



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.

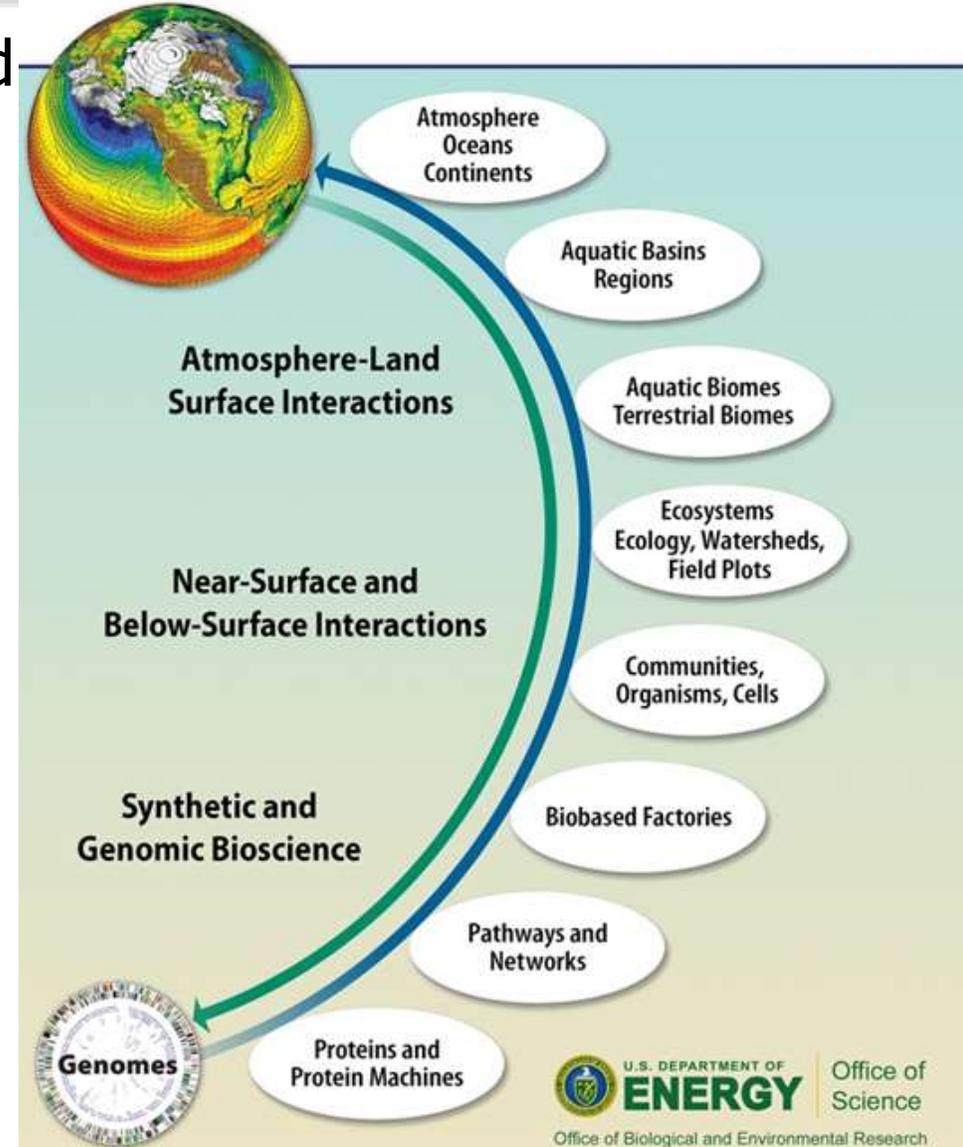
Biological and Environmental Research (BER)

