio Analysis and Management System (PAMS)

All Grants.gov submissions to the DOE Office of Science (SC) are automatically entered into the DOE SC Portfolio Analysis and Management System (PAMS) and will then be 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 00002xxxxx 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.

Once the email is sent, the PI, SRO/AO/BO, and POC will each be able to view the submitted proposal in PAMS. Viewing the proposal is an optional courtesy provided by SC to the submitting institution.

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 select "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 here. Use the PAMS number that was sent to you in the email with the subject line beginning, "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 that applies to you. If your name appears in block 19 of the SF424 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. Select "Save and Continue." You will be taken to your "My Proposals" page. The Grants.gov proposal will now appear in your list of proposals. Click "Actions/Views" and then select, from the dropdown, "Proposal" 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. On the website https://pamspublic.science.energy.gov/, click "Create New PAMS Account."
2. Click, "No, I have never had an account" and then click, "Create an Account."
3. Enter the required information. You will be asked to enter your name, create a user name and password, select a security question, and enter your email address. Click, "Save and Continue."
4. Enter your phone number and mailing address. Click, "Create Account."
5. You will be presented with a Notice to Users, a Privacy Notice, and the Rules of Behavior. If you agree to comply with the Rules of Behavior, click "Accept."*****
6. You will be taken to the Register to Institution page. Select "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 here. Use the PAMS number that was sent to you in the email with the subject line beginning, "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 that applies to you. If your name appears in block 19 of the SF424 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. Select "Save and Continue." You will be taken to your "My Proposals" page. The Grants.gov proposal will now appear in your list of proposals. Click "Actions/Views" and then select, from the dropdown, "Proposal" to see the proposal.

- Note: 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.

If you need help with PAMS, contact the PAMS Help Desk at 855-818-1846 (toll-free), 301-903-9610, or sc.pams-helpdesk@science.doe.gov. The PAMS Help Desk hours of operation are 9 AM to 5:30 PM Eastern Time, Monday through Friday. The PAMS help desk is closed on Federal holidays and weekends.

Questions

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**.

Application Preparation and Submission
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.)

Where to Submit
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.

IMPORTANT NOTICE TO POTENTIAL APPLICANTS: 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).

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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
Phone: 301-903-9549
E-Mail: Catherine.ronning@science.doe.gov

Program Manager: Dr. Ed Kaleikau
U.S. Department of Agriculture
National Institute of Food and Agriculture
Phone: 202-401-1931
E-Mail: ekaleikau@nifa.usda.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 (BER), 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 fundamental research on plants that will improve biomass characteristics, biomass yield, or sustainability. Systems biology approaches to identify genetic indicators enabling plants to be efficiently bred or manipulated, or research to predict phenotype from underlying genotype that could lead to improved feedstock characterization and sustainability are also encouraged.

SUPPLEMENTARY INFORMATION

Renewable energy from biomass 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 biomass production systems and bioconversion technologies that efficiently convert biomass energy 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 lignocellulosic materials for bioenergy and biofuels. In 2013, the program seeks to build upon gains in genetic and genomic resources for bioenergy and biofuels and will expand the focus to increase understanding of environmental influences on gene expression and resulting phenotype, specifically bioenergy-relevant traits such as biomass yield and nutrient/water utilization; to accelerate breeding of dedicated biomass feedstocks aimed at improving such traits; and to develop and use database and extension tools and resources for enhanced bioenergy crop research and training. In future years the program will consider expansion into other genomic resources for advanced biofuels (e.g., oilseeds) pending available funding.

