

**DEPARTMENT OF ENERGY (DOE)
OFFICE OF SCIENCE (SC)
ADVANCED SCIENTIFIC COMPUTING RESEARCH (ASCR)**



HIGH PERFORMANCE DATA FACILITY (HPDF)

**DOE NATIONAL LABORATORY PROGRAM ANNOUNCEMENT NUMBER:
LAB 23-3020**

ANNOUNCEMENT TYPE: INITIAL

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Submission Deadline for Proposal:	May 5, 2023, at 5:00 PM Eastern Time

Table of Contents

UPDATES AND REMINDERS.....	I
SECTION I – DOE NATIONAL LABORATORY OPPORTUNITY DESCRIPTION	1
SECTION II – AWARD INFORMATION.....	6
A. TYPE OF AWARD INSTRUMENT.....	6
B. ESTIMATED FUNDING	6
C. MAXIMUM AND MINIMUM AWARD SIZE.....	6
D. EXPECTED NUMBER OF AWARDS.....	6
E. ANTICIPATED AWARD SIZE	6
F. PERIOD OF PERFORMANCE.....	6
G. TYPE OF PROPOSAL	7
SECTION III – ELIGIBILITY INFORMATION	8
A. ELIGIBLE APPLICANTS AND TOPICS.....	8
B. COST SHARING.....	8
SECTION IV – PROPOSAL AND SUBMISSION INFORMATION	9
A. ADDRESS TO REQUEST PROPOSAL PACKAGE.....	9
B. LETTER OF INTENT AND PRE-PROPOSAL.....	9
C. PROPOSAL SUBMISSION AND CONTENT.....	11
D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS.....	19
E. SUBMISSION DATES AND TIMES	19
SECTION V –PROPOSAL REVIEW INFORMATION.....	20
A. CRITERIA	20
B. REVIEW AND SELECTION PROCESS	22
SECTION VI - ADMINISTRATION INFORMATION	23
A. NOTICES.....	23
B. PAMS REGISTRATION.....	23
SECTION VII - QUESTIONS/AGENCY CONTACTS.....	25
A. QUESTIONS	25
B. AGENCY CONTACTS.....	25

UPDATES AND REMINDERS

RECOMMENDATION

The Department of Energy (DOE) Office of Science (SC) encourages you to register in all systems as soon as possible. You are also encouraged to submit proposals or expressions of interest before the deadline.

BIOGRAPHICAL SKETCHES

The instructions for the content of biographical sketches have changed. Please read the instructions carefully and follow them.

INTERAGENCY FORMATS FOR BIOGRAPHICAL SKETCHES

Interagency common instructions for preparing biographical sketches are being developed. The Science Experts Network Curriculum Vitae (SciENCv) system at <https://www.ncbi.nlm.nih.gov/sciencv/> will be updated to support the forthcoming common instructions and formats. The fillable PDFs at <https://nsf.gov/bfa/dias/policy/nsfapprovedformats/> may not be available in the future. When interagency common formats and instructions are promulgated, their use will be required. SC strongly encourages all researchers to use the online SciENCv system to ensure that their documents are prepared in the appropriate format with the least inconvenience.

SC STATEMENT OF COMMITMENT

The DOE SC is fully and unconditionally committed to fostering safe, diverse, equitable, and inclusive work, research, and funding environments that value mutual respect and personal integrity. Discrimination and harassment undermine SC's ability to achieve its mission by reducing productivity, discouraging, or inhibiting talent retention and career advancement, and weakening the integrity of the SC enterprise overall. SC does not tolerate discrimination or harassment of any kind, including sexual or non