Understanding complex biological, Earth, and environmental systems

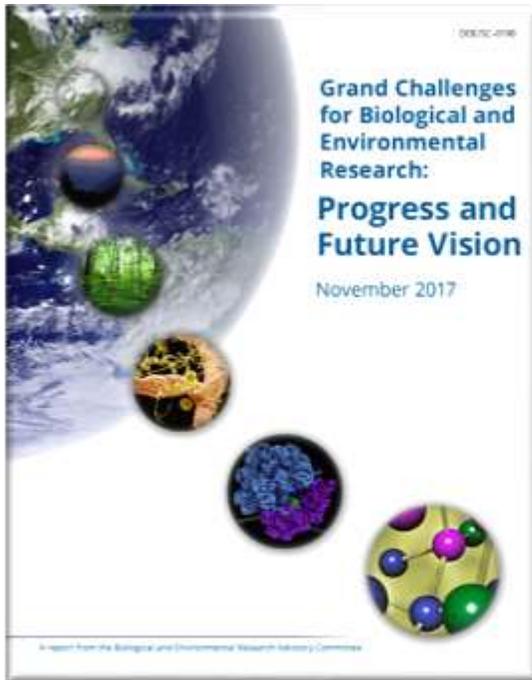
Explore frontiers of genome-enabled biology

Understand physical and biogeochemical Earth system processes

Enable innovation and discovery through user facilities

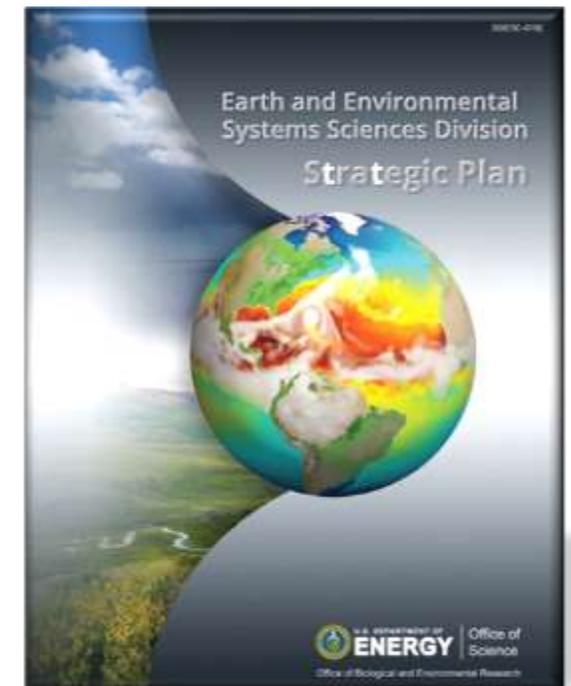


Developing the Urban IFL Concept



“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)

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

Scientific/Technical Contacts:



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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 (EESSD)

<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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Urban Integrated Field Laboratories (Urban IFL)
Funding Opportunity Announcement (FOA) DE-FOA-0002581
Frequently Asked Questions (FAQs)

Note: This document contains answers to common questions received about the Urban IFL FOA. BER held an informational webinar on Wednesday, March 30, 2022 on this FOA. The presentation slides for the webinar are also available – please see <https://science.osti.gov/ber/Funding-Opportunities>.

FAQ Categories

Programmatic	1
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Programmatic

1. Will this be an annual or repeating FOA? What is the long-term outlook after the initial 5 years?

A: The long-term outlook for the Urban IFLs and any additional FOAs will depend on Administration priorities and Congressional appropriations. Check back regularly for new FOAs through <https://science.osti.gov/ber/Funding-Opportunities>.

2. How does this FOA relate to work other agencies, especially NOAA, are doing in urban research? What role will other agencies play?

A: While both DOE and NOAA have a common interest in urban systems, the DOE approach introduces 'energy' as a common theme. Applicants will be required to take a systems approach, leverage DOE assets as appropriate, and explore ways to evaluate how interventions in urban systems can measurably mitigate urban, regional, and larger scale climate change. Disadvantaged

communities are of particular interest to DOE and this FOA. NOAA scientists are eligible to be team members on applications.

Institutions, teaming arrangements, and eligibility

3. Should the lead PI's institution be an academic institution? Are public/private partnerships allowed?

A: The lead PI's institution must be either an academic institution or a DOE/NNSA National Laboratory. All forms of domestic applications are eligible, with the exception of non-profit organizations that engage in lobbying activities, as noted in Section III of the FOA.