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. Targeted crops include perennial grasses, sorghum, energy cane, and woody biomass. The long-term goal is to predict plant behavior under various conditions and use results to inform breeding programs. Specific areas include:
    1. Beneficial or mutualistic plant-microbe interactions (e.g., mycorrhizal associations);
    2. Adaptation to abiotic stresses (e.g., climate, moisture, nutrient availability), including but not limited to epigenetic regulation of plant response;
    3. 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 must detail plans to establish partnerships that maximize synergy and leverage with the DOE Systems Biology Knowledgebase (kbase.science.energy.gov). *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 knowledge of genome wide associations or other innovative approaches to identify desirable traits and accelerate trait integration. The goal is to implement a National strategy to deploy cultivars with enhanced biomass yield, resistance / tolerance to environmental stress, climate change adaptation, and improved response to lower inputs.
    1. Applications are expected to leverage recent advances in breeding and genomics, reduce duplication of efforts and coordinate activities among individuals, institutions, states, and regions. Targeted traits should aim to maximize biomass yield and minimize water usage

and nutrient inputs. Targeted crops include: perennial grasses; sorghum; energy cane; and woody biomass. Applications must include budgeted plans for research, extension, project management, and data and genetic resources management.

- Approaches are expected to include coordinated work in the following areas but not limited to: development and implementation of easy-to-use molecular markers for breeding; utilization of advanced genomic 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). 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
- 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:

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), indirect costs are 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 and USDA anticipate awarding grants under this Funding Opportunity Announcement (FOA).

B. ESTIMATED FUNDING

It is anticipated that up to $5 million total will be available for multiple awards to be made in FY 2013 contingent 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 RFA is being released prior to the passage of an Appropriations Act for FY 2013. Enactment of additional Continuing Resolutions or an Appropriations Act may affect the availability or level of funding for this program.

In FY 2013, USDA support for this Plant Feedstock Genomics for Bioenergy FOA is available through the Agriculture and Food Research Initiative (AFRI) Competitive Grants Program.

C. MAXIMUM AND MIMUM AWARD SIZE

See B. Estimated Funding section above.

D. EXPECTED NUMBER OF AWARDS

See B. Estimated Funding section above.

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 any established due date/deadline or at least six months before additional funding is required if there is no specified due date/deadline. 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.

H. RESPONSIBLE AND ETHICAL CONDUCT OF RESEARCH

The responsible and ethical conduct of research (RCR) is critical for excellence, as well as public trust, in science and engineering. Consequently, education in RCR is considered essential in the preparation of future scientists. In accordance with sections 2, 3, and 8 of 7 CFR 3022, institutions that conduct extramural research funded by USDA must foster an atmosphere conducive to research integrity, bear primary responsibility for prevention and detection of research misconduct and are to maintain and effectively communicate and train their staff regarding policies and procedures. In the event an application to NIFA results in an award, the AOR assures, through acceptance of the award that the institution will comply with the above requirements. Per award terms and conditions, grant recipients shall, upon request, make available to NIFA the policies and procedures as well as documentation to support the conduct of the training.

Note that the training referred to herein shall be either on-campus or the Collaborative Institutional Training Initiative (CITI) program for RCR (https://www.citiprogram.org/rcrpage.asp). The general content of the ethics training, at a minimum, will emphasize three key areas of research ethics: authorship and plagiarism, data and

research integration and reporting misconduct. Each institution will be responsible for developing its own training system, as schools will need flexibility to develop training tailored to their specific student needs. Typically RCR education addresses the topics of: Data Acquisition and Management - collection, accuracy, security, access; Authorship and Publication; Peer Review; Mentor/Trainee Responsibilities; Collaboration; Conflict of Interest; Research Misconduct; Human Subject Research; and Use of Animals in Research.

Section III – ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

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 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. Researchers from other Federal agencies are encouraged to submit a pre-application referencing **DE-FOA-0000770**; 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 National Laboratory is involved as collaborator, the maximum that can be budgeted to the Lab is 50 percent of the total budget.

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-0000769) shown on the cover of this FOA and then follow the prompts to download the application package.

Applications submitted through 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 18, 2012

A pre-application is required and must be submitted by December 18, 2012, 4:30 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 7, 2013*. 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.

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-0000770

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 be submitted electronically through the DOE Office of Science Portfolio Analysis and Management System (PAMS) website https://pamspublic.science.energy.gov/. It is important that the pre-application be in a single PDF file.

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.

