



U.S. DEPARTMENT OF
ENERGY

Office of
Science

Informational Webinar

Urban Integrated Field Laboratories (Urban IFL) Funding Opportunity Announcement (FOA) DE-FOA-0002581

FOA Issue Date	March 23, 2022
Submission Deadline for Pre-Applications	April 19, 2022, at 5:00 PM Eastern Time A Pre-Application is required
Pre-Application Response Date	April 26, 2022
Submission Deadline for Applications	June 16, 2022, at 11:59 PM Eastern Time

March 30, 2022

Disclaimer: This presentation summarizes the contents of the FOA. Nothing in the webinar is intended to add to, take away from, or contradict any of the requirements in the FOA. If there are inconsistencies between the FOA and this presentation or statements from DOE personnel, the FOA is the controlling document.

Urban IFL Webinar Agenda & DOE Personnel

➤ Welcome and Introduction

- ▶ Geraldine Richmond, Under Secretary for Science and Innovation

➤ Overview of Biological and Environmental Research (BER) / Earth and Environmental Sciences (EESD)

- ▶ Sharlene Weatherwax, Associate Director for BER
- ▶ Gary Geernaert, Division Director, EESD

➤ Urban IFL FOA Introduction and Topics

- ▶ Jennifer Arrigo, Program Manager
- ▶ Sally McFarlane, Program Manager
- ▶ Bob Vallario, Program Manager

- Office of Grants and Cooperative Agreements (OGCA) - Helpful Reminders on the Application Process

- ▶ Warren Riley, Contracting Officer

- ▶ Michael Zarkin, SC Office of Grants and Contracts Support

➤ Q&A

➤ Where to Find More Information and Questions During the Webinar?

Please submit questions using the Zoom Q&A feature at any time during the webinar. It should be accessible at the bottom of your Zoom window.

If the Q&A feature is not available, you can use the chat box.

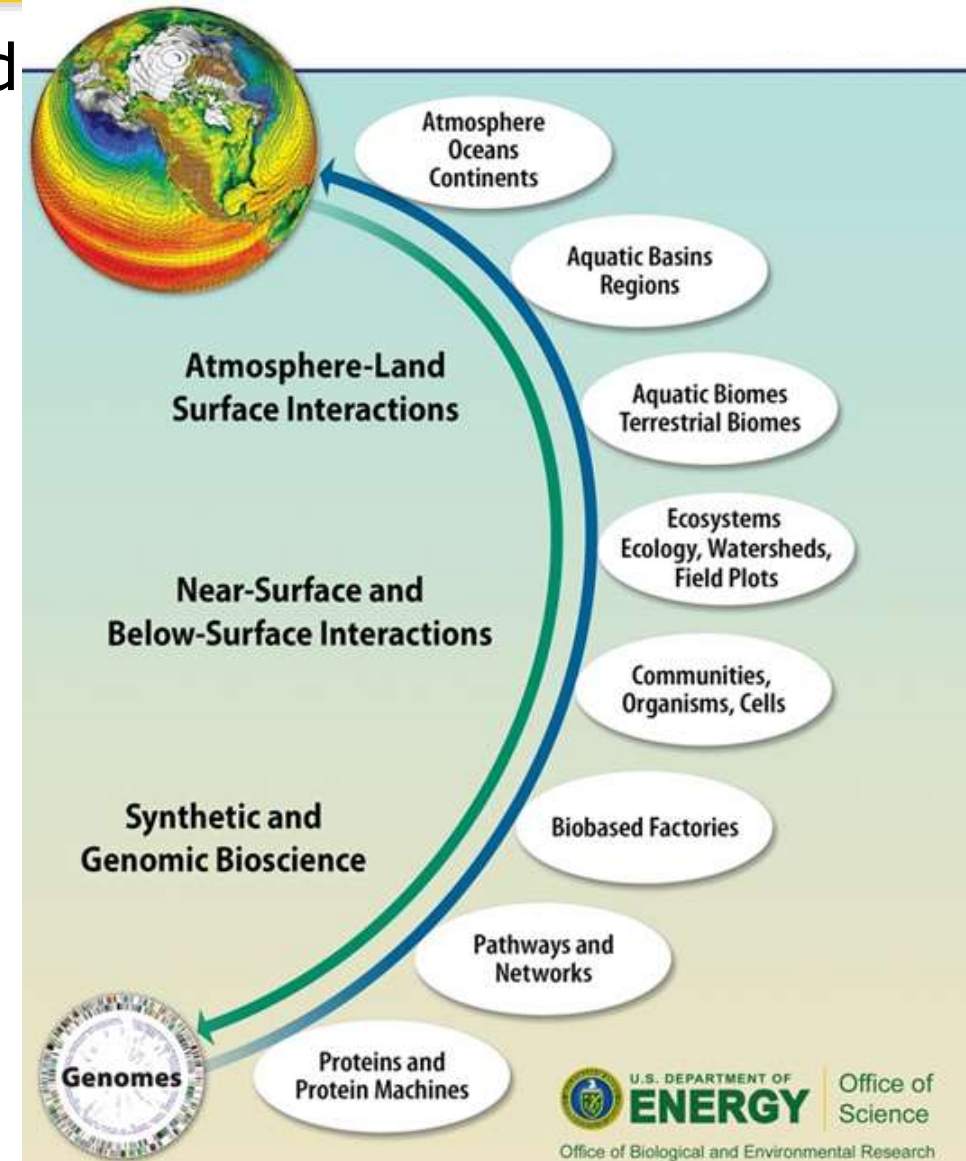
Biological and Environmental Research (BER)

