



U.S. DEPARTMENT OF
ENERGY

Office of
Science

Informational Webinar
Climate Resilience Centers (CRCs)
Funding Opportunity Announcement (FOA)
DE-FOA-0003181

Pre-Application Deadline: December 14, 2023, at 5:00 pm ET

Full Application Deadline: March 7, 2024, at 11:59 pm ET

Brian Benscoter and Bob Vallario
November 6, 2023

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.

Agenda

- Greeting from Earth and Environmental Sciences Division (EESSD)
 - ▶ Gary Geernaert, Division Director, EESSD
- Background on BER and EESSD
- CRC FOA Overview and Context
- Applying to the CRC FOA
- Q&A

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.

Welcome from EESSD

Dr. Gary Geernaert

Division Director

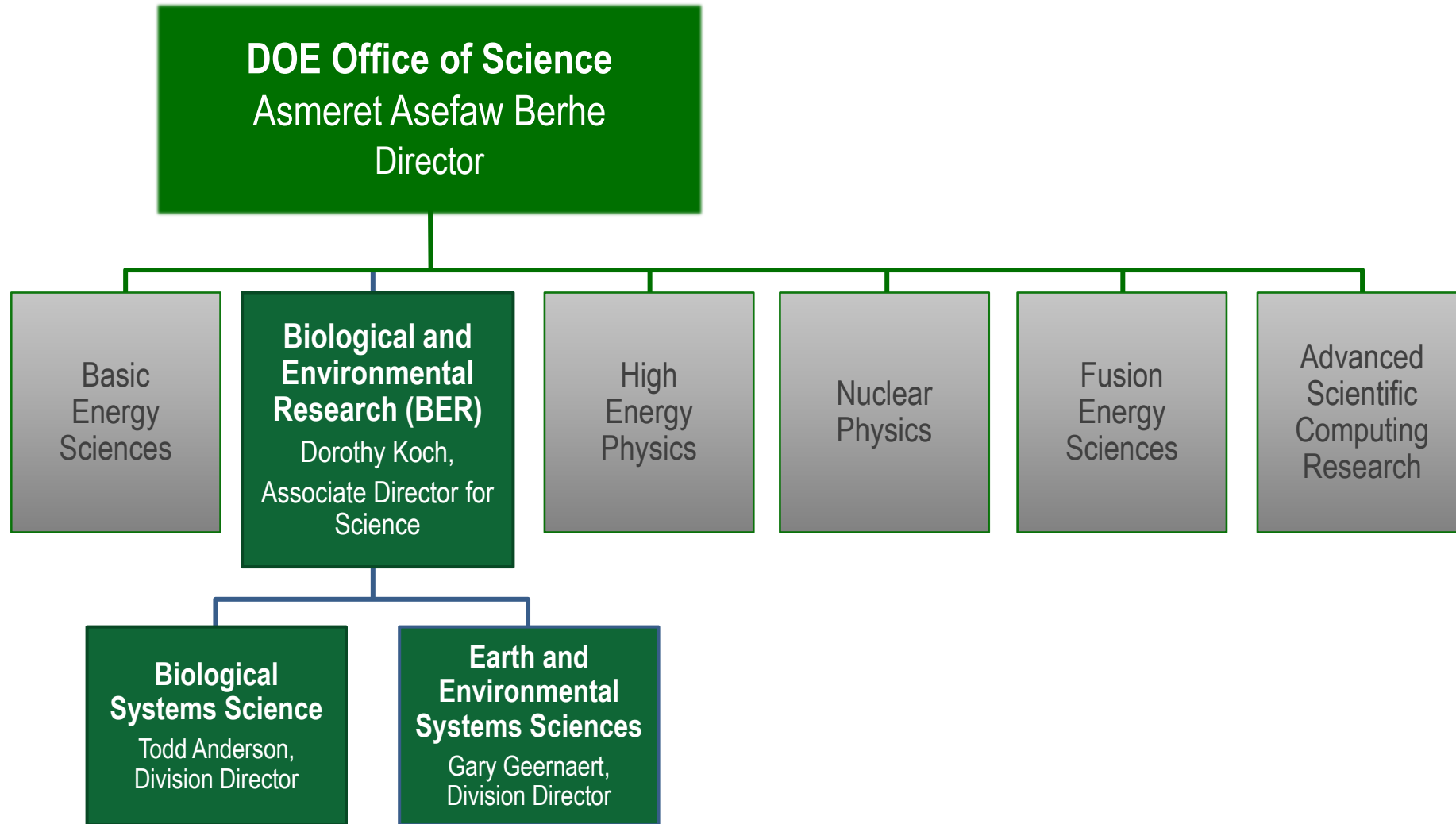
Earth and Environmental Systems Sciences Division (EESSD)