To register in PAMS, follow these steps:

1. On the website https://pamspublic.science.energy.gov, click "Create New PAMS Account."
2. Click "No, I have never had an account" and then click "Create an Account."
3. Enter the required information. You will be asked to enter your name, create a user name and password, select a security question, and enter your email address. Click "Save and Continue."
4. Enter your phone number and mailing address. Click "Create Account."
5. You will be presented with a Notice to Users, a Privacy Notice, and the Rules of Behavior. If you agree to comply with the Rules of Behavior, click "Accept."
6. You will be taken to the Register to Institution page. Select "Option 2: I know my institution and I am here to register to the institution."
7. In the "Institution Name like" field, type a keyword found in the name of your institution. You may use the DUNS number or EIN fields, as well, but these are not required. Using fewer search fields will return more results and increase the chances of finding the correct institution.
8. For the "Choose Role" field, select the radio button next to the role that best describes you.
9. Once you find the institution, select "Actions" and then select "Add me to this institution."
10. You will receive the onscreen success message "You have been successfully registered to the institution."

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 establish a PAMS account at https://pamspublic.science.energy.gov/.

Once you have created your account and associated yourself with your institution in PAMS, you can submit the preapplication. To submit the preapplication, log in to PAMS. Select "View Funding Opportunity Announcements" and find the current FOA in the list. Click on "Actions/Views" for this FOA, select "Submit Preproposal" from the dropdown menu, and follow the instructions from there.

Note that you must select one and only one Principal Investigator (PI) per preapplication; click on "Select PI" on the far right side of the screen and then select the appropriate PI from the list of all registered users from your institution returned by PAMS. If you are submitting a preapplication for a PI whose name does not appear on the list, the investigator has not yet registered in PAMS. In this case, you may have PAMS send an email invitation to the PI to

register in PAMS. To do so, choose “Invite PI” at the top left of the “Select PI” screen. You can enter an optional personal message to the PI in the “Comments” box that PAMS presents, and it will be included in the email sent by PAMS to the PI.

When submitting the preapplication, you will be asked to select a program manager. Select the program manager associated with the detailed program description contained in this FOA to which the proposed research idea is responsive.

To upload the preapplication as an attachment into PAMS, select “Attach File” at the far right side of the screen. Search for your file and then select “Attach” to upload the file. You may enter an optional description of the file you are attaching. Using the dropdown at the bottom of the screen, save the preapplication and then submit it to DOE.

Upon submission, the PI will receive an email from the PAMS system acknowledging receipt of the preapplication.

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

If you need help with PAMS, contact the PAMS Help Desk at 855-818-1846, 301-903-9610, or sc.pams-helpdesk@science.doe.gov. The PAMS Help Desk hours of operation are 9 AM to 5:30 PM Eastern Time, Monday through Friday. The PAMS help desk is closed on Federal holidays and weekends.

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 can be found 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

By submitting an application in response to this FOA the Applicant certifies that:

- 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,

- 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 the Applicant's financial assistance application is chosen for award and the award is in excess of $1,000,000, the applicant will, by the end of the fiscal year, upgrade the efficiency of their facilities by replacing any lighting that does not meet or exceed the energy efficiency standard for incandescent light bulbs set forth in Section 325 of the Energy Policy and Conservation Act (42 USC 6295).

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 must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the project director/principal investigator(s) (PD/PI), the project title, 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). This document must not include any proprietary or sensitive business information as the Department may make it available to the public. The project summary must not exceed one 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."

The abstract may be used to prepare publicly-accessible reports about DOE-supported research.

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-0000770
- DOE/Office of Science Program Office: Office of Biological & Environmental Research
- DOE/Office of Science Program Office Technical Contact: Dr. Catherine Ronning
- DOE Grant Number (if Renewal Application):
- PAMS Letter of Intent or Pre-application tracking number:

Is this a Collaboration? If yes, please list ALL Collaborating Institutions/PIs and indicate which ones will also be submitting applications. Also indicate the PI who will be the point of contact and coordinator for the combined research activity.

Note that collaborating applications must be submitted separately. These collaborative applications should all have the same title as the lead application. Each collaborating institution submitting an application must use the same title in Block 11 of the SF 424 (R&R) form. The narrative of these applications needs to be the same and must include a summary of the main contributions from each of the collaborating institutions. However, the respective applications must have their own budget and budget justification.

