

**FINANCIAL ASSISTANCE  
FUNDING OPPORTUNITY ANNOUNCEMENT**



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

***Subsurface Biogeochemical Research***

**Funding Opportunity Number: DE-FOA-0000555**

**Announcement Type: Amendment**

**CANCELED**

**CFDA Number: 81.049**

**ISSUE DATE: June 10, 2011**

**Preapplication Due Date: July 15, 2011, 4:30 p.m. Eastern Time  
(Preapplications are Required)**

**Application Due Date: ~~September 19, 2011, 11:59 p.m. Eastern Time~~  
Due to FY2012 budget constraints, this FOA is  
being canceled.**

## NOTE: REQUIREMENTS FOR GRANTS.GOV

**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 CCR 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.

**Registration Requirements:** There are several one-time actions you must complete in order to submit an application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). Use the Grants.gov Organization Registration Checklist at <http://www.grants.gov/assets/OrganizationRegCheck.pdf> to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible.

**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).

**Questions:** Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or [support@grants.gov](mailto:support@grants.gov). Part VII of this Funding Opportunity Announcement (FOA) explains how to submit other questions to the Department of Energy (DOE).

### 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

Questions regarding the content of the FOA must be submitted through the FedConnect portal. You must register with FedConnect to respond as an interested party to submit questions, and to view responses to questions. It is recommended that you register as soon after release of the FOA as possible to have the benefit of all responses. More information is available at [https://www.fedconnect.net/FedConnect/PublicPages/FedConnect\\_Ready\\_Set\\_Go.pdf](https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf). DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

**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 announcements. More information is available at <http://www.fedconnect.net>.

**All applications should be in a single PDF file.**

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## PART I – FUNDING OPPORTUNITY DESCRIPTION

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

#### Technical/Scientific Program Contact:

**Program Manager:** Dr. David Lesmes

**Phone:** (301) 903-2977

**E-mail:** [David.Lesmes@science.doe.gov](mailto:David.Lesmes@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 Part 600

U.S. Department of Energy, Office of Science Financial Assistance Program Rule, codified at 10 CFR Part 605

### SUMMARY:

The Office of Biological and Environmental Research (BER) of the Office of Science (SC), U.S. Department of Energy (DOE), hereby announces interest in receiving applications for research grants for Subsurface Biogeochemical Research (SBR). The SBR program is part of the Climate and Environmental Sciences Division (CESD) in BER. The SBR program seeks to advance fundamental science to understand, predict and mitigate the impacts of environmental contamination from past nuclear weapons production and a scientific basis for the long term stewardship of nuclear waste disposal. The activity supports an integrated portfolio of research ranging from molecular to field scales with emphasis on the use of advanced computer models and multidisciplinary, iterative experimentation to understand and predict contaminant transport in complex subsurface environments. The goal of this Funding Opportunity Announcement (FOA) is to support fundamental research to investigate the key physical, chemical, and biological processes affecting the form and mobility of subsurface contaminants found at DOE sites. Research projects should be based on critical knowledge gaps and be hypothesis driven, with an aim to provide the scientific basis for the long term stewardship of contaminated sites across the DOE complex and the development of new remediation concepts and strategies. The environment of interest is the terrestrial subsurface including the vadose zone, the saturated zone and key groundwater-surface water interfaces. The specific radionuclide and heavy metal contaminants and the general science needs for this FOA are outlined in the **Supplementary Information**. Phytoremediation and the study of organic contaminants are NOT addressed in this FOA.

## SUPPLEMENTARY INFORMATION:

### Contaminants of Concern

Key contaminants (and their mixtures) of interest for this FOA are:

- Radionuclides: uranium, technetium-99, strontium-90, plutonium, cesium-137, iodine-129, and neptunium-237;
- Non-Radioactive Metals: mercury and chromium(VI); and
- Nitrate and complexing agents as co-contaminants with the listed radionuclides or non-radioactive metals.

**Non-Aqueous Phase Liquid (NAPL) contaminants are NOT a focus for this FOA. Applications addressing NAPL or organic contaminants will not be considered at this time.**

The fundamental research program supported by SBR provides a scientific foundation that supports the Office of Environmental Management's (EM) cleanup decisions and complements the applied research activities of EM's Groundwater and Soil Remediation (GSR) program ([http://www.em.doe.gov/pdfs/GWandS\\_Science%20Opp\\_Final\\_Rev%200.pdf](http://www.em.doe.gov/pdfs/GWandS_Science%20Opp_Final_Rev%200.pdf)). A description of the GSR applied research program as well as the nature and extent of contamination at the principal DOE sites is available at: <http://www.em.doe.gov/Pages/GroundwaterSoilCleanup.aspx>.