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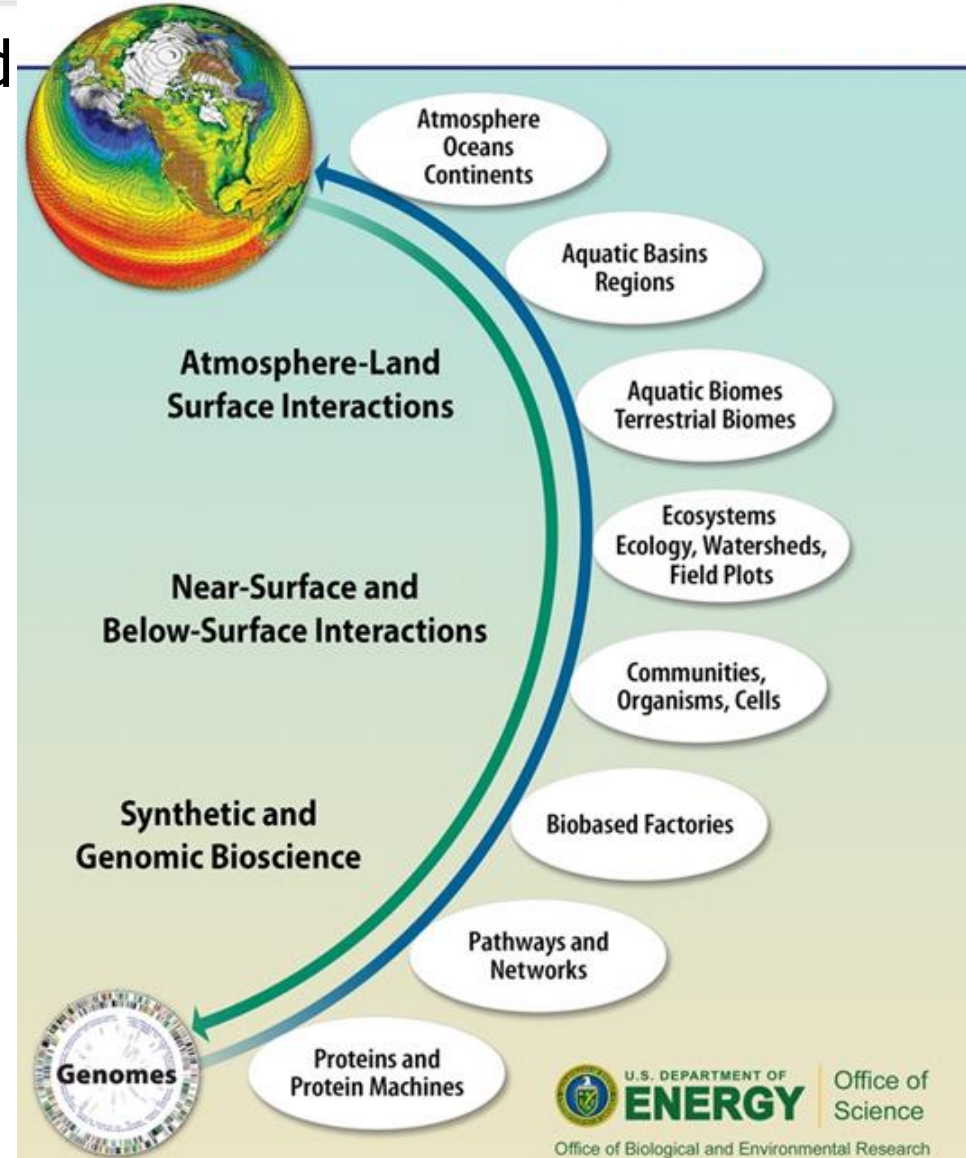
Biological and Environmental Research (BER)