4. How does DOE define "institution" for the purposes of the limits on submissions? If a university has several campuses, would DOE consider each campus a separate institution?

A: We treat each campus as its own institution, even when they operate under a unified system leadership or with a common financial office.

5. Is international collaboration allowed, or must all institutions be U.S. based?

A: Only domestic organizations may lead an application, and all MSIs are domestic. International organizations may be part of the team as a subrecipient on a domestic lead's application.

6. Is DOE prioritizing applications that include DOE National Laboratories?

A: DOE will be assessing each application based on the merits of the research and the capacity of the researchers to achieve the stated goals. We expect that the quality of the applications and the merit review comments will impact the number of selections made to either Universities or National Laboratories. Including a DOE National Laboratory will not give an application priority consideration.

7. Can an application involve more than one DOE National Laboratory?

A: Yes, so long as the budgetary and other requirements as outlined in the FOA are followed.

8. Can I / my institution submit applications for more than one Urban IFL?

A: A PI and/or institution may only lead one application but may participate in applications by other teams.

9. How does DOE define a Minority Serving Institution (MSI) for the purpose of this FOA?

A: We use the Department of Education eligibility matrix, with institutions eligible for MSI funding being considered MSIs.

<https://www2.ed.gov/about/offices/list/ope/ides/2021eligibilitymatrix.xlsx>.

10. What role should MSIs have in an Urban IFL?

A: We require substantial involvement from all team members (teaming institutions), including MSIs. MSIs must have a significant role in any Urban IFL. MSIs may be the lead institution on an application, but this is not required.

Funding and budgets

11. Whom do I contact for funding and budget questions?

A: You can contact any of the technical/scientific program contacts listed on the front page of the FOA.

12. Is cost sharing allowed?

A: Cost sharing is not required for basic and fundamental research according to an authorized exemption from the requirements of the Energy Policy Act of 2005. Any voluntary cost sharing may be detailed in the budget justification, but it is not required. Cost sharing will not be considered during the merit review of applications. Any voluntary cost sharing should be structured so that it does not put the overall project at risk.

13. Do the funding allocations for non-profit, other agencies, private sector institutions count toward the DOE/NNSA lab budget cap of 60%? If so, are private and non-profit entities able to be subrecipients under universities?

A: The 60% cap applies only to funding that is ultimately allocated to National Labs; funds that are distributed by a National Lab to other organizations via subawards are not part of that cap. If the funding ultimately received by other organizations, including nonprofits, other agencies, private sector organizations,

and universities total 41% of the total project budget, (either through collaborative applications or as subrecipients), the team will meet the requirements. Private and non-profit research institutions are eligible to be subrecipients to a lead applicant, regardless of whether that applicant is a DOE National Lab or an academic institution.

14. Are there any funding limits for instruments?

A: No, but all costs must be reasonable, allowable, and allocable. An application focused mostly or entirely on instrumentation may fall short of the other objectives of this FOA.

15. What is the budget limit per proposal?

A: Each application has a cap of \$5 million per year, with an anticipated 5-year award duration.

16. For the pre-application, does the estimated budget need to be detailed by institution or by individual investigator?

A: The break-down should be by institution, though you may choose to break it down in greater granularity.

Facilities, instruments, and capabilities

17. Does it help or hurt my application if I propose to use existing capabilities or facilities (e.g., infrastructure, existing investments, sites, models, instruments, partners, projects)?

A: The FOA encourages applicants to leverage existing research infrastructure, observations, and models, as appropriate. Existing capabilities that you can leverage will be considered in our reviews and it is our hope that you will capitalize on your strengths, as appropriate, in your applications. IFLs can propose new observations or use already existing short term field deployments or longer-term observations.

18. Can I use funding from this FOA to develop new instruments?

A: New instrument development is not prohibited but is not a primary focus of the FOA.