The following links provide additional information about the nature and extent of contamination at the principal DOE sites:

- Groundwater Contamination and Treatment at DOE Sites: [http://emdev.apps.em.doe.gov/emdev/pdfs/Groundwater\\_Booklet-2008.pdf](http://emdev.apps.em.doe.gov/emdev/pdfs/Groundwater_Booklet-2008.pdf)
- Hanford Site: <http://www.hanford.gov>
- Idaho National Laboratory Site: <http://www.inl.gov/subsurface/environmentalissues/vadosezone.shtml>
- Oak Ridge Reservation: <http://www.oro.doe.gov/external/Programs/EnvironmentalManagement/tabid/42/Default.aspx>
- Savannah River Site: <http://www.srs.gov/general/srs-home.html>, <http://www.srs.gov/general/programs/soil/extpage.html>

### Research Applications: Full and Exploratory

SBR seeks to advance fundamental science to understand, predict and mitigate the impacts of environmental contamination from past nuclear weapons production and a scientific basis for the long term stewardship of nuclear waste disposal. Applications submitted in response to this FOA should address the basic science needs for SBR outlined in the **Science Needs** section and should address at least one of the contaminants of interest. Applications must identify whether the application is a **Full Application** or an **Exploratory Application** as defined in the **Estimated Funding** section. Both single investigator projects and multi-investigator projects are

encouraged. Multi-investigator projects are expected to integrate the efforts of a multi-disciplinary team to tackle problems that cannot be effectively addressed by a single investigator. All projects should clearly delineate an integrative, hypothesis-driven research approach and describe how the results of the research would ultimately improve the understanding of processes affecting the mobility of contaminants at the field scale in the context of DOE's environmental cleanup and stewardship missions.

A small but critical element of the SBR portfolio is the development of enabling scientific tools for characterizing the spatial and temporal evolution of complex subsurface systems. Applicants proposing to develop enabling scientific tools for subsurface science should clearly indicate this in the Executive Summary. Applications to develop enabling scientific tools are NOT required to motivate the proposed research with specific hypotheses; however, these applications MUST justify both the novelty and technical merit of the proposed scientific tools as well as explain the potential to improve the understanding of subsurface processes and the monitoring of contaminated sites.

The intent of **Full Applications** is to make a significant contribution to the SBR research challenges, based on either individual or team based efforts, and with a duration of up to three years. The intent of the **Exploratory Research** component of SBR is to catalyze the study of new concepts, tools and approaches that could lead to breakthroughs in subsurface remediation science as well as to broaden the pool of researchers in SBR. Eligible areas are included in the **Science Needs** section. **Exploratory Applications** will have a shorter duration and less funding than **Full Applications**. These projects are intended to provide opportunities to conduct preliminary research and to develop novel ideas for later, more substantial funding opportunities within SBR (i.e., Full Applications). **Exploratory Applications** should address topics that could lead to breakthroughs in one or more of the science areas in the program and align with the SBR focus on processes occurring in the subsurface including the vadose zone, the saturated zone and key groundwater-surface water interfaces. The contaminants of interest for **Exploratory Applications** are the same as those listed in the **Contaminants of Concern** section.

Both **Full and Exploratory Applications** are intended to fill critical knowledge gaps, including the exploration of some high-risk approaches. BER encourages the submission of innovative "high-risk" applications with potential for future high impact on subsurface processes affecting contaminant transport. The probability of success and the risk-reward balance will be considered when making funding decisions.

## **Science Needs**

SBR seeks to develop a fundamental and quantitative understanding of the physical, chemical and biological processes affecting contaminant transport in the subsurface and at key groundwater-surface water interfaces at DOE sites. Critical to this objective is a better understanding of how these coupled processes affect contaminant mobility, reactivity and stability in subsurface environments. Although the emphasis is on an integrative understanding of the relationships among the coupled physical, chemical and biological processes, applications submitted to SBR need not necessarily incorporate an investigation of all three processes for situations where contaminant transport is dominated unequally by one process or another, but



should describe the rationale for the overall focus of the research. These science needs are inherently multidisciplinary, but do not preclude single investigator projects of strong DOE environmental relevance. Coordination with an SBR field project is encouraged where appropriate but not required.

