

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



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

**U. S. Department of Agriculture
Cooperative State Research, Education, and Extension Service**

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

Funding Opportunity Number: DE-PS02-09ER09-03

Announcement Type: Initial

CFDA Number: 81.049 & 10.206

ISSUE DATE: 11/12/2008

**Preapplication Due Date: 12/9/2008, 4:30 PM Eastern Time
(Preapplications are Required)**

Application Due Date: 02/18/2009, 8:00 PM Eastern Time

ATTENTION: APPLICATION PACKAGE UPDATE

(added 12/19/2008)

The Grants.gov scheduled transition from the PureEdge based application system to the Adobe Reader application system has been postponed. Therefore, the PureEdge Application Package has been attached to this Funding Opportunity Announcement in Grants.gov.

APPLICATION PACKAGE

Grants.gov is currently phasing out the use of the PureEdge software and transitioning to using Adobe Reader software. DOE will not begin using the Adobe forms until January 2009. As the closing date and time for this FOA is after the DOE transition date, an application package using the Adobe forms will not be posted at the time of FOA issuance.

Once DOE has transitioned to the Adobe forms, an amendment to the FOA will be posted to provide the Adobe forms. The information requested in Part 4, C of the FOA will not change with the use of the Adobe forms and does not preclude Applicants from working on the technical narrative and other required information identified in the FOA.

Note that Grants.gov requires Applicants to use the compatible version of Adobe Reader software to complete a Grants.gov Adobe application package. To ensure you have the Grants.gov compatible version of Adobe Reader, visit the download software page at http://www.grants.gov/help/download_software.jsp "

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). See <http://www.grants.gov/GetStarted>. 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).

MICROSOFT VISTA AND OFFICE 2007 COMPATIBILITY: Grants.gov is currently incompatible with both the new Microsoft (MS) Vista Operating System and the new Microsoft (MS) Office 2007 versions of Word, Excel and Power Point. In order to create and submit your application to Grants.gov, you must find a computer with a previous version Microsoft Operating System, such as Windows XP.

If you attach a file created using MS Office 2007, you will not get an error message when you submit the application, HOWEVER your entire application will not be able to be processed or accepted at Grants.gov and will not reach DOE. Grants.gov can accept applications with attachments created in MS Office 2007 if the attachments are saved in the prior format. See www.grants.gov/www.grants.gov/assets/Vista_and_office_07_Compatibility.pdf for detailed instructions on how to do this. A file created in MS Office 2007 can be identified by the "x" at the end of the file extension, for example "sample.docx" for a Word file. Contact Grants.gov at 1-800-518-4726 with any questions.

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. Part VII of this announcement 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 five e-mails. It is extremely important that the AOR watch for and save each of the e-mails. It may take up to two (2) business days from application submission to receipt of e-mail Number 2. When the AOR receives e-mail Number 5, it is their responsibility to follow the instructions in the e-mail to logon to IIPS and verify that

their application was received by DOE. The titles of the five 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

Number 5 – DOE e-Center Grant Application Received

The last e-mail will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last e-mail changes to:

Number 5 – DOE e-Center Grant Application Received and Matched

This e-mail will contain the direct link to the application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the application.

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PART I – FUNDING OPPORTUNITY DESCRIPTION

GENERAL INQUIRIES ABOUT THIS FOA SHOULD BE DIRECTED TO:

Technical/Scientific Contact:

SCbiomass.genomics@science.doe.gov

Agency Contacts:

Dr. Sharlene C. Weatherwax
U.S. Department of Energy
Office of Biological and Environmental Research
Phone: (301) 903-6165
Email: sharlene.weatherwax@science.doe.gov

Dr. Chavonda Jacobs-Young
United States Department of Agriculture
Cooperative State Research, Education, and Extension Service
Email: cjacobs@csrees.usda.gov

Dr. Ed Kaleikau
United States Department of Agriculture
Cooperative State Research, Education, and Extension Service
Email: ekaleikau@csrees.usda.gov

STATUTORY AUTHORITY

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

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
7 CFR Part 3430—CSREES procedures to implement Competitive and Noncompetitive Nonformula Grant Programs—General Grant Administrative Provisions and Program-Specific Administrative Provisions for the Specialty Crop Research Initiative

PLEASE NOTE: USDA funding is subject to the availability of appropriation to carry out the Agriculture and Food Research Initiative (AFRI) Competitive Grants Program. Cooperative State Research, Education, and Extension Service (CSREES) reserves the right to amend, delete, or otherwise alter its participation in this program.