Understanding complex biological, Earth, and environmental systems

Explore frontiers of genome-enabled biology

Understand physical and biogeochemical Earth system processes

Enable innovation and discovery through user facilities



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<https://science.osti.gov/ber>

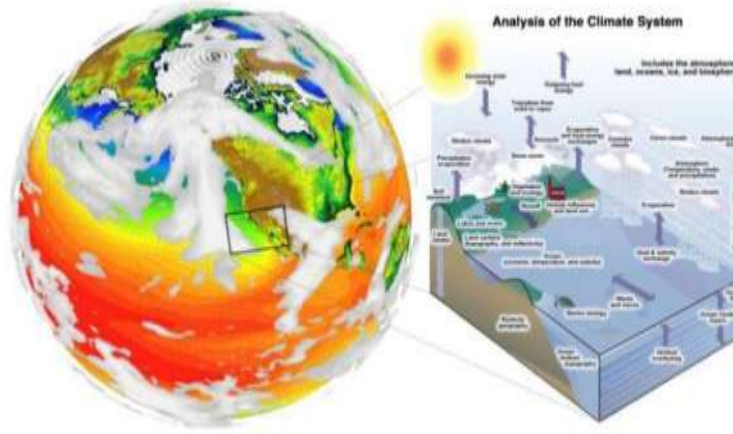
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Office of Biological and Environmental Research
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BER's Earth and Environmental Systems Sciences Division (EESSD)