The following resources are intended to help prospective applicants understand the current scope and direction of the SBR research activity:

The SBR Strategic Plan is available on the SBR website at:

[http://science.energy.gov/~media/ber/pdf/Subsurface\\_biogeochemical\\_research\\_strategic\\_plan.pdf](http://science.energy.gov/~media/ber/pdf/Subsurface_biogeochemical_research_strategic_plan.pdf). Additional information on approaches to understanding DOE's contamination issues are detailed in an August 2009 workshop report on "Complex Systems Science for Subsurface Fate and Transport" and can be found at [http://science.energy.gov/~media/ber/pdf/Subsurface\\_complexity\\_03\\_05\\_10.pdf](http://science.energy.gov/~media/ber/pdf/Subsurface_complexity_03_05_10.pdf). The website for the SBR program can be found at <http://science.energy.gov/ber/research/cesd/subsurface-biogeochemical-research/>, along with links to the annual SBR PI Meeting which contains plenary presentations, summaries of breakout sessions and abstracts for all funded projects: [http://esd.lbl.gov/research/projects/ersp/generalinfo/PI\\_ann\\_mtgs.html](http://esd.lbl.gov/research/projects/ersp/generalinfo/PI_ann_mtgs.html).

## **Related Programs**

The SBR activity strongly encourages investigators to familiarize themselves with the resources and potential partnering opportunities provided within SBR. The SBR activity funds basic research on subsurface contaminant transport and remediation processes ranging from molecular-scale processes to field-scale processes via a unique set of program resources and leveraging of these resources is strongly encouraged. Applicants should familiarize themselves with the following resources and potential partnering opportunities:

The SBR activity initiated three large multidisciplinary Integrated Field Research Challenge (IFRC) projects in FY 2007. The IFRCs are located at Oak Ridge, Tennessee; Rifle, Colorado; and the Hanford 300 Area in Richland, Washington. In addition, the SBR activity supports a project at the Hanford 100H area to perform field investigations to assess the potential for immobilizing and detoxifying chromium-contaminated soils and groundwater using bioremediation. These research sites enable the testing of hypotheses under natural conditions at the field scale and provide SBR investigators with opportunities to obtain samples of environmental media for experimental purposes. Applicants interested in using these resources must contact the respective Lead Scientist and must include a letter of support from the Lead Scientist in the full application. Programmatic and contact information for these projects can be found at: [http://www.lbl.gov/ERSP/generalinfo/field\\_scale.html](http://www.lbl.gov/ERSP/generalinfo/field_scale.html).

The SBR activity supports focused research programs at DOE's National Laboratories and a diverse portfolio of research projects led by University PIs. While National Laboratory support is primarily provided to multidisciplinary teams within Science Focus Areas (SFAs), university led research projects are selected and funded through this FOA. All SBR PIs and key Co-PIs of both University and Laboratory projects are required to attend the annual SBR Principal Investigator's Meeting.

Programmatic resources in BER also include the Environmental Molecular Sciences Laboratory (EMSL, <http://www.emsl.pnl.gov/emslweb/>) located at the Pacific Northwest National Laboratory. EMSL is a National Scientific User Facility that supports an array of co-located experimental and computational capabilities for molecular-level research that are made available to the scientific community. Investigators are strongly encouraged to consider making use of EMSL capabilities in developing applications.

Biological processes profoundly influence contaminant transport at a variety of scales in the subsurface. The SBR activity maintains a close relationship with the Genomic Science program (<http://genomicscience.energy.gov/>) and the microbial genome sequencing efforts at the Joint Genome Institute (JGI, <http://www.jgi.doe.gov/>) in order to take advantage of revolutionary genome-enabled and systems biology techniques that promise a more mechanistic understanding of subsurface microbial metabolism affecting contaminant transport. Through its Community Sequencing Program (CSP), the JGI solicits proposals related to the DOE missions of bioenergy, global carbon cycling and biogeochemical processes influencing contaminant transport. More information can be found at <http://www.jgi.doe.gov/programs/index.html>. Studies requiring metagenomic or other genome sequencing analyses are encouraged to seek support via the community sequencing program at the JGI. Projects seeking alternative sequencing support to meet project sequencing needs will need to budget accordingly.