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. Any subsequent pages will be ignored.

Do not include any Internet addresses (URLs) that provide information necessary to review the application, because the information contained in these sites will not be reviewed. 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.

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.

It is important that the 10-page project narrative section provide a complete description of the proposed work, because reviewers are not obliged to read the Appendices. Applications

exceeding these page limits may be rejected without review or the first 10 pages may be reviewed without regard to the remainder. The page count of 10 does not include the Cover Page and Budget Pages, the Title Page, the biographical material and publication information, or any Appendices.

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. 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) during the last 5 years. Also, list the names and current organizational affiliations of your graduate students and postdoctoral associates during the past 5 years.

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.

Current and Pending Support information is only required for personnel with PI/PD or coPI/co-PD indicated as their Project Role on the R&R Senior/Key Person Profile. All applications must contain a list of all Current and Pending Support detailing public or private support (including in-house support) to which personnel identified in the application have committed portions of their time, whether or not salary support for person(s) involved is included in the budget. Please note that the project being proposed should be included in the pending section of the form. Total project time listed for each PI/PD should be indicated as percent effort and not exceed 100% for concurrent projects. The salary requested on the budget cannot exceed the percent of listed on the Current and Pending form.

- 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. 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, confirmation of communication with the facility's point-of-contact should be indicated by a letter of support from the facility manager. 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. Reviewers are not required to consider information in an appendix, and reviewers may not have time to read extensive appendix materials with the same care they would use with the application proper.

- 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 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.

Applications must contain a budget for each budget period for the entire duration of the proposed project. Annual and cumulative budgets are required.

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. SF-LLL DISCLOSURE OF LOBBYING ACTIVITIES.

If applicable, complete SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form -LLL, "Disclosure Form to Report Lobbying."

Summary of Required Forms/Files

Your application must include the following items:

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

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

If selected for award, DOE reserves 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

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

- Indirect cost information
- Revised budgets
- NIFA Supplemental Form **(**See the NIFA Grants.gov Application Guide for information related to the questions on the 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

N/A

2. Pre-application

DUE: DECEMBER 18, 2012, 4:30 PM EASTERN

A pre-application is required and must be submitted by December 18, 2012, 4:30 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 7, 2013*. 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.

DUE: FEBRUARY 25, 2013, 11:59 PM EASTERN

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

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/applicants/get_registered.jsp). 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/assets/OrganizationRegCheck.pdf to guide you through the process. 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).

3. Application Receipt Notices

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

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 Research 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 agencies' 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.

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 Official will consider the merit review recommendation, program policy factors, and the amount of funds available.

3. Discussions and Award

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to: (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

DOE is striving to make **awards within six months**. The time interval begins on the date applications are due or the date the application is received, if there is no specified due date/deadline. Awards will be made in Fiscal Year 2013.

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: 1. Special Terms and Conditions; 2. Applicable program regulations, if any; 3. Application as approved by DOE/NNSA; 4. DOE assistance regulations at 10 CFR 600; 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

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 .

DUNS AND CCR 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 Cirulcar 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 the 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.

C. REPORTING

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.

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. DOE cannot answer these questions.

Questions relating to the PAMS registration process, system requirements, or any technological issues should be directed to the DOE Office of Science PAMS Support Center at 855-818-1845 or 301-903-9610 or sc.pams-helpdesk@science.doe.gov. The PAMS Help Desk hours of operation are 8:30 AM to 5:00 PM Eastern Time, Monday through Friday. The PAMS help desk is closed on Federal holidays and weekends.

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

B. AGENCY CONTACTS

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

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, http://www.gc.doe.gov/documents/patwaivclau.pdf.

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 or Authorized Departmental Officer for this award and until the awardee receives notice of such availability, to be confirmed in writing by the Contracting Officer or Authorized Departmental Officer.

This FOA is being released prior to the passage of an Appropriations Act for FY 2013. Enactment of additional Continuing Resolutions or an Appropriations Act may affect the availability or level of funding for this program.