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

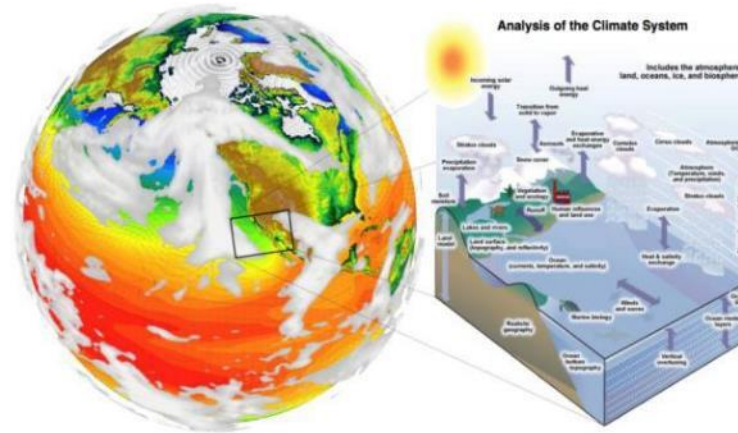


BER's Earth and Environmental Systems Sciences Division (EESSD)



Atmospheric System Research

- Atmospheric Science
- Atmospheric Radiation Measurement (ARM) facility



Earth and Environmental Systems Modeling

- Climate and Earth System Modeling
- E3SM



Environmental System Science

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

Climate Resilience Centers, FAIR, RENEW, Urban IFL

Data Management for Earth and Environmental Sciences

Earth and Environmental Systems Science Division



Gary Geernaert
Division Director



Paul Bayer
EMSL User
Facility



Brian Benscoter
Environmental System Science



Dan Stover



Mike Kuperberg
USGRCP



Gil Bohrer
IPA



Beth Drewniak
ANL Detailee



Scott Collis
ANL Detailee



Justin Hnilo
Data
Management



Andrew Flatness
Program
Specialist



Sally McFarlane
ARM User Facility



Shaima Nasiri
Atmospheric System
Research



Jeff Stehr



Xujing Davis
Earth and Environmental Systems Modeling



Renu Joseph



Bob Vallario



EESSD Research Investment

Laboratory Research

- Science Focus Areas (SFA)
- Large Projects
 - ▶ NGEE-Arctic; NGEE-Tropics; AmeriFlux, IDEAS, ESGF, ESM SciDAC, ICoM, COMPASS FME & GLM
- Boutique Projects
- Can include university collaborations
- Lab researchers can collaborate on university-led projects

University Research

- Supported through Funding Opportunity Announcements (FOAs)
- Topically focused projects
- Vary in size and duration
- Programmatic or Division-wide
- EPSCoR Program
- Early Career Research Program
- RENEW and FAIR

EESSD User Facilities and Resources

The logo for the Atmospheric Radiation Measurement (ARM) facility, featuring the letters "ARM" in a bold, blue, sans-serif font with a light blue curved line underneath.

<https://arm.gov/>

The logo for the Environmental Molecular Sciences Laboratory (EMSL), featuring the letters "EMSL" in a green, sans-serif font with an orange molecular structure icon to the right.

<https://www.emsl.pnnl.gov/>

DOE Scientific User Facilities Provide researchers with the most advanced tools of modern science, including accelerators, colliders, supercomputers, light and neutron sources, as well as facilities for studying the nano world, the environment, and the atmosphere.

EESSD supports two world class scientific user facilities:

- **Atmospheric Radiation Measurement (ARM)**
- **Environmental Molecular Sciences Laboratory (EMSL)**

Free access to instruments and analysis via annual/regular user proposals.