DOE's substantial computational resources are now being applied to simulations of subsurface reactive transport through SBR participation in the SciDAC (Scientific Discovery through Advanced Computing, <http://www.osti.gov/scidac/>) program. The SciDAC program funds computationally intensive research on fundamental science questions using some of the world's most powerful computers. SBR, in conjunction with DOE's Office of Advanced Scientific Computing, is supporting the following two SciDAC projects (<http://www.lbl.gov/ERSP/generalinfo/modeling.html>): "Modeling Multiscale-Multiphase-Multicomponent Subsurface Reactive Flows using Advanced Computing" and "Hybrid Numerical Methods for Multiscale Simulations of Subsurface Biogeochemical Processes". Additionally, EM has recently initiated the Advanced Simulation Capability for Environmental Management (ASCEM) project (<http://ascemdoe.org/>). ASCEM is a modular and open source high performance computing tool (a DOE-led community model) that will facilitate integrated approaches to modeling and site characterization and enable robust and standardized assessments of performance and risk for EM cleanup and closure activities.

DOE also provides compute cycles to the scientific user community at high performance computing centers, including the National Energy Research Scientific Computing Center (NERSC) at the Lawrence Berkeley National Laboratory (<http://www.nersc.gov/>), the National Center for Computational Sciences (NCCS) at the Oak Ridge National Laboratory (<http://nccs.gov/>), and at EMSL (<http://www.emsl.pnl.gov/capabilities/computing/>).

DOE funded synchrotron light sources are capable of providing structural and chemical information often unavailable with conventional sources of x-rays. DOE laboratories with synchrotron scientific user facilities include: Argonne National Laboratory (<http://www.aps.anl.gov/>); Lawrence Berkeley National Laboratory

([http://esd.lbl.gov/als\\_environmental\\_program/](http://esd.lbl.gov/als_environmental_program/)); and Stanford Synchrotron Radiation Laboratory (<http://www-ssrl.slac.stanford.edu/mes/remedi/index.html>). Use of the synchrotron light sources requires a separate approval process.

## **Collaboration**

Multi-disciplinary and inter-institutional collaborations are strongly encouraged to enhance and strengthen research capabilities as needed. Collaboration could include institutions such as universities, industry, non-profit organizations, federal agencies and Federally Funded Research and Development Centers (FFRDCs). All collaborative applications should include letters of agreement from each collaborator who would receive funding. These letters should specify the contributions the collaborators intend to make if the application is accepted and funded. Applications for multi-investigator projects should present a management structure for integrating collaborating investigators. Involvement of students and post doctoral scientists is encouraged. Refer to <http://www.sc.doe.gov/grants/colab.asp> for details. Only the Lead Institution and PI need submit an application to this FOA at this time but the submission **must** include all budgetary information for all funded Co-PIs.

## **Data Sharing Policy**

Research data obtained through public funding are a public trust. As such, these data should be publicly accessible. However, for these data sets to be most useful to the SBR program and the broader scientific community, more effective tools are needed for developing and managing these community data bases. Towards this goal, the SBR program held a workshop on Data Management Needs for Subsurface Science on April 28 and 29, 2011, in Washington, D.C. Over the next year the SBR program intends to develop a more unified approach to supporting the development of community data bases and to work with partners within the DOE and other federal agencies to develop tools for better managing these community data bases. The workshop report and more information about this effort will be made available through the SBR website (<http://science.energy.gov/ber/research/cesd/subsurface-biogeochemical-research/>).

Applications submitted in response to this FOA must include a description of the applicant's current data sharing plans and their commitment to contribute their data to a more unified SBR community data base as the appropriate archives and data management tools become available. Applicants are allowed an initial period of exclusive use of the acquired data to quality assure it and to publish papers based on the data, but they are strongly encouraged to make the data openly available as soon as possible after this period. DOE's Office of Biological and Environmental Research defines the exclusive use period to be one year after the end of the data acquisition period for the proposed performance period of the grant application but exceptions to extend this period may be justified for unique or extenuating circumstances.

## **REFERENCES**

National Research Council, 2000. Research Needs in Subsurface Science, U.S. Department of Energy's Environmental Management Science Program. National Academy Press, Washington, DC. <http://www.nap.edu/browse.html>

National Research Council, 2003. Long-Term Stewardship of DOE Legacy Waste Sites: A Status Report. National Academies Press, Washington DC.

[http://books.nap.edu/openbook.php?record\\_id=10703&page=R1](http://books.nap.edu/openbook.php?record_id=10703&page=R1)

Davis, J.A.; S.B. Yabusaki; C.I. Steefel; J.M. Zachara; G.P. Curtis; G.D. Redden; L.J. Criscenti; B.D. Honeyman 2004. Assessing Conceptual Models for Subsurface Reactive Transport of Inorganic Contaminants EOS 85, 449-455.