SUMMARY:

The U.S. Department of Energy's Office of Science, Office of Biological and Environmental Research (OBER), and the U.S. Department of Agriculture (USDA), Cooperative State Research, Education, and Extension Service (CSREES), hereby announce their interest in receiving applications for genomics-based research that will lead to the improved use of biomass and plant feedstocks for the production of fuels such as ethanol or renewable chemical feedstocks. Specifically, applications are sought for fundamental research on plants that will improve biomass characteristics, biomass yield, or sustainability. Systems biology approaches to identify genetic indicators enabling plants to be efficiently bred or manipulated, or research that yields fundamental knowledge of the structure, function and organization of plant genomes leading to improved feedstock characterization and sustainability are also encouraged.

SUPPLEMENTARY INFORMATION:

Background:

Renewable energy from biomass has the potential to reduce or remove dependency on fossil fuels as well as reduce negative environmental impacts from emissions of greenhouse gases and toxic pollutants. Realizing this potential will require the simultaneous development of high yielding biomass production systems and bioconversion technologies that efficiently convert biomass energy into the forms of energy usable by industry. Most agricultural research to date has focused on enhancing the production of seeds, roots and tubers that are used for food and feed production. However, these improvements in food crops have frequently been directed towards increases in starch content with a corresponding reduction of lignocellulose accumulation. Research applications are solicited in the area of improved fundamental understanding of lignocellulosic accumulation and regulation that will lead to improved utilization of plant biomass for the production of fuels such as ethanol or renewable chemical feedstocks. This FOA continues a commitment, initiated in 2006, to conduct a fundamental research program in biomass genomics, to provide the scientific foundation to facilitate the use of lignocellulosic materials, either primary material or agricultural residues, for bioenergy and biofuels. The rationale for developing lignocellulosic crops for energy is that less intensive production techniques and poorer quality land can be used for these crops, thereby avoiding competition with food production on better quality land.

Significant advances in breeding, molecular genetics, and genomic technologies provide an opportunity to build upon the existing knowledgebase of plant biology to be able to confidently predict and manipulate their biological function for bioenergy resources. Specific areas of interest include:

- Elucidation of the regulation of gene networks, proteins and metabolites for manipulation of plant feedstocks for improved productivity and sustainability, and improved water use efficiency and nutrient utilization
- Elucidation of the regulation of gene networks, proteins and metabolites for advanced understanding of carbon partitioning and nutrient cycling in plant feedstocks.

- Comparative approaches to enhance fundamental knowledge of the structure, function, and organization of plant genomes leading to innovative strategies for feedstock characterization, breeding or manipulation.

The use or development of model biological systems is acceptable; however, a specific statement must be provided on the linkage of the model to current or future biomass energy crops. The use or augmentation of existing genomic information and resources is strongly encouraged; relevant plants for which preliminary genome information has been obtained at the DOE Joint Genome Institute include maize, poplar, sorghum, soybean, switchgrass, and Brachypodium.

Research that seeks to increase starch content for improved nutrient qualities or to facilitate the digestion and fermentation of starch to produce sugars and other bio-based products or biofuels is not the focus of this FOA. Also, research that seeks to increase grain yield or seed-oil production is not the focus of this FOA.

Projects that would primarily involve field demonstrations or testing or empirical screening for biomass quality characteristics **will not be** considered for funding. Projects **should not** request support for whole genome-scale sequencing; such requests should be submitted separately to the DOE Joint Genome Institute's Community Sequencing Program for an independent merit review (see information at <http://www.jgi.doe.gov/CSP/index.html>).

This FOA strongly encourages individual investigators as well as interdisciplinary teams that assemble a range of expertise into a coordinated approach; for the latter situation, applicants must include a clear plan describing the individual contributions of each participant, as well as the overall management scheme.

Information about the DOE Genomics:GTL data release policy, with which awardees will be expected to comply, is available at <http://genomicsgtl.energy.gov/datasharing/GTLDataPolicy.pdf>

Information about the program, including prior year award abstracts, is available at www.genomicsgtl.energy.gov/research/DOEUSDA/ .

