

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



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

**Systems Biology Enabled Research on the Role of Microbial
Communities in Carbon Cycling**

**Funding Opportunity Number: DE-FOA-0000866
Announcement Type: Initial
CFDA Number: 81.049**

Issue Date: 02/01/2013

Letter of Intent Due Date: Not Applicable

**Pre-Application Due Date: 03/04/2013 at 5:00 PM Eastern Time
(Pre-applications are required)**

Application Due Date: 04/19/2013 at 11:59 PM 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. You are encouraged to 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 [http://www.sam.gov/sam/transcript/Quick Guide for Grants Registrations v1.7.pdf](http://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)

Many functions for grants and cooperative agreements with the DOE Office of Science are performed in the Portfolio Analysis and Management System (PAMS), which is available at <https://pamspublic.science.energy.gov>.

Preapplications and letters of intent are submitted through PAMS. Formal grant applications are submitted through grants.gov, which will transfer the application into PAMS. This solicitation is available on grants.gov, fedconnect.net, and PAMS. You will receive various notifications from PAMS during the application receipt and review process. Additional functionalities will be added to PAMS in the near future.

You must register in PAMS to submit a pre-application.

To access PAMS, you may use Internet Explorer, Firefox, Google Chrome, or Safari browsers.

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.

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. (Hint: If your laboratory has an acronym, e.g., ANL for Argonne National Laboratory or LBNL for Lawrence Berkeley National Laboratory, type the lab’s acronym under “Institution Name like.” All labs 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, 9:00 AM – 5:30 PM Eastern Time. Telephone: (855) 818-1846 (toll free number) or (301) 903-9610, Email: sc.pams-helpdesk@science.doe.gov. All submission and inquiries about this Funding Opportunity Announcement should reference **DE-FOA-0000866**.

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. Joseph Graber
Office of Biological and Environmental Research
Phone: 301-903-1239
E-mail: joseph.graber@science.doe.gov

STATUTORY AUTHORITY

Public Law 95-91, US Department of Energy Organization Act
Public Law 109-58, Energy Policy Act of 2005

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

SUMMARY

The Office of Biological and Environmental Research (BER) of the Office of Science (SC), U.S. Department of Energy (DOE) hereby announces its interest in receiving applications for research that supports the Genomic Science research program (<http://genomicscience.energy.gov>). In this Funding Opportunity Announcement (FOA), applications are solicited for: i.) systems biology studies on regulatory and metabolic networks of microbes, microbial consortia, and microbe-plant interactions involved in biogeochemical cycling of carbon, ii.) development of –omics approaches to investigate microbial community functional processes involved in carbon cycling in terrestrial ecosystems, and iii.) development of –omics enabled methods and technologies for imaging and analysis of microbially-mediated carbon cycling processes in terrestrial ecosystems.

SUPPLEMENTARY INFORMATION

DOE-BER's Genomic Science program supports fundamental research aimed at identifying the foundational principles that drive biological systems. These principles govern the translation of genetic codes into integrated networks of catalytic proteins, regulatory elements, and metabolite pools underlying the functional processes of organisms. It is the dynamic interaction of these subsystems that ultimately determine the overall systems biology of plants, microbes, and multispecies communities. To address DOE missions in sustainable bioenergy development and understanding climate relevant processes, Genomic Science program research brings -omics driven tools of modern system biology to bear on analyzing interactions between organisms that form biological communities and with their surrounding environments. Understanding the relationships between molecular-scale functional biology and ecosystem-scale environmental processes illuminates the basic mechanisms that drive biogeochemical cycling, carbon biosequestration, and greenhouse gas emissions in terrestrial ecosystems.

Large amounts of organic carbon are currently stored in high-latitude permafrost, grassland or forest soils, and other terrestrial ecosystems, and the activities of microbial communities play key roles in determining the longevity and stability of this carbon and whether or not it is released into the atmosphere as greenhouse gases (GHGs). These processes are often only minimally represented in current carbon cycle models, largely due to challenges associated with investigating microbially mediated activities in the environment. Modern -omics techniques (e.g., metagenomics, metatranscriptomics, metaproteomics, etc.) offer new methods for investigating microbial communities, capturing the functional potential encoded in genomes and enabling qualitative and quantitative measurement active metabolic processes in the environment that can be incorporated into mechanistic and predictive models. Although linking directly from genomes to global phenomena is not practical, many connections at intermediate scales are viable with integrated application of new systems biology approaches and powerful analytical and modeling techniques ranging from cellular to ecosystem scales. By adapting genome-enabled techniques to the investigation of microbial systems *in situ*, this research is providing the quantitative measurements and metabolic and regulatory models that can inform larger-scale biogeochemical models of microbial processes in the environment.