Department of Energy, 2007. Basic Research Needs for Geosciences: Facilitating 21st Century Energy Systems. DOE Office of Science, Basic Energy Sciences, Washington, DC, 186p.

[\(http://www.science.energy.gov/bes/news-and-resources/reports/basic-research-needs/\)](http://www.science.energy.gov/bes/news-and-resources/reports/basic-research-needs/)

Department of Energy, 2006. EMSL Strategic Plan 2006. Prepared for DOE under contract DE-AC06-76RL01830 by Pacific Northwest National Laboratory (PNNL-15578),

[http://www.emsl.pnl.gov/docs/strategic\\_plan\\_01\\_06.pdf](http://www.emsl.pnl.gov/docs/strategic_plan_01_06.pdf)

### **Any Other Special Requirements:**

Only the Lead Institution and PI need submit an application to this FOA; however, the submission must include all budgetary information for all Co-PIs. The application narrative should begin with the same cover page as the pre-application and include: the project title, the Lead PI's name and complete contact information, whether the application is for a **Full or Exploratory** project, whether the application is a **New or Renewal** application and a table listing the Lead PI and institution and all Co-PIs, their institutions and the amount of funding requested for each year for the project for each investigator.

The one-page Executive Summary (separate from the Project Summary/Abstract) should be one-page that identifies the name of the applicant, the project director/principal investigator(s), the project title, the objectives of the project, the hypotheses to be tested and/or the enabling capabilities to be developed, the proposed experimental design, the names of all investigators and their affiliations, and the potential impact of the project to DOE (i.e., benefits, outcomes). Applicants should include an Executive Summary after the Title page as part of the Narrative section. The Executive Summary does not count toward the narrative page limits. Applicants proposing to develop enabling scientific tools for subsurface science should clearly indicate this in the Executive Summary.

Attachments should include short (2 pages) curriculum vitae, a listing of all current and pending federal support and Letters of Intent for proposed collaborators, including use of IFRC sites or samples (when applicable). These attachments do not count toward the narrative page limits.

Applications that include funded DOE National Laboratory Co-PIs from BER Science Focus Area (SFA) programs should include a letter of support from the SFA Laboratory Research Manager.

Grantees must comply with federal and state laws and regulations as appropriate. Although compliance with the National Environmental Policy Act (NEPA) is the responsibility of DOE, grantees proposing to conduct field-related research should expect to provide information necessary for the DOE to complete the NEPA review and documentation.

**All Lead PI's are required to attend an annual SBR PI meeting** (generally a 3-day meeting held in the Washington DC area). Travel funds should be budgeted to allow at least the lead PI to attend this meeting.

## PART II – AWARD INFORMATION

### A. TYPE OF AWARD INSTRUMENT.

DOE will accept New Applications and Renewal Applications under this FOA.

### B. ESTIMATED FUNDING.

It is anticipated that up to **\$5,000,000 will be available for approximately 15 to 20 awards** to be made in Fiscal Year 2012, contingent on the availability of appropriated funds. Funds for this research will come from SBR. 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.

For a **Full Application** (narrative limited to 20 pages), applicants may request project support up to three years, with out-year funding contingent on the availability of appropriated funds, progress of the research and programmatic needs. Annual budgets for single investigator projects may not exceed \$250,000/year total costs. Annual budgets for multi investigator projects may not exceed \$450,000/year total costs.

For an **Exploratory Application** (narrative limited to 10 pages), applicants may request project support for up to two years with a total budget of up to \$150,000. All Exploratory Research applications should have a single budget period which is either 12 months or 24 months depending on the duration of the project, and all Exploratory Research awards will be funded in full at the start of the project.

*Applications that are not compliant with either the page or budget limitations described above may be declined administratively without review.*

### C. MAXIMUM AND MINIMUM AWARD SIZE.

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

### D. EXPECTED NUMBER OF AWARDS.

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

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

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

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

For a **Full Application**, a maximum of three years will be considered. Out-year funding will depend upon suitable progress and the availability of appropriated funds. For an **Exploratory application**, a maximum of two years will be considered.

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

DOE will accept new and renewal applications under this FOA.

Renewal applications compete with all other applications. 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. The application must include all the information required for a new project, plus the project narrative section should discuss the results from prior work.