Atmospheric Science

- Atmospheric Science
- Atmospheric Radiation Measurement (ARM) facility



Earth and Environmental Systems Modeling

- Climate and Earth System Modeling
- Climate resilience

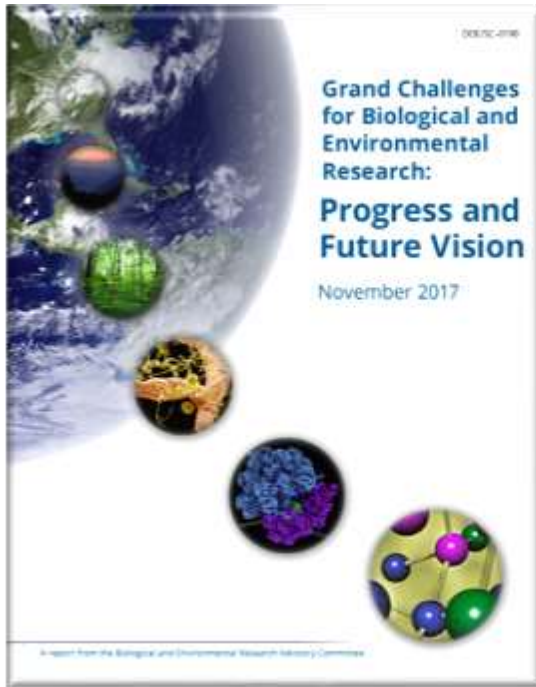


Environmental System Science

- Ecosystem and Watershed Sciences
- Environmental Molecular Sciences Laboratory (EMSL)

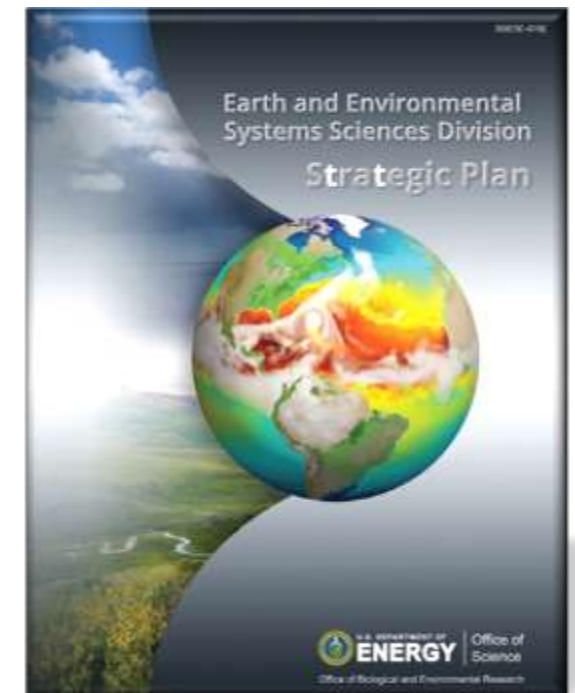
Data Management for Earth and Environmental Sciences

Developing the Urban IFL Concept



“Create **new integrated field laboratories** that target biogeochemical, energy, and water flows between urban areas and surrounding ecosystems.” (EESS Action Item, p. 6)

Research Need and Knowledge Gap: **Improve Human-Earth System Modeling Capabilities:** “human-Earth interactions at fine scales such as processes in urban population centers ...are not well represented in the current generation of models” (p.42)



**References and links to these (and other) reports available in the FOA text*

“the intellectual home for fundamental research [on] the **interactions** and **interdependencies** of the atmospheric, terrestrial, subsurface, cryospheric, oceanic, and human-energy components of the Earth system.” (exec summary, p.iv)

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Urban IFL FOA – Summary (Sec 1 of the FOA)

- ▶ **Urban Integrated Field Laboratories (Urban IFLs)** will improve our understanding of climate and environmental predictability across complex and variable urban regions.
- ▶ The Urban IFLs will necessarily involve **diverse scientific disciplines** to develop comprehensive projects including **field observations, data assimilation, modeling, and model-data fusion**, to **inform equitable solutions** based on state-of-the-art **uncertainty quantification and data analytics**.
- ▶ For the purposes of this FOA, **urban regions are densely populated areas**, encompassing **interdependent environmental, ecological, infrastructure, and human components**.
- ▶ Urban regions of interest for this FOA are in **climate-sensitive locations** and are **highly heterogeneous**...particularly when that **heterogeneity relates to impacts on disadvantaged communities**.
- ▶ While **multiple IFLs may be selected in response to this FOA**...each of the selected IFLs will **represent different aspects of understanding urban systems**, (e.g. diverse demographic characteristics; differing climate-induced pressures on people and infrastructures; and unique geographic settings)

Defining Attributes (Sec 1 of the FOA)

- ▶ An Urban IFL must be focused on an urban region within the United States or one of its territories
- ▶ The Urban IFL emphasizes the basic sciences of climate, environmental, ecological, and urban change affecting heterogeneous urban regions, yet with a view towards informing sustainable, resilient, and equitable solutions.
- ▶ The proposed urban region is unique yet exhibits some climatic, demographic, or other similarities to other US urban regions
 - ▶ Other similar urban regions will be able to learn from science success stories from the urban region that contains an IFL.