19. Can my application request the use of DOE facilities, such as ARM?

A: Requests for use of ARM or other BER facilities must be proposed through the facility process and timelines. Urban IFLs may propose analysis of existing ARM data from any past ARM field campaign/deployment or from any ARM field campaign that has already been approved by ARM at the time of submitting the Urban IFL proposal to this FOA. Urban IFLs may discuss plans to submit proposals to deploy ARM observational capabilities such as the ARM Mobile Facility to the urban region of interest if their IFL is selected, and how these potential ARM deployments would contribute to the science of their IFL. However, since any new proposals to use the facilities would not be approved by the time of the review of the urban IFL proposals, urban IFLs should have contingency plans for how their research goals could be met if their ARM facility proposal were not selected for support.

Pre-applications

20. Will I receive feedback on my pre-application?

A: The only response will be whether a full application is encouraged or not encouraged. We can't provide individual feedback to applicants.

21. How many pre-applications will be invited for full application submission?

A: There is no predetermined number or limit of encouraged preapplications. We assess each preapplication individually for responsiveness to the FOA and encourage all eligible and responsive proposals for full application submission.

22. Are there allowed to be differences between the preapplication and full proposal? For example, can collaborating institutions/individuals change, or can certain content such as budget or research design change?

A: Lead institution and lead PI cannot change from pre- to full application. Teaming arrangements (including budgets) can change if needed, but we ask you to reach out to the program manager if you plan to make those changes between pre- and full application. Main themes should not drastically change, but details may change. When in doubt, reach out to the program managers.

23. What is the page limit of the pre-application? Is there a template?

A: The page limit is 4 pages. There is no template, but the FOA does discuss the information that the pre-application must include, and does contain formatting

guidelines. Please see the instructions in the FOA document and make sure to follow all requirements exactly or risk having the preapplication rejected.

24. Are references included in the 4 page limit of the pre-application?

A: References are not required or expected in the pre-application.

25. Can those participating in different proposals use similar ideas from proposal to proposal?

A: Similar applications may be submitted, but we will not fund duplicative applications, including those with largely duplicative ideas, design, collection of components, and/or team members.

Geographic scope

26. What is considered “urban” for the purposes of the FOA?

A: From the FOA: “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, i.e., having uneven distribution of physical landforms and vegetation, environmental processes, the built environment and infrastructure, population density, and socioeconomic clustering in the urban landscape, particularly when that heterogeneity relates to impacts on disadvantaged communities.”

27. Where should the boundaries be for an “urban region?” Could there be multiple urban centers within a single IFL project?

A: It is expected that each urban IFL will focus on a single urban region. As stated in the FOA, "Applications must be multi-institutional and focus on the development of a single IFL. While multiple IFLs may be selected in response to this FOA, considered together, each of the selected IFLs will represent different aspects of understanding urban systems, potentially including diverse demographic characteristics; differing climate-induced pressures on people and infrastructures; and unique geographic settings."

28. Should urban IFLs focus more on major urban center, surrounding areas, or both?

A: This should be defined by your science questions; we did not specifically define the extent of the urban areas. It is important that urban IFL focuses on

urban centers, but if there are important interactions and system-level questions between urban centers and surrounding communities, particularly as it relates to impacts, those are certainly within scope of the urban IFL FOA.

29. Will the priority be for cities with DOE National Labs? What if our region doesn't have a National Lab?

A: No. The priorities are urban areas in climate sensitive regions, highly heterogenous regions, and that have relevant impacts on communities. We do not define priorities for certain cities or locations.

30. Must a lead institution be local to the Urban IFL region being proposed? What if my university is not in an urban location?

A: Universities that are not in urban locations are still able to lead an application. There is a requirement that the Urban IFL team contains locally-based team member(s), but the lead does not have to be local to the Urban IFL region being proposed.

Research/ topic relevance

31. Does [topic area] fit the FOA?

A: Research must fit within BER's Earth and Environmental Systems Sciences Division (EESDD) research scope and fit the RFAs (research focus areas). DOE cannot provide feedback on individual ideas or research topics during an open solicitation.

32. What disciplinary expertise should be included on an urban IFL team?

A: We do not have a list of included/excluded disciplines for the urban IFLs. We are looking to the community to define the proper teams to answer the relevant science questions.