Renewal applications must include the same forms and information categories as a new application, except for the following changes:

1. Include under the project description section information on any changes that affect the overall direction of the research being pursued.
2. Include an estimate of anticipated unexpended funds that will remain at the end of the current project period.
3. Include a progress report as a separate section 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.

## PART III - ELIGIBILITY INFORMATION

### A. ELIGIBLE APPLICANTS.

All types of entities are eligible to apply as the lead institution 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 interested in submitting a proposal are **required** to submit a preproposal referencing this FOA **DE-FOA-0000555** (see the **Preapplication** section in Part IV B.2). If a formal proposal is encouraged, **Federal agencies should follow the instructions at the following website to submit a formal proposal:**  
[http://science.doe.gov/grants/fed\\_prop.asp](http://science.doe.gov/grants/fed_prop.asp).

### B. COST SHARING.

Cost sharing is not required.

### C. OTHER ELIGIBILITY REQUIREMENTS.

N/A



## PART 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 a Grant Application Package**". Enter the CFDA and/or the funding opportunity number located on the cover of this Funding Opportunity Announcement and then follow the prompts to download the application package.

### B. LETTER OF INTENT AND PREAPPLICATION

#### 1. Letter of Intent.

Letters of Intent are not required.

#### 2. Preapplication.

##### **Preapplications are required.**

Potential applicants are required to submit a brief preapplication, referencing Funding Opportunity Announcement DE-FOA-0000555 for receipt by DOE by **4:30 p.m., Eastern Time, July 15, 2011.**

Preapplications are limited to three pages total, including a prescribed cover page. The cover page should include: the project title, the Lead PI's name and complete contact information, whether a Full or Exploratory application is anticipated, whether the application is a **New or Renewal**, and a table listing the Lead PI and institution and all funded Co-PIs, and their institutions and the approximate amount of funding requested for each year for the project for each funded investigator. A sample cover page is available at [http://science.energy.gov/ber/research/cesd/preapp\\_cover\\_page\\_template](http://science.energy.gov/ber/research/cesd/preapp_cover_page_template).

Preapplications must be sent individually as a single PDF file attachment via email to: **david.lesmes@science.doe.gov**. **The subject line of the email must state: "SBR Preapplication to DE-FOA-0000555 – [Full or Exploratory]". Preapplications must be received by DOE by 4:30 PM, Eastern Time, July 15, 2011.** No FAX or mail submission of preapplications will be accepted. Preapplications will be reviewed for conformance with the guidelines presented in this FOA and suitability in the technical areas specified in this FOA. A response to the preapplications encouraging or discouraging formal applications will be communicated to the applicants by August 5, 2011. Applicants who have not received a response regarding the status of their preapplication by this date are responsible for contacting the program office to confirm the status of their preapplications.

All preapplications should describe the research objectives, the technical approach(s), and the proposed team members and their expertise. Applications that have been previously submitted for review and declined should also describe how the applicants have responded to the reviewer comments in this revised and resubmitted application. Renewal Applications should briefly summarize the significant findings and publications resulting from the previous work and explain how such results relate to the activities proposed to be undertaken in the renewal period.

The intent in requesting a preapplication is to save the time and effort of applicants in preparing and submitting a formal project application that may be inappropriate for the program. Preapplications will be reviewed relative to the scope and research needs as outlined in this FOA. Biographical data are not required for preapplications, nor is an institutional endorsement necessary.

## **C. CONTENT AND FORM OF APPLICATION – SF 424 (R&R)**

You must complete the mandatory forms and any applicable optional forms (e.g., SF-LLL-Disclosure of Lobbying Activities) 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 funding opportunity 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://management.energy.gov/business\\_doe/business\\_forms.htm](http://management.energy.gov/business_doe/business_forms.htm), under Certifications and Assurances.

### **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 1-2 pages 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.”

**Project Narrative (Field 8 on the Form).**

The project narrative **must not exceed 20 pages** for **Full Applications** and **must not exceed 10 pages** for **Exploratory Applications**, 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). Narrative page limits do not include executive summary, abstract or bibliography pages, but they do include the progress section for Renewal Applications. *Applications that are not compliant with either the page or budget limitations described above may be declined administratively without review.* EVALUATORS WILL ONLY REVIEW THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE. The font must not be smaller than 11 point. 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.”

Letters of endorsement from unfunded collaborators should also be included, if applicable. Please do not submit general letters of support as these are not used in making funding decisions.

The application narrative should begin with a cover page that includes: the project title, the Lead PI’s name and complete contact information.