Defining Attributes, Cont. (Sec 1 of the FOA)

- ▶ The Urban IFL research combines new observations with high resolution and highly detailed urban modeling, where data generated by observations and models are used for scientific analysis.
 - ▶ While the new observations will be expected ...the applicants will also be encouraged to leverage ...existing observations and observing networks, including crowd-sourced information.
 - ▶ The modeling component must be at a high enough resolution and detail to adequately represent distinguishing features and changing dimensions of heterogeneous communities across the urban region. The modeling component must furthermore be capable of being nested within and/or forced by a regional to global climate system model.
- ▶ The IFL provides opportunities to inspire, train, and support leading scientists from a variety of institutions, including minority-serving institutions, who have an appreciation for the global climate and energy challenges of the 21st century.

Research Focus Areas(See Sec. I of the FOA)

- ▶ The Urban IFL science plan includes significant research efforts addressing all three required Research Focus Areas and integrates knowledge and effort across them.
 - 1. Spatial variabilities across the greater urban regions and how the variabilities exert influences on local micro-climates and micro-environments affecting urban communities.**
 - 2. Observing and modeling biogeochemical cycling and atmospheric composition in urban systems.**
 - 3. Towards quantifying the benefits of equitable solutions that are applied to heterogeneous urban regions in addressing the climate crisis.**

Research Focus Areas Details (Sec 1 of the FOA)

- ▶ An Urban IFL must have significant research efforts addressing multiple science themes and is expected to be structured around the three specific Research Focus Areas (RFA).
- ▶ All three RFAs must be explicitly addressed in an Urban IFL, though it not expected that the proportion of effort in each RFA be equal.
- ▶ Each RFA is listed with representative supporting questions that would be responsive to the FOA. These questions are intended to be examples only. The intent of the program is to allow for maximum flexibility for Urban IFLs to identify, define, and address questions relevant to the three required RFA.

Teaming Arrangements/ Management

- ▶ The scope and complexity of the IFLs will require multi-disciplinary teams. An Urban IFL will be required to be a multi-institutional team.
- ▶ Locally based and minority serving institutions (MSI) are expected to have significant roles in each Urban IFL management team, either as a lead organization or as a key team member.
- ▶ An Urban IFL research team should be comprised of diverse institutions, which could include DOE/NNSA National Laboratories, academic and non-profit research institutions, other federal agencies, and/or the private sector. The total combined project funding for DOE/NNSA National Laboratories must not exceed 60% of the total funding.
- ▶ The lead organization must be an academic institution or a National Laboratory. The lead organization must perform an equal or greater portion of the scientific and technical work than any other team member and should receive no more than 50% of the total funding.
- ▶ At least one member of the management team must have in depth local knowledge of the diverse urban communities of interest and their needs for climate solutions.
- ▶ The management team is structured to accurately reflect and represent the diversity of institutions participating in the Urban IFL.

Infrastructure and Operations

- ▶ Urban IFLs are expected to bring together observations with detailed high resolution urban modeling.
- ▶ Urban IFLs are expected to develop new observational and modeling capabilities tailored to meet their specific research goals
- ▶ They are encouraged, as appropriate:
 - ▶ to use and potentially contribute to the improvement of the hierarchy of models available to and developed by BER across its relevant programs
 - ▶ to exploit data from existing BER observational capabilities such as the AmeriFlux network or Atmospheric Radiation Management (ARM) user facility
 - ▶ to capitalize on extensive data management holdings and advanced analysis capabilities.
- ▶ Applicants are also expected to outline computational needs and describe their provisioning strategy along with any dependencies/uncertainties and associated contingency options.
- ▶ Urban IFLs will need to address the significant logistical and scientific challenges of high quality observing in an urban environment, and applications should include plans that demonstrate an ability to execute proposed field observations.