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National Virtual Climate Laboratory (NVCL)



The screenshot shows the NVCL web portal homepage. At the top, there is a navigation bar with links for HOME, RESEARCH, OPPORTUNITIES, and USER FACILITIES. The main header features the NVCL logo and the U.S. Department of Energy Office of Science logo. Below the header is a large banner image showing a collage of climate-related scenes: a tropical beach, a snowy mountain range, a city skyline, and server racks. A white box in the center of the banner contains the NVCL logo and the text "NATIONAL VIRTUAL CLIMATE LABORATORY". Below this, a paragraph describes the portal's purpose: "The National Virtual Climate Laboratory (NVCL) web portal provides access to U.S. Department of Energy (DOE) climate science, connecting users at research universities and other interested organizations to a wide range of experts, programs, projects, activities, and user facilities that are engaged in climate research across the national laboratory complex." Below the banner is a section titled "NVCL OBJECTIVES" with three numbered points:

- 1 CENTRALIZE ACCESS TO DOE CLIMATE RESEARCH**
Offer a well-curated, easily accessible, plain-language inventory of DOE Biological and Environmental Research (BER) projects related to climate research and user facilities with continuously updated portal content.
[VIEW RESEARCH »](#)
- 2 LIST CLIMATE TRAINING OPPORTUNITIES**
Provide students, faculty, and early career scientists access to lab-based education and training opportunities at the national laboratories, including coaching and mentoring opportunities in the skills they need to ensure success in their careers.
- 3 ENCOURAGE COLLABORATIONS**
Facilitate robust, self-sustaining collaborations between national laboratories and interested organizations, including colleges and universities that serve underrepresented students.

At the bottom of the objectives section are three images: a globe showing climate data, a group of diverse people, and three scientists in a lab setting.

DOE's new portal (launched May 2023) will catalyze engagement with BER climate science, SC Scientific User Facilities, and DOE National Laboratory resources to train the next generation of climate scientists and professionals.

[NVCL.energy.gov](https://nvcl.energy.gov)



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Overview and Context for the Climate Resilience Centers FOA

DE-FOA-0003181

DOE Program Manager FOA Contacts

Scientific/Technical Contacts:



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Bob Vallario

bob.vallario@science.doe.gov



BER Climate Resilience & CRCs

- ▶ Climate resilience is the ability of a community or region to reach full recovery after being exposed to climate-induced stresses and damages, using strategies that adjust its adaptive capacity at minimal impact to natural, socioeconomic, infrastructure, and financial systems.
- ▶ CRCs will provide an embedded, community focused research agenda that aligns with the BER mission and community priorities to promote accessibility and utility for subsequent use in community decision-making and action.

BER Climate Resilience Centers

- ▶ This is SC's second FOA with a focus on establishing CRCs at non-R1 Minority Serving Institutions (MSIs), Historically Black Colleges and Universities (HBCUs), and Emerging Research Institutions (ERIs). CRCs will focus on basic climate science research to inform the needs of stakeholders and frontline communities, including equitable solutions in response to the climate crisis.
- ▶ CRCs will:
 - Extend DOE-supported climate science, capabilities, and research at the national labs to address regional resilience needs and impacts on natural, socioeconomic, or built systems and/or their intersections.
 - Foster capacity at regional and local scales by connecting with affected communities and stakeholders to translate basic research into actionable science to enhance climate resilience, as well as to identify research priorities for future DOE investments.
 - Form a nucleus for building and empowering a future pool of local talent and expertise, including young scientists, engineers, and technicians who will combine observational, experimental, and modeling science to address local resilience challenges and inform equitable solutions.



CRC Defining Attributes *(See Section I of the FOA)*

- ▶ The FOA will provide funding to build research capacity in climate resilience, leverage ongoing DOE climate science and capabilities at national laboratories and universities, and build two-way engagement between DOE funded research and community stakeholders. Funding will emphasize science accessibility, translation for improved climate response, training, networking, and outreach.
- ▶ Applications must include a connection to BER climate science, e.g., partnership with an existing SFA/project or clear use of BER research products.
- ▶ Research focus should be directly relevant to the applicant's community/region, focusing on climate science as it relates to equitable resilience and America's most vulnerable and disadvantaged communities.
- ▶ Emphasis will be given to applications from regions, institutions, and investigators not represented by prior awards.