Applications are solicited for -omics driven basic research on the contribution of prokaryotic and eukaryotic microbes and microbial communities to carbon cycling processes in terrestrial ecosystems in the following areas:

- i. **Systems biology studies on regulatory and metabolic networks of microbes, microbial consortia, and microbe-plant interactions involved in biogeochemical cycling of carbon.** Proposed studies should focus on systems biology research using model microbes or microbial consortia that are relevant to large scale carbon cycling processes in terrestrial ecosystems. Model systems should be carefully chosen to facilitate development of metabolic and regulatory network models that could ultimately inform larger-scale biogeochemical models of microbial processes in the environment.
- ii. **Development of -omics approaches to investigate microbial community functional processes involved in carbon cycling in terrestrial ecosystems.** Applications should

address the adaptation of genome-enabled techniques (e.g., metagenomics, metatranscriptomics, metaproteomics) to the interrogation relevant functional processes of microbes in terrestrial environments, either at field sites or using model micro/mesocosms, and integrate resulting data into process understanding at the ecosystem scale. Applications are encouraged that target key microbially-mediated carbon cycling processes in terrestrial systems to predict responses to shifts in temperature, CO₂ concentration, or other climate change variables.

- iii. **Development of –omics enabled methods and technologies for imaging and analysis of microbially-mediated carbon cycling processes in terrestrial ecosystems.** New approaches are needed for high-resolution characterization of microbial community structure and function in soils and other terrestrial environments. Applications are encouraged that will enable *in situ* analysis of functional processes of microbial communities and characterization of physical and chemical microenvironments at interfaces between microbes and biotic or abiotic surfaces (e.g., plant roots, soil aggregates, etc.)

Applications focusing on model organisms or communities that are of limited relevance to understanding global scale carbon cycle processes are not encouraged. Applications primarily focused on metagenomic sequencing are not encouraged for this FOA and should instead be directed to the DOE Joint Genome Institute's Community Sequencing Program. Applications for research that would result in incremental advances on current understanding or technology are not encouraged. BER encourages the submission of innovative "high-risk/high-reward" research applications that address critical knowledge gaps and have the potential for high impact. The probability of success and the risk-reward balance will be considered when making funding decisions.

Further information on DOE-BER objectives in this area of research can be found at: <http://genomicscience.energy.gov/carboncycle/>. Information on the research projects currently funded by the Genomic Science program and a description of project goals and overall program organization can be found at: <http://genomicscience.energy.gov/>.

Information on DOE-BER supported research efforts in the Terrestrial Ecosystem Science (TES) program can be found at: <http://science.energy.gov/ber/research/cesd/terrestrial-ecosystem-science/>.

Applicants are encouraged to consider the use of resources provided by DOE Science User Facilities. These include the DOE Joint Genome Institute (<http://www.jgi.doe.gov/>), the DOE Environmental Molecular Sciences Laboratory (<http://www.emsl.pnl.gov/emslweb/>) and DOE Structural Biology Infrastructure Facilities (<http://science.energy.gov/ber/research/bssd/structural-biology/>).

ADDITIONAL REQUIREMENTS:

Genomic Sequencing, Data Integration, and Data Sharing

Applications requiring genomic, transcriptomic, metagenomic, or metatranscriptomic sequencing of microbes or microbial communities must describe how sequencing will be accomplished and where sequencing fits within the overall project timeline. All invited applications must include a plan for data management and integration that describes how resulting data will be used in addressing the objectives of the proposed research. All funded projects will be required to comply with the Genomic Science program data sharing policy:

<http://genomicscience.energy.gov/datasharing/GTLDataPolicy.pdf>

Annual Meeting

If a project is funded, beginning in the first year of funding, one or more project participants will be required to attend an annual investigator meeting, generally held in the Washington DC area. Reasonable travel expenses may be included as part of the project budget.

Supplemental Funding for Collaboration with the DOE Systems Biology Knowledgebase:

Applicants addressing one or more of the three topical areas listed above may also apply for additional supplemental funding of up to \$300,000 per year for development of systems biology and –omics data driven applications in collaboration with the DOE Systems Biology Knowledgebase in the following areas:

- Development of dynamic regulatory and metabolic networks methods to support larger-scale biogeochemical models of microbial processes in the environment relevant to community response to climate change variables.
- Microbial community scale –omics data integration and data visualization tools relevant to understanding major carbon cycle processes and compatible with the DOE Systems Biology Knowledgebase.