Applying to the Urban IFL Solicitation

- ▶ Program Managers:
 - ▶ Jennifer Arrigo, Jennifer.Arrigo@science.doe.gov (ESS)
 - ▶ Sally McFarlane, Sally.McFarlane@science.doe.gov (ASR/ARM)
 - ▶ Robert Vallario, Bob.Vallario@science.doe.gov (EESM)
- ▶ Pre-Application Deadline: Tues. April 19, 2022, at **5:00PM ET**
 - ▶ limited to one pre-application as lead institution.
 - ▶ The pre-application must be submitted electronically through the DOE SC Portfolio Analysis and Management System (PAMS) website <https://pamspublic.science.energy.gov/>.
 - ▶ Read/follow instructions carefully (Section IV. B)
 - ▶ Pre-applications will be reviewed for responsiveness of the proposed work to the research topics identified in this FOA. Applicants will receive a response from DOE by April 26, 2022 (11:59PM ET)
- ▶ Application Deadline: Thursday, June 16, 2022 at **11:59PM ET**
 - ▶ Only Encouraged pre-applications may submit full applications
 - ▶ Applications must be submitted <https://www.Grants.gov>
- ▶ Merit Review Criteria will be used to evaluate applications (Section V)
- ▶ Program Policy Factors (Section V) will be used to prioritize funding recommendations
- ▶ DOE anticipates that award selection will be completed by August 2022 and that awards will be made in Fiscal Year 2022.

Award Information

- ▶ **Estimated funding:** DOE anticipates that, subject to the availability of future year appropriations, a total of up to \$85 million in current and future fiscal year funds will be used to support awards under this FOA.
- ▶ **Period of performance:** DOE anticipates making awards with a project period of 5 years
- ▶ **Maximum/minimum award size:** DOE anticipates that award sizes will range from \$2,000,000 per year to \$5,000,000 per year.
- ▶ **Expected number of awards:** Approximately 3 to 5 awards are expected. The exact number of awards will depend on the number of meritorious applications and the availability of appropriated funds.
- ▶ **Types of award instruments:** DOE anticipates awarding grants, cooperative agreements, interagency agreements, and/or National Laboratory authorizations under this FOA.grants, cooperative agreements, interagency agreements, and/or National Laboratory authorizations under this FOA.
- ▶ **Multi-institution:** DOE will consider funding multi-institution teams submitted as **collaborative applications***, in which each institution must submit its own application with an identical common research narrative, under this FOA. Multi-institutional teams may also apply using **a prime and subaward*** with one application submitted by the lead institution.

*Multi-institution teams that include Federally affiliated entities must adhere to eligibility standards in Sec III

Eligibility

- ▶ Eligible Applicants: All* types of domestic entities, including for example, universities/colleges, non-profit organizations, for profit organizations, (see Sec. III of the FOA)
- ▶ The lead organization must be an academic institution or a DOE/NNSA National Laboratory.
 - ▶ DOE/NNSA National Laboratories are eligible to submit applications and may be proposed as subrecipients under another organization's application.
 - ▶ Non-DOE/NNSA FFRDCs are eligible to submit applications but are not eligible to be proposed as lead in a collaborative application or as subrecipients under another organization's application.
 - ▶ Other Federal Agencies are eligible to submit applications under this FOA but are not eligible to be proposed as lead in a collaborative application or as subrecipients under another organization's application.
- ▶ Applicant institutions are limited to no more than one letter of intent, pre-application, or application as lead institution.
- ▶ Institutions, as team members and not leads, may be included on multiple applications.
- ▶ The PI on a pre-application or application may also be listed as a senior or key personnel on separate submissions without limitation.