Expectations for CRCs

- ▶ CRCs will focus on basic climate science research to inform the needs of stakeholders and frontline communities, including equitable solutions in response to the climate crisis.
- ▶ Importantly, the centers will emphasize science translation, linking climate resilience science with the local climate resilience needs to accelerate the deployment of equitable solutions through participatory engagement.
- ▶ Examples of science challenges that the CRCs may address include:
 - ▶ Developing contextualized, community-based definitions and models of resilience, illuminating the dynamic processes, quantifiable dimensions, and metrics that can be incorporated to measure progress.
 - ▶ Developing new and insightful prediction tools and exploring their use through model and data-driven stress testing to evaluate adaptation strategies that can achieve desired levels of equitable resilience over time horizons of interest.
 - ▶ Building or extending observational capabilities to provide the necessary data for new predictions or improve prediction accuracy in support of resilience strategies.
- ▶ CRCs are required to leverage the scientific products and/or capabilities at the DOE national laboratories



FY 2023 Climate Resilience Center Awards

- ▶ *"The Climate Resilience Center in Piedmont Triad of North Carolina"*, Solomon Bililign (lead PI), North Carolina A&T University
- ▶ *"California Community and Earth-system Integrated Climate Resilience Center (CalCEI CRC)"*, Minghui Diao (lead PI), San Jose State University
- ▶ *"Southwest Climate Resilience Center"*, Peter Fulé (lead PI), Northern Arizona University
- ▶ *"Center for Climate Adaptation and Resilience in Baltimore (CCARB)"*, Xiaowen Li (lead PI), Morgan State University
- ▶ *"San Joaquin Valley Climate Resilience Center: Informing Equitable Climate Outcomes Through Collaborative and Interdisciplinary Science for DOE Climate Resilience Centers"*, Samuel Markolf (lead PI), University of California-Merced
- ▶ *"Center for Climate-driven Hazard Adaptation, Resilience, and Mitigation (C-CHARM) in Great Lakes Rural Communities"*, Pengfei Xue (lead PI), Michigan Tech University



Contribution of CRCs to the BER portfolio

Climate Resilience Centers (CRC)

- Pursuit and translation of basic climate science for climate resilience with two-way engagement

Funding to Accelerate Inclusive Research (FAIR)

- Institutional research capacity building to accelerate competitiveness

Reaching a New Energy Sciences Workforce (RENEW)

- Experiential training of students in BER science areas

Urban Integrated Field Laboratory (Urban IFL)

- Multi-institution projects focused on basic research in urban systems





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Applying to the Climate Resilience Centers FOA

DE-FOA-0003181

Applying to the CRC Solicitation

- ▶ Pre-Application Deadline: Thursday December 14, 2023, at 5 pm ET
 - ▶ **Pre-applications are required**
 - ▶ Pre-applications submitted through PAMS **by SRO**
 - ▶ **Limit of two (2) pre-applications per institution as lead**
 - ▶ Encourage/Discourage Response: January 11, 2024, by 5pm ET via PAMS
 - ▶ Decision of 'Encourage' required to be eligible for full application submission
- ▶ Full Application Deadline: Thursday March 7, 2024, at 11:59 pm ET
 - ▶ Submitted through Grants.gov (by SRO)
 - ▶ **Limit of two (2) applications per institution as lead**
- ▶ Merit Review Criteria will be used to evaluate applications
- ▶ Program Policy Factors will be used to prioritize funding recommendations
- ▶ DOE anticipates that award selection will be completed by September 2024

Award Information

- ▶ Estimated funding: total of \$5 million in FY24 funds anticipated.
- ▶ Period of performance: 3 years
- ▶ Minimum/maximum award size: \$100,000 to \$1,000,000 total
- ▶ Number of awards: approximately 5-7 awards are anticipated
- ▶ Type of award: Grants
- ▶ Institutions are limited to two (2) CRC pre-applications/ applications as the lead institution but may partner on additional applications.



Eligibility and Teaming Arrangements

- ▶ Lead applicant must be an HBCU, non-R1 MSI, or emerging research institution.
 - ▶ Institution Designation List: <https://science.osti.gov/grants/Applicant-and-Awardee-Resources/Institution-Designations>
- ▶ Multi-institutional teaming arrangements may occur through subawards, but their roles and budget requests must be justifiable and equitable.
 - National lab collaboration budgets are limited to up to 10% of the total award budget.
- ▶ BER will use the Program Policy Factors when making selections, including prioritizing participation of institutions historically underrepresented in the BER portfolio.