Applicants seeking supplemental funding to develop Knowledgebase applications should describe in a section clearly labeled KNOWLEDGEBASE COLLABORATION in the full proposal, the relevance of the proposed knowledgebase application to the research in the proposal and in the project's data management and integration plan. Funding dedicated to development of knowledgebase applications must be clearly identified in the proposal budget. Proposals submitted for supplemental funding must detail plans to establish partnerships that maximize synergy and leverage with the DOE Systems Biology Knowledgebase (kbase.science.energy.gov) and should include a letter of support.

Applicants interested in data visualization or uncertainty quantifications are encouraged to collaborate with the Office of Advanced Scientific Computing Research SciDAC institutes (<http://science.energy.gov/ascr/research/scidac/scidac-institutes/>).

Section II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding grants under this Funding Opportunity Announcement (FOA).

B. ESTIMATED FUNDING

It is anticipated that up to \$8 million total will be available for multiple awards to be made in FY 2013 for *Genomics Enabled Research on the Role of Microbial Communities in Carbon Cycling*. 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 funds, progress of the research, and programmatic needs. Annual budgets are expected to range from \$250,000 to \$1,000,000 in total costs.

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 MIMUM 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.

Ceiling

\$1,000,000 per year

Floor

\$250,000 per year

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 Fiscal Year 2013 appropriated funds.

E. ANTICIPATED AWARD SIZE

(See B. Estimated Funding Section above.)

The award size will depend on the number of meritorious applications and the availability of Fiscal Year 2013 appropriated funds.

F. PERIOD OF PERFORMANCE

(See B. Estimated Funding section above.)

Research Grant Awards are expected to be made for a period of up to three years as befitting the project.

Out-year funding will depend upon suitable progress and the availability of appropriated funds.

G. TYPE OF APPLICATION

DOE will accept new applications under this FOA.

Section III – ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

All types of entities are eligible to apply, except other Federal agencies, 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. Synergistic collaborations with researchers in Federal Laboratories and Federally Funded Research and Development Centers (FFRDCs), including the DOE National Laboratories are permitted. Collaborations should be limited to filling critical voids in expertise and can represent no more than 50 percent of the total budget.

B. COST SHARING

Cost sharing is not required.

C. ELIGIBLE INDIVIDUALS

N/A

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-0000866 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. PRE-APPLICATION

1. Pre-application

A pre-application is required and must be submitted by 03/04/2013, 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 03/18/2013. 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 Pre-application
Principal Investigator Name, Title
Institution
PI Phone Number, PI Email Address
Funding Opportunity Announcement: DE-FOA-0000866

This information should be followed by a clear and concise description of the objectives and technical approach of the proposed research. The pre-application may not exceed two pages, with a minimum text font size of 11 point and margins no smaller than one inch on all sides. Figures and references, if included, must fit within the two-page limit.

Only one pre-application per Principal Investigator is allowed.

Those pre-applications that are encouraged will be used to help the Office of Science begin planning for the formal 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 formal applications not responsive to this FOA.

To help the Office of Science avoid conflicts of interest in identifying potential reviewers, a one-page list of the Principal Investigator's collaborators, co-editors, and graduate/postdoctoral advisors and advisees must be submitted with the pre-application. The one-page list should be the last page in the pdf pre-application file and will not count against the two-page limit for the pre-application. Further guidance on how to prepare this list is included in the next two paragraphs:

Collaborators and Co-editors: List, in alphabetical order, all persons, including their current organizational affiliations, who are, or who have been, collaborators or co-authors with the Principal Investigator on a research project, book or book article, report, abstract, or paper during the 48 months preceding November 2012. 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 in the past co-editors with the Principal Investigator 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 of the Principal Investigator's own graduate advisor(s) and principal postdoctoral sponsor(s) and their current organizational affiliations. Also list the names of the Principal Investigator's graduate students and postdoctoral associates during the past five years and their current organizational affiliations.

A pre-application must be submitted before March 4, 2013, 5:00 PM Eastern Time. 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 letter of intent. All PIs and those submitting LOIs on behalf of PIs are encouraged to establish PAMS accounts as soon as possible to avoid submission delays.

To access PAMS, you may use Internet Explorer, Firefox, Google Chrome, or Safari browsers.

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.

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. (Hint: If your laboratory has an acronym, e.g., ANL for Argonne National Laboratory or LBNL for Lawrence Berkeley National Laboratory, type the lab’s acronym under “Institution Name like.” All labs 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 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 Pre-Application” from the dropdown.
- On the Submit Pre-Application page, select the institution from which you are submitting this pre-application 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 pre-application; 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 pre-application. Save the pre-application for later work by clicking the “Save” button at the bottom of the screen. It will be stored in “My Pre-applications” for later editing.
- Enter a title for your pre-application.
- Select the appropriate technical contact from the Program Manager dropdown.
- To upload the pre-application 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 “Attach” button to upload the file.
- At the bottom of the screen, click the “Submit to DOE” button to save and submit the pre-application to DOE.
- Upon submission, the PI will receive an email from the PAMS system acknowledging receipt of the pre-application.