Office of Grants and Cooperative Agreements (OGCA)

- ▶ Serves as the Office of Science (SC) Financial Assistance Center of Excellence
- ▶ Performs cradle-to-grave services: solicits, reviews, negotiates, awards, administers and closes out financial assistance agreements (grants and cooperative agreements)
- ▶ Provides senior-level advice and guidance in matters of financial assistance
- ▶ Processes over 4,000 financial assistance actions (approximately \$1.3B) each year

Mission: *The Office of Grants and Cooperative Agreements (OGCA) serves as the SC Financial Assistance Center of Excellence performing cradle-to-grave services for SC and other DOE program offices. The OGCA solicits, reviews, selects, negotiates, awards, administers and closes out financial assistance agreements (grants and cooperative agreements) including those for SC's Research Financial Assistance Program, DOE's Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) programs, other first-of-a-kind financial assistance efforts in pursuit of transformative science, and other financial assistance actions, as necessary.*

Helpful Reminders for a Successful Application

REGISTER IN ALL SYSTEMS AS SOON AS POSSIBLE:

- ▶ www.grants.gov

Support: 800-518-4726 or support@grants.gov

- ▶ www.sam.gov

Support: 866-606-8220

- ▶ www.fedconnect.net

Support: 800-899-6665

- ▶ DOE SC Portfolio Analysis and Management System (PAMS) -
<https://pamspublic.science.energy.gov>

Support: 855-818-1846 or sc.pams-helpdesk@science.doe.gov

- ▶ Any Other Applicable Systems

Helpful Reminders for a Successful Application

► CHECKLIST FOR AVOIDING COMMON ERRORS: SEE PAGE IV OF THE FOA

Item	Issue
Page Limits	Strictly followed throughout application, including particular attention to: <ul style="list-style-type: none">- Research Narrative- Appendix 2 Narrative, if any- Biographical sketches- Data Management Plan(s) (DMPs)- Letter(s) of Recommendation, if any
Personally Identifiable Information	None present in the application
Research Narrative	Composed of one PDF file including all appendices
Project Summary / Abstract	Name(s) of applicant, PI(s), PI's institutional affiliation(s), Co-Investigator(s), Co-Investigator's institutional affiliation(s)
DOE Title Page	Follow instructions closely
Budget	Use current negotiated indirect cost and fringe benefit rates
Budget Justification (attached to budget)	Justify all requested costs
Biographical Sketches	Follow page limits strictly and do not include list of collaborators
Current and Pending Support	Ensure complete listing of all activities, regardless of source of funding
List of Individuals who Should not Serve as Merit Reviews	Provided as separate file in application
Data Management Plan (DMP)	Include a DMP even if no experimental data is expected

Helpful Reminders for a Successful Application

- ▶ **Summary of Required Forms/Files** - Your application must include the following items:

Name of Document	Format	Attach to
SF 424 (R&R)	Form	N/A
RESEARCH AND RELATED Other Project Information	Form	N/A
Project Summary/Abstract	PDF	Field 7
Project Narrative, including required appendices	PDF	Field 8
Identification of Merit Review Conflicts	File	Field 12
RESEARCH & RELATED BUDGET	Form	N/A
Budget Justification	PDF	Field L
R&R SUBAWARD BUDGET ATTACHMENT(S) FORM (if applicable)	Form	N/A
Subaward Budget Justification (if applicable)	PDF	Field L of the subaward budget
PROJECT/PERFORMANCE SITE LOCATION(S)	Form	N/A
SF-LLL Disclosure of Lobbying Activities, if applicable	Form	N/A

See Section IV.D.8 of FOA

- ▶ If selected for award, DOE reserves the right to request additional or clarifying information

Helpful Reminders for a Successful Application

BUDGET JUSTIFICATION (FIELD L ON THE FORM)

See Section IV.D.3 of FOA

- ▶ Provide a justification that explains all costs proposed in the budget.
- ▶ Provide the details of all personnel (key or other) who will be working on the award, regardless of their source(s) of compensation. Explain their source(s) of compensation if it is not from this award.
- ▶ Provide any other information you wish to submit to justify your budget request.
- ▶ Provide a separate R&R budget and budget justification for each subrecipient.
- ▶ Include the indirect cost rate agreement as a part of the budget justification.