Indirect Costs:

For DOE: Explain the basis for each overhead and indirect cost. Include the current rate.

For USDA: Section 7132 of the Food, Conservation, and Energy Act of 2008, amended the National Agriculture Research, Extension, and Teaching Policy Act of 1977 (7 U.S.C. 3310(a)), limiting indirect costs to 22 percent of the total Federal funds provided under each award. Therefore, when preparing budgets, applicants should limit their requests for recovery of indirect costs to the lesser of their institution's official negotiated indirect cost rate or the equivalent of 22 percent of total Federal funds awarded.

To accommodate USDA limit on indirect costs, applicants may be required at the time of award to submit a revised budget. Proposals selected for funding by USDA will be asked to comply with the USDA 22 percent limit on indirect cost rates.

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

Information on awards from prior years of this program may be viewed at:
www.genomicsgtl.energy.gov/research/DOEUSDA/.

Submission Information

The following is a list of essential items that an application must contain:

- 1.** The Cover Sheet SF-424 (R&R) - completed by appropriate officials.
- 2.** Research and Related Budget Page(s) (OMB Number: 4040-0001) using U.S. dollars, with supporting written justification sufficient to evaluate the costs of the proposed project. List and explain cost-sharing arrangements, if any. If the application is for a multi-year period, submit a cumulative budget and one budget page for each year of requested support.
- 3.** Research & Related Other Project Information
 - a.** Project Narrative: A detailed description of the proposed project, including the objectives of the project, its relationship to the Office of Science and CSREES programs and the applicant's plan for carrying it out. Use English only.
 - b.** Biographical Sketches: Detailed information about the background and experience of the principal investigator(s) including references to publications.
 - c.** Facilities and Resources: Include information on the experience of the applicant organization, its facilities and resources.
 - d.** Bibliography of Literature.
 - e.** Statement of all current and pending support for the project and all related projects, and description of support for all projects which involve the principal investigator(s) and the period of time and percent of time devoted to each project whether or not salary for the person involved is included in the budgets of the various projects.

In addition, for this FOA, applications must conform to the following requirements:

- f.** The Project Narrative comprises the research plan for the project and is limited, including text and figure legends, to **10 pages maximum** (8.5x11-inch pages of single-spaced, standard 11-point type with 1-inch margins pages), exclusive of attachments such as figures or references. 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.

g. Inclusion of an abstract or project summary on a separate page with the name of the applicant, mailing address, phone number, FAX number, and E-mail listed.

h. Inclusion of a Table of Contents.

i. Inclusion of signed letters of intent from collaborators (briefly describing the intended contribution of each to the research), and short curriculum vitas for the applicant, collaborators, and any co-PIs.

j. Inclusion of a Conflict of Interest Document (no page limit): This document should be provided in table or spreadsheet form only as an appendix to the full application at the time of submission. The document should consist of a list, in the form of a single **alphabetized** table, with the full names (Last name, first name, middle initial) of all people having a conflict of interest with any senior personnel (PI and Co-PIs) and any named personnel member whose salary is requested in the project budget. Conflicts to be identified are (1) Ph.D. thesis advisors or advisees, (2) collaborators or co-authors for the past 48 months, including postdoctoral advisors or advisees, and (3) any other individuals or organizations with which the investigator has financial ties (please specify type). Members of current Advisory Committees who receive reimbursement for travel or honoraria should be included in this last category.

k. Inclusion of a plan that describes how the project results or resources will be disseminated in a timely manner and in an accessible and usable form to the broader scientific community.

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT.

DOE anticipates awarding grants under this program announcement.

B. ESTIMATED FUNDING.

It is anticipated that up to \$4 million total will be available for multiple awards to be made in FY 2009 for the Plant Feedstock Genomics for Bioenergy: A Joint Research Funding Opportunity Announcement-USDA, DOE. 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. Applications 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; it is anticipated that this will reflect a long term commitment to improved use of primary feedstocks or residues for energy resources. Annual budgets are expected to range from \$100,000 to \$500,000 total costs. Neither DOE nor USDA is under any obligation to pay for any costs associated with the preparation or submission of an application. DOE and USDA reserve the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this Funding Opportunity Announcement.