You are encouraged to register for an account in PAMS at least a week in advance of the pre-application 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, 9:00 AM – 5:30 PM Eastern Time. Telephone: (855) 818-1846 (toll free number) or (301) 903-9610, Email: sc.pams-helpdesk@science.doe.gov. All submission and inquiries about this Program Announcement should reference **DE-FOA-0000866**.

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.

LETTERS

Letters of recommendation are not allowed. Applications that include recommendation letters will be subject to elimination from consideration during DOE’s initial review. A department chair letter is not required and should not be included.

Letters of endorsement from unfunded collaborators should be included, if applicable. Do not submit general letters of support as these are not used in making funding decisions and can interfere with the selection of peer reviewers.

Optional letters of collaboration for unfunded or funded collaborations may be placed in Appendix 6 (Other Attachments). Letters of collaboration should state the intention to participate, but they should not be written as recommendation or endorsement letters, which are not allowed.

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).

PUBLIC POLICY REQUIREMENTS

The applicant is made aware of the following public policy requirements:

- Animal Welfare as required by the Animal Welfare Act of 7 USC 2131 et seq.
- The Buy American Act of 1933, codified at 41 USC 10 et seq.
- Civil Rights Protections including but not limited to the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, the Rehabilitation Act of 1973, and the Age Discrimination Act of 1975, all of which are regulated by 10 CFR 1040
- Debarment and Suspension, as regulated at 10 CFR 606
- The Drug-Free Workplace Act of 1988 (41 USC 701) as regulated by 10 CFR 607
- The Federal Funding Accountability and Transparency Act (Public Law 109-282) as regulated by 2 CFR 170
- The Fly America Act, codified at 49 USC 40118, which generally requires that travel supported by Federal funds be conducted on US-flag carriers
- Health and Safety Regulations including but not limited to
 - OSHA's guidance at 29 CFR 1910
 - NRC safety regulations at 10 CFR 20
- Human Research Subjects Protection
- Lobbying Prohibitions of 31 USC 1352 and regulated by 10 CFR 601
- Metric System use as encouraged by EO 12770 of July 25, 1991
- The National Environmental Policy Act of 1969
- Non-delinquency on Federal Debt as required by the Federal Debt Collection Procedures Act of 1990, codified at 28 USC 3201
- Seat Belt Use, as required by EO 13043 of April 16, 1997
- Text Messaging While Driving, as required by EO 13513 of October 1, 2009
- Trafficking in Persons, as required by the Trafficking Victims Protection Act of 2000 (codified at 22 USC 7104) and regulated by 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 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, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). 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 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."

The abstract may be used to prepare publicly-accessible reports about DOE-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-0000866
- DOE/Office of Science Program Office: Biological & Environmental Research
- DOE/Office of Science Program Office Technical Contact: Dr. Joseph Graber
- DOE Grant Number (if Renewal Application):
- PAMS Pre-application tracking number:

PROJECT NARRATIVE (FIELD 8 ON THE FORM)

The project narrative may not exceed **15 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 15-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 15 pages may be reviewed without regard to the remainder. The page count of 15 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 2 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.

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) 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.

- 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 (R&R) 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.

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:

| 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

E. SUBMISSION DATES AND TIMES

1. Pre-application Due Date

03/04/2013, 5:00 pm EST

2. Application Due Date

04/19/2013, 11:59 pm EST

You are encouraged to transmit 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 Part 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 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.

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 merit review recommendations as well as program policy factors, such as ensuring a programmatically appropriate balance within the program areas, and quality of previous performance. Selection of applications for award will be based upon the findings of the technical evaluations, the importance and relevance of the proposed research to the SC mission, and funding availability.

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

It is expected that 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.)

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

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; (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.

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://ecfr.gpoaccess.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://ecfr.gpoaccess.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.

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.

4. Statement of Substantial Involvement

Only grants will be awarded under this FOA. No Statements of Substantial Involvement will be required, negotiated, or provided.

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.

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.

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, 9:00 AM – 5:30 PM Eastern Time. Telephone: (855) 818-1846 (toll free number) or (301) 903-9610, Email: sc.pams-helpdesk@science.doe.gov. All submission and inquiries about this Funding Opportunity Announcement should reference **DE-FOA-0000866**.

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

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 | Dr. Joseph Graber 301-903-1239 Joseph.graber@science.doe.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.

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