33. Should there or could there be a stronger weight on one research focus area (RFA) than other ones?

A: We require aspects of all the RFAs to be present, but there can be a stronger research focus on one or more of the RFAs. The selection criteria does not place stronger weight on any of the RFAs.

34. To what extent do the three research focus areas need to be integrated, or can they operate independently from one another?

A: DOE places great emphasis on integrative systems-level science, so the more the integration within the application the better.

**35. To what extent can topics regarding human health (e.g., air quality) be explored?
Can we have environmental health researchers and epidemiologists on our team?**

A: Research must fit into the EESSD research scope and fit the RFAs (research focus areas). Impacts to human health may be included to address the equitable solutions component of the FOA, but the science research emphasis should focus on the scope of EESSD research. We do not have a list of included/excluded disciplines for the urban IFLs, we are looking to the community to define the proper teams to answer the relevant science questions.

36. Would qualitative data collecting, or other social science methods be appropriate or encouraged?

A: Applicants should propose the type of observations they think are necessary to address their science objectives, with the goal of assuring that the overall application fits into the EESSD research scope and the RFAs (research focus areas).

37. Can the team include key personnel who are well versed in social sciences or provide human-informed data science?

A: Yes, we expect diverse multi-disciplinary teams, and that research will focus on the interdependent environmental, ecological, infrastructure, and human components of the system. We expect the expertise of the team to be matched to the research being proposed, which may include social science expertise and data science. The applicant should consider how contributing capabilities will support to an overall application that fits into the EESSD research scope and the RFAs (research focus areas)

38. Could an urban IFL application be social-science focus, or must it be physical science-driven?

A: Urban IFLs are driven by core BER and EESSD research, which is primarily physical science, so physical science should be the major foci. However, an urban IFL should integrate natural-human components together and may draw on social science methods to do so. That said, research must fit into the EESSD research scope and fit the RFAs (research focus areas).

Expected Urban IFL outcomes

39. Could you please clarify what specific benefits of equitable solutions mean under Research Focus Area 3?

A: Applicants need to identify which benefits are of focus for the proposed research. At a high level, benefits may be the effectiveness in mitigating urban climate change across a diversity of urban communities, benefits in reducing GHG emissions, and/or benefits to reducing the effects of climate change on disadvantaged communities through the adoption of urban development opportunities (e.g., green spaces), new environmental practices, clean energy technologies, etc. RFA #3 is focused on developing the capabilities to model, provide information, or assess potential benefits of different interventions or alternatives. The intention of the RFA is for the Urban IFLs to develop the frameworks and capabilities that can be used to evaluate or develop solutions/strategies.

40. In terms of end products, what is the IFL expecting to showcase? Is it new model capability that considers urban feedbacks in climate system? or is it utilization of climate information in urban systems?

A: Urban IFLs are envisioned to be comprehensive projects, intense observations, and field campaigns to build predictive understanding to model urban systems to inform climate solutions. We are focusing on new/interdisciplinary science and has to engage some new directions to provide opportunities to integrate social and natural sciences to advance what we know about urban systems. These may include simulations, scenarios, etc. The IFLs are a basic research exercise, but with the goal of benefiting underserved communities. Since this is new, we are being open here. That said, both foci identified in this question are equally relevant and appropriate.

41. To what extent is stakeholder engagement and/or outreach expected as part of the core IFL activity?

A: We have not set specific targets or levels for stakeholder engagements, but its repeatedly mentioned in various parts of the FOA, indicative of its importance. For example, the FOA states: “The IFLs are expected to have deliverables or benchmarks that help focus the objectives of the research to the proposed short and long-term goals of the project. Examples of deliverables include peer reviewed research articles, stakeholder engagement and outreach, published and accessible data sets, software releases, analytical and visualization tools, and patent applications. Each IFL is expected to design and report appropriate benchmarks for workforce development, mentoring, and/or training deliverables. Each IFL is expected to maintain an up-to-date, accurate and informative website that includes both scientific project information and relevant information for urban stakeholders.”