It is anticipated that in FY 2009, USDA support for this Plant Feedstock Genomics for Bioenergy solicitation is subject to the availability of appropriations to carry out the AFRI program. The AFRI Competitive Grants Program is to provide funding for fundamental and applied research, extension, and education to address food and agricultural sciences.

C. MAXIMUM AND MINIMUM AWARD SIZE.

See B. Estimated Funding section above.

D. EXPECTED NUMBER OF AWARDS.

See B. Estimated Funding section above.

E. ANTICIPATED AWARD SIZE.

See B. Estimated Funding section above.

F. PERIOD OF PERFORMANCE.

See B. Estimated Funding section above.

G. TYPE OF APPLICATION.

DOE will accept new and renewal applications under this Announcement.

USDA will only accept new applications.

Renewal applications are requests for additional funding for a period subsequent to that provided by a current award. Renewal applications compete with all other applications and must be submitted by any established due date/deadline or at least six months before additional funding is required if there is no specified due date/deadline. In preparing a renewal application, applicants should assume that reviewers will not have access to previous applications. The application should be developed as fully as though the applicant were applying for the first time.

RENEWAL APPLICATION INSTRUCTIONS

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

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

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS.

DOE Eligibility Criteria: Applicants from U.S. Colleges and universities, non-profit organizations, for-profit commercial organizations, state and local governments, and unaffiliated individuals. Researchers from other Federal agencies are encouraged to submit a preapplication referencing this FOA DE-PS02-09ER09-03; if a formal proposal is encouraged, additional submission information will be provided.

USDA Eligibility Criteria: The source of USDA funds to support the Fiscal Year (FY) 2009 Plant Feedstock Genomics for Bioenergy Program is subject to the availability of appropriations to carry out the AFRI program, the Secretary may award grants to State agricultural experiment stations; colleges and universities; university research foundations; other research institutions and organizations; Federal agencies; national laboratories; private organizations or corporations; individuals; or any group consisting of two or more of the aforementioned entities. Applications from scientists at non-U.S. organizations will not be accepted. Award recipients may subcontract to organizations not eligible to apply, provided such organizations are necessary for the conduct of the project.

B. COST SHARING.

Cost sharing is not required.

C. 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 Application Package". Enter the CFDA and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package.

B. LETTER OF INTENT AND PREAPPLICATION.

1. Letter of Intent.

A Letter of Intent is not required.

2. Preapplication.

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

Potential applicants are **required** to submit a brief preapplication, referencing Funding Opportunity Announcement (FOA) DE-PS02-09ER09-03 for receipt by DOE by 4:30 p.m., Eastern Time, December 9, 2008. Preapplications will be reviewed for conformance with the guidelines presented in this FOA and suitability in the technical areas specified. A response to the preapplications encouraging or discouraging formal applications will be communicated to the applicants by January 6, 2008. Applicants who have not received a response regarding the status of their preapplication by this date are responsible for contacting the program to confirm this status.

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

Preapplications referencing Funding Opportunity Announcement DE-PS02-09ER09-03 should be sent as PDF file attachments via e-mail to: **SCbiomass.genomics@science.doe.gov** with "Preapplication DE-PS02-09ER09-03" as the subject. **No FAX or mail submission of preapplications will be accepted.**

Potential applicants **are required** to submit a brief preapplication that consists of a cover page **plus** two to three pages of narrative describing the research objectives, the technical approach(s), and the proposed team members and their roles. 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 the summary paragraph and in the SUPPLEMENTARY INFORMATION. The preapplication **must** identify, on the cover sheet, the title of the project, the institution or organization, principal investigator name, telephone number, fax number, and e-mail address. No

budget information or biographical data need be included, 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 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. To activate the instructions, turn on the “Help Mode” (Icon with the pointer and question mark at the top of the form). The list of certifications and assurances referenced in Field 18 can be found on the DOE Financial Assistance Forms Page at http://management.energy.gov/business_doe/business_forms.htm, under Certifications and Assurances.

2. RESEARCH AND RELATED Other Project Information.

Complete questions 1 through 5 and attach files. The files must comply with the following instructions:

Project Summary/Abstract (Field 6 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.”

Project Narrative (Field 7 on the Form).

The project narrative **must not exceed 10 pages** of technical information, including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right).

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.”