PIER Plan (Appendix 5)

- ▶ The Promoting Inclusive and Equitable Research (PIER) Plans should describe the activities and strategies to promote equity and inclusion as an intrinsic element of the research project
 - ▶ Describe plan to foster a positive, inclusive, and professional training and research environment
 - ▶ Should be tailored to the application and not be a re-statement of standard institutional policies or broad principles
- ▶ Max. page limit of 3 pages, submitted as Appendix 5 (does not count toward narrative page limit)
- ▶ For more information about PIER plans:
<https://science.osti.gov/grants/Applicant-and-Awardee-Resources/PIER-Plans>

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

Helpdesk Hours: Monday-Friday, 9am – 5:30 pm ET

PAMS Help Wiki: <https://pamsexternalhelp.science.energy.gov/display/UTL2/PAMS+Help>

▶ Any Other Applicable Systems

Check Registration in PAMS

- ▶ Because of the institutional limitation on submissions, preapplications must be submitted to PAMS via a “Submit to DOE” privileged account (e.g., SRO)
- ▶ Confirm in advance your institution’s PAMS account:
 - ▶ Is active,
 - ▶ Has the correct and appropriate contact(s), and
 - ▶ If possible, has multiple registered contacts.
- ▶ PAMS Helpdesk closes at 5:30 pm ET

Helpful Reminders for a Successful Application

- ▶ Carefully review the 'Updates and Reminders' and 'Checklist for Avoiding Common Errors' sections at the beginning of the solicitation
 - ▶ e.g., Appendixes should be submitted as part of the main proposal document, not as separate supporting documents
- ▶ Provide budget sheets and budget justifications for the applicant institution and any subawards (including National Lab collaborators) requesting funding
 - ▶ National Lab budget request are limited to a max. of 10% of the total application budget
- ▶ Be sure to use the current standardized forms for the PI biosketches, current and pending awards, and know conflicts of interest documents (links provided in FOA)
- ▶ Be sure to include a Data Management Plan (DMP) for all applications, even if no experimental data is expected
 - ▶ SC Statement on Digital Data Management: <https://science.osti.gov/funding-opportunities/digital-data-management>



Helpful Reminders for Budget Preparation

- ▶ Provide a justification that explains all costs proposed in the budget
 - ▶ Budget sheets and budget justification must be consistent to nearest \$1
 - ▶ Use the budget sheet sections to outline the budget justification (A. Senior Personnel, B. Other Personnel, etc)
- ▶ Capital Equipment (individual items >\$5000) is allowed if necessary for the proposed activities
 - ▶ Materials & Supplies are items with individual costs <\$5000, even if the total for multiple items is >\$5000
- ▶ Fringe/Indirect Rates must include the indirect cost rate agreement as part of the budget justification
- ▶ Personnel costs should be inclusive of salary and fringe (do not list separately)
- ▶ Travel - Include purpose, destination, anticipated dates of travel (if known) or trip duration (e.g., 3 days), expenses (e.g., airfare, lodging, per diem, etc), and number of individuals for each trip. Itemized costs of expenses are not required.



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://asr.science.energy.gov/>

Environmental System Science (ESS)

<https://ess.science.energy.gov/>

Earth and Environmental System Modeling (EESM)

<https://climatemodeling.science.energy.gov/>

Data Management

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

Atmospheric Radiation Measurement (ARM) user facility

<https://www.arm.gov/>

Environmental Molecular Sciences Laboratory (EMSL)

<https://www.emsl.pnnl.gov/>

BER Funding Opportunities

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

Office of Economic Impact and Diversity

<https://www.energy.gov/diversity/office-economic-impact-and-diversity>

Promoting Inclusive and Equitable Research (PIER)

<https://science.osti.gov/grants/Applicant-and-Awardee-Resources/PIER-Plans>

HBCU, MSI, and emerging institution list

<https://science.osti.gov/grants/Applicant-and-Awardee-Resources/Institution-Designations>



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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)

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





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