**The cover page must also include the following information (this page will not count in the project narrative page limitation):**

**Applicant/Institution:**

**Street Address/City/State/Zip:**

**Principal Investigator:**

**Postal Address:**

**Telephone Number:**

**Email:**

**Funding Opportunity Announcement Number: DE-FOA-0000555**

**DOE/Office of Science Program Office: Office of Biological & Environmental Research**

**DOE/Office of Science Program Office Technical Contact: Dr. David Lesmes**

**DOE Grant Number (if Renewal or Supplemental Application):**

**Is this a Collaboration?** If yes, please list ALL Collaborating Institutions/Pis.

The project narrative must include:

**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.

**Appendix 1: Biographical Sketch Appendix.**

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 limits.** The biographical information for each person must not exceed two pages when printed on 8.5” by 11” paper with one-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 five 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 five years. Also, list the names and current organizational

affiliations of your graduate students and postdoctoral associates during the past five 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. Do not attach a separate file. The Current and Pending Support Appendix will not count in the project narrative page limitation.** Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review.

### **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. This appendix will not count in the project narrative page limits.** Do not attach a separate file.

### **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. **Provide the Facility and Other Resource information as an appendix to your project narrative. This appendix will not count in the project narrative page limits.** Do not attach a separate file.

### **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. This appendix will not count in the project narrative page limits.** Do not attach a separate file.

### **Appendix 6: Other Attachments.**

If you need to elaborate on your responses to questions 1-5 on the “Other Project Information” document, **provide the information as an appendix to your project narrative. This appendix will not count in the project narrative page limits.** Do not attach a separate file.

**Do not attach any of the requested appendices described above as files for fields 9, 10, 11 and 12; instead follow the above instructions to include the information as appendices to the project narrative file (these appendices will not count in the project narrative page limitation).**

### **3. RESEARCH AND RELATED BUDGET.**

Complete the Research and Related Budget form in accordance with the instructions on the form. 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; material 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 Subrecipients, other than DOE FFRDC Contractors.**

You must provide a separate cumulative R&R budget for each subrecipient 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 subrecipients. Download the R&R Budget Attachment from the R&R SUBAWARD BUDGET ATTACHMENT(S) FORM and e-mail it to each subrecipient that is required to submit a separate budget. After the subrecipient has emailed its completed budget back to you, attach it to one of the blocks provided on the form. Use up to ten letters of the subrecipient'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 two-digit state code followed by a dash and a three-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 documents:

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

Letters of Intent are not required.

### 2. Preapplication.

#### **Preapplications are required.**

Potential applicants are required to submit a brief preapplication, referencing Funding Opportunity Announcement DE-FOA-0000555 for receipt by DOE by **4:30 p.m., Eastern Time, July 15, 2011.**

Preapplications are limited to three pages total, including a prescribed cover page. The cover page should include: the project title, the Lead PI's name and complete contact information, whether a Full or Exploratory application is anticipated, whether the application is a **New or Renewal**, and a table listing the Lead PI and institution and all funded Co-PIs, and their institutions and the approximate amount of funding requested for each year for the project for each funded investigator. A sample cover page is available at [http://science.energy.gov/ber/research/cesd/preapp\\_cover\\_page\\_tmpl](http://science.energy.gov/ber/research/cesd/preapp_cover_page_tmpl).

Preapplications must be sent individually as a single PDF file attachment via email to: **david.lesmes@science.doe.gov**. **The subject line of the email must state: "SBR Preapplication to DE-FOA-0000555 – [Full or Exploratory]". Preapplications must be received by DOE by 4:30 PM, Eastern Time, July 15, 2011.** No FAX or mail submission of preapplications will be accepted. Preapplications will be reviewed for conformance with the guidelines presented in this FOA and suitability in the technical areas specified in this FOA. A response to the preapplications encouraging or discouraging formal applications will be communicated to the applicants by August 5, 2011. Applicants who have not received a response regarding the status of their preapplication by this date are responsible for contacting the program office to confirm the status of their preapplications.

All preapplications should describe the research objectives, the technical approach(s), and the proposed team members and their expertise. Applications that have been previously submitted for review and declined should also describe how the applicants have responded to the reviewer comments in this revised and resubmitted application. Renewal Applications should briefly summarize the significant findings and publications resulting from the previous work and explain how such results relate to the activities proposed to be undertaken in the renewal period.