Concerns/Issues Specialists Usually Encounter

- ▶ Budget and Budget Justification are inconsistent
- ▶ Equipment - >\$5000
- ▶ Material & Supplies - <\$5000
- ▶ Fringe/Indirect Rates are unsupported
- ▶ Travel - Include purpose, destination, dates of travel (if known) and number of individuals for each trip. If the dates of travel are not known, specify estimated length of trip (e.g., 3 days).

After Merit Review of Application

- ▶ **Selected Applicants Notification:** DOE will notify applicant institutions selected for award. This notice of selection is not an authorization to begin performance.
- ▶ **Non-selected Notification:** Organizations whose applications are not selected will be advised as promptly as possible via an email from PAMS. The email will include instructions for accessing the reviews. Please contact the Program Manager if you have questions about the declination.
- ▶ **Requisition Package:** OGCA receives a requisition package to negotiate an award(s) within established procurement action lead times (PALT).

Pre-Award and Negotiations:

- ▶ Specialist reviews application package, including budget and budget justification
- ▶ Specialist conducts a budget review or cost analysis to determine allowability, allocability, and reasonableness of proposed costs
- ▶ Specialist may need/request additional information from proposed recipient
- ▶ Specialist makes an affirmative determination regarding recipient's responsibility, including ability to manage and properly segregate costs by projects
- ▶ Award may require local staffing reviews and HQ approvals (based on nature of work, any custom award terms, and/or award dollar amount)

Notice of Award

- ▶ An Assistance Agreement issued by the DOE Contracting Officer is the authorizing award document.

The grant normally includes, either as an attachment or by reference, the following items:

- (1) Special Terms and Conditions,
- (2) Intellectual Property Provisions,
- (3) Federal Assistance Reporting Checklist and Instructions,
- (4) Budget Pages,
- (5) The Research Terms and Conditions, available at https://www.nsf.gov/pubs/policydocs/rtc/rtcoverlay_march17.pdf, and DOE Agency Specific Requirements, available at <https://www.nsf.gov/awards/managing/rtc.jsp>,
- (6) By Reference: Program Regulation, 10 CFR 605 at <http://www.eCFR.gov>; DOE Regulations 2 CFR 200 as amended by 2 CFR 910 at <https://www.ecfr.gov/>; application/proposal as approved by DOE; and National Policy Assurances to Be Incorporated as Award Terms in effect on the date of award at <https://www.nsf.gov/awards/managing/rtc.jsp>

- ▶ The OGCA anticipate holding a Post Award Conference with award recipients – Date TBD

Questions & Answers

Please submit questions using the Zoom Q&A feature. It should be accessible at the bottom of your Zoom window.

If your question is not answered today, or if you have additional questions:

Questions about the topic → Program Manager(s)

Jennifer.Arrigo@science.doe.gov Sally.McFarlane@science.doe.gov

Bob.Vallario@science.doe.gov

Questions about submitting application → [FedConnect.net](https://www.fedconnect.net)

Issues with Grants.gov → Grants.gov Support@grants.gov

Where to find more information

Biological and Environmental Research (BER)

<https://science.osti.gov/ber>

Earth and Environmental Systems Sciences
Division (EESD)

<https://science.osti.gov/ber/Research/eessd>

Atmospheric System Research (ASR)

<https://science.osti.gov/ber/Research/eessd/Atmospheric-System-Research-Program>

Environmental System Science (ESS)

<https://science.osti.gov/ber/Research/eessd/ess>

Earth and Environmental System Modeling
(EESM)

<https://science.osti.gov/ber/Research/eessd/Earth-and-Environmental-System-Modeling>

Data Management

<https://science.osti.gov/ber/Research/eessd/Data-Management>

Atmospheric Radiation Measurement (ARM) user
facility

<https://science.osti.gov/ber/Research/eessd/ARM-Research-Facility>

Environmental Molecular Sciences Laboratory
(EMSL)

<https://science.osti.gov/ber/Research/eessd/Environmental-Molecular-Sciences-Laboratory>

BER Funding Opportunities

<https://science.osti.gov/ber/Funding-Opportunities>



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