The first page of your narrative must include the following information (this page will not count in the project narrative page limitation):

Applicant/Institution:

Street Address/City/State/Zip:

Principal Investigator:

Address:

Telephone Number:

Email:

DOE/Office of Science Program Office: Biosystems Science Division

DOE/Office of Science Program Office Technical Contact: Dr. Sharlene Weatherwax

DOE Grant Number (if Renewal or Supplemental Application):

Is this a Collaboration? If yes, please list ALL Collaborating Institutions/Pis* and indicate which ones will also be submitting applications.

** Note that collaborating applications must be submitted separately.*

The narrative comprises the research plan for the project. Letters of intent from all non-funded collaborators and short curriculum vitae of all senior personnel must be included in the application. Applications not meeting these requirements will be deemed ineligible during the initial screening process. The major part of the narrative should be devoted to a description and justification of the proposed project, including details of the methods 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.

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.

Project Timetable:

This section should outline as a function of time, year by year, all the important activities or phases of the project, including any activities planned beyond the project period. Successful applicants must use this project timetable to report progress.

Project Performance Site:

Indicate the primary site where the work will be performed. If a portion of the work will be performed at any other sites, identify those sites, also.

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 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. 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. Save the information in a separate file and attach to the “Attach Current and Pending Support” field in each profile.

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. In order to reduce the number of files attached to your application, **please provide the Bibliography and References Cited information as an appendix to your project narrative. 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. In order to reduce the number of files attached to your application, **please provide the Facility and Other Resource information as an appendix to your project narrative. 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. In order to reduce the number of files attached to your application, **please provide the Equipment information as an appendix to your project narrative. 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 1-5 on the “Other Project Information” document, **please provide this information as an appendix to your project narrative. 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 8, 9, 10, and 11, 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 (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 announcement (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. 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:

Name of Document	Format	Attach to
SF 424 (R&R)	PDF	N/A
RESEARCH AND RELATED Other Project Information	PDF	N/A
Project Summary/Abstract	PDF	Field 6
Project Narrative, including required appendices	PDF	Field 7
RESEARCH & RELATED BUDGET	Form	N/A
Budget Justification	PDF	Field K

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS.

If selected for award, DOE and USDA 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 Due Date.

A Letter of Intent (LOI) is not required.

2. Preapplication Due Date.

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

Potential applicants are **required** to submit a brief preapplication, referencing Funding Opportunity Announcement (FOA) DE-PS02-09ER09-03 for receipt by DOE by 4:30 p.m., Eastern Time, December 9, 2008. Preapplications will be reviewed for conformance

with the guidelines presented in this FOA and suitability in the technical areas specified. A response to the preapplications encouraging or discouraging formal applications will be communicated to the applicants by January 6, 2009. Applicants who have not received a response regarding the status of their preapplication by this date are responsible for contacting the program to confirm this status.

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

Preapplications referencing Funding Opportunity Announcement DE-PS02-09ER09-03 should be sent as PDF file attachments via e-mail to:

SCbiomass.genomics@science.doe.gov with "Preapplication DE-PS02-09ER09-03" as the subject. **No FAX or mail submission of preapplications will be accepted.**

Potential applicants **are required** to submit a brief preapplication that consists of a cover page **plus** two to three pages of narrative describing the research objectives, the technical approach(s), and the proposed team members and their roles. 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 the summary paragraph and in the SUPPLEMENTARY INFORMATION. The preapplication **must** identify, on the cover sheet, the title of the project, the institution or organization, principal investigator name, telephone number, fax number, and e-mail address. No budget information or biographical data need be included, nor is an institutional endorsement necessary.

3. Formal Applications.

Formal applications submitted in response to this Funding Opportunity Announcement must be received by February 18, 2009, 8:00 p.m. Eastern time, to permit timely consideration of awards in Fiscal Year 2009. **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 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 Part 600 and 2 CFR 215. Recipients must obtain the prior approval of the awarding agency / 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 and USDA are 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.

You must COMPLETE the one-time registration process (all steps) before you can submit your first application through Grants.gov (See www.grants.gov/GetStarted). **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).

3. Application Receipt Notices.

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of five 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. When the AOR receives email Number 5, it is their responsibility to follow the instructions in the email to logon to IIPS and verify that their application was received by DOE. You will need the Submission Receipt Number (email Number 1) to track a submission. The titles of the five 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
- Number 5 – DOE e-Center Grant Application Received

The last email will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last email changes to:

Number 5 – DOE e-Center Grant Application Received and Matched

This email will contain the direct link to the application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the application.

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) to determine that (1) the applicant is eligible for the award; (2) the information required by the announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives of the funding opportunity announcement.

2. Merit Review Criteria.

Applications will be subjected to scientific merit review (peer review) and will be evaluated against the following evaluation criteria which are listed in descending order of importance codified at 10 CFR 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.

In addition to the above evaluation criteria, applications will also be evaluated on the robustness of the organizational framework and its coordination plan if a consortium is proposed.

The evaluation process will include program policy factors such as the relevance of the proposed research to the terms of the announcement and the agencies' programmatic needs. Note that external peer reviewers are selected with regard to both their scientific expertise and the absence of conflict-of-interest issues. Both Federal and non-Federal reviewers may be used, and submission of an application constitutes agreement that this is acceptable to the investigator(s) and the submitting institution.

DOE and USDA will make final funding decisions based on the results of the peer review and internal programmatic review. USDA agrees to abide by DOE's application review procedures. Applicants selected for funding may be required to provide additional information. The application will then be forwarded to the appropriate offices for funding in accordance with each agency's procedures. Awards may be given as cooperative agreements, or grants, at each agency's discretion. Proposals that USDA has agreed to fund will be sent to the agency for final negotiations and implementation of awards. Applicants selected for funding by USDA will be required to submit CSREES agency-specific forms prior to awarding of the grant. USDA funding is contingent upon Congressional action.

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 Part 605.10(d) 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.science.doe.gov/grants/merit.html>.

2. Selection.

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

3. Discussions and Award.

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR 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 8 months. The time interval begins on the date applications are due or the date the application is received, if there is no specified due date/deadline. Awards will be made in Fiscal Year 2009

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.

A Notice of Financial Assistance Award issued by the contracting officer is the authorizing award document. It normally includes, either as an attachment or by reference: 1. Special Terms and Conditions; 2. Applicable program regulations, if any; 3. Application as approved by DOE/NNSA; 4. DOE assistance regulations at 10 CFR Part 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 Part 600 and 10 CFR Part 605 (See: <http://ecfr.gpoaccess.gov>), except for grants made to Federal Demonstration Partnership (FDP) institutions. The FDP terms and conditions and DOE FDP agency specific terms and conditions are located on the National Science Foundation web site at http://www.nsf.gov/awards/managing/fed_dem_part.jsp.

2. Special Terms and Conditions and National Policy Requirements.

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. The National Policy Assurances to Be Incorporated As Award Terms are located at http://management.energy.gov/business_doe/business_forms.htm.

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.

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 announcement must be submitted through the “Submit Question” feature of the DOE Industry Interactive Procurement System (IIPS) at <http://e-center.doe.gov>. Locate the program announcement on IIPS and then click on the “Submit Question” button. Enter required information. You will receive an electronic notification that your question has been answered. 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.

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. DOE cannot answer these questions.

B. AGENCY CONTACT:

GENERAL INQUIRIES ABOUT THIS FOA SHOULD BE DIRECTED TO:

Technical/Scientific Contact:

SCbiomass.genomics@science.doe.gov

Agency Contacts:

Dr. Sharlene C. Weatherwax
U.S. Department of Energy
Office of Biological and Environmental Research
Phone: (301) 903-6165
Email: sharlene.weatherwax@science.doe.gov

Dr. Chavonda Jacobs-Young
United States Department of Agriculture
Cooperative State Research, Education, and Extension Service
Email: cjacobs@csrees.usda.gov

Dr. Ed Kaleikau
United States Department of Agriculture
Cooperative State Research, Education, and Extension Service
Email: ekaleikau@csrees.usda.gov

PART VIII - OTHER INFORMATION

A. MODIFICATIONS.

Notices of any modifications to this announcement will be posted on Grants.gov and the DOE Industry Interactive Procurement System (IIPS). You can receive an email when a modification or an announcement message is posted by joining the mailing list for this announcement through the link in IIPS. When you download the application at Grants.gov, you can also register to receive notifications of changes through Grants.gov.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE.

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement 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 announcement, 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.

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