The intent in requesting a preapplication is to save the time and effort of applicants in preparing and submitting a formal project application that may be inappropriate for the program. Preapplications will be reviewed relative to the scope and research needs as



outlined in this FOA. Biographical data are not required for preapplications, nor is an institutional endorsement necessary

### **3. Formal Applications.**

Formal applications submitted in response to this FOA must be received by September 19, 2011, 11:59 PM Eastern Time, to permit timely consideration of awards in Fiscal Year 2012. **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.**

Cost Principles. Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600 and 2 CFR 215.

Pre-award Costs. Recipients may charge to an award resulting from this FOA 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 Part 600 and 2 CFR 215. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90-day calendar period.

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

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

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

**APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV TO BE CONSIDERED FOR AWARD.**

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

## **2. Registration Process.**

You must COMPLETE the one-time registration process (all steps) before you can submit your first application through Grants.gov. We recommend that you start this process at least three weeks before the application due date. It may take 21 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. IMPORTANT: During the CCR 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).

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 CCR registration annually.

## **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

## PART 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).

#### 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) :

1. Scientific and/or Technical Merit of the Project
2. Appropriateness of the Proposed Method or Approach
3. Competency of Applicant's Personnel and Adequacy of Proposed Resources; and
4. 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.

A key consideration in the evaluation of research applications will be the potential impact of the proposed research project on the SBR mission to advance fundamental science to understand, predict and mitigate the impacts of environmental contamination from past nuclear weapons production and a scientific basis for the long term stewardship of nuclear waste disposal. **All applications submitted in response to this FOA must explicitly state in the Executive Summary how the proposed research will advance DOE's environmental cleanup and stewardship missions.** Applicants should address the relevance and impact of their proposed research project to a broad scientific audience because all applications will be reviewed by an interdisciplinary panel as well as DOE staff with a wide range of technical backgrounds. DOE program managers will use all of this information as well as programmatic factors such as the balance among the program areas, research already in progress and risk-reward balance to make the final funding decisions.

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

### **1. Merit Review.**

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the “Office of Science Merit Review System for Financial Assistance.” This Merit Review System is available at <http://www.sc.doe.gov/grants/merit.asp>.

### **2. Selection.**

The Selection Official will consider the merit review evaluation, 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 part 600 and 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 6 months after the receipt of applications**. The time interval begins on the date applications are due or the date the application is received. It is anticipated that selections will be made in Fiscal Year 2012.

## **PART VI - AWARD ADMINISTRATION INFORMATION**

### **A. AWARD NOTICES.**

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

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.)

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 Part 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 and cooperative agreements made to universities, non-profits and other entities subject to Title 2 CFR the Award also includes the Research Terms and Conditions located at <http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp>

### **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 Part 605 (See: <http://ecfr.gpoaccess.gov>). Grants and cooperative agreements made to universities, non-profits and other entities subject to Title 2 CFR 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, Part 25 (See: <http://ecfr.gpoaccess.gov>). Prime awardees must keep their data at CCR current. 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, Part 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 CCR.

### **2. Special Terms and Conditions and National Policy Requirements.**

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at:

[http://management.energy.gov/business\\_doe/business\\_forms.htm](http://management.energy.gov/business_doe/business_forms.htm).

The National Policy Assurances to Be Incorporated As Award Terms are located at <http://www.nsf.gov/bfa/dias/policy rtc/appc.pdf>.

### **Intellectual Property Provisions.**

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at

[http://www.gc.energy.gov/financial\\_assistance\\_awards.htm](http://www.gc.energy.gov/financial_assistance_awards.htm).

## **C. REPORTING.**

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F4600.2, attached to the award agreement.

## PART VII - QUESTIONS/AGENCY CONTACTS

### A. QUESTIONS

Questions regarding the content of the FOA must be submitted through the FedConnect portal. You must register with FedConnect to respond as an interested party to submit questions, and to view responses to questions. It is recommended that you register as soon after release of the FOA as possible to have the benefit of all responses. More information is available at

[https://www.fedconnect.net/FedConnect/PublicPages/FedConnect\\_Ready\\_Set\\_Go.pdf](https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf).

DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

**Applications submitted through FedConnect will not be accepted.**

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

### B. AGENCY CONTACTS:

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

**Technical/Scientific Program Contacts:**

**Program Manager:** Dr. David Lesmes

**Phone:** (301) 903-2977

**E-mail:** [David.Lesmes@science.doe.gov](mailto:David.Lesmes@science.doe.gov)

## **PART 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 announcement 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 announcements. 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 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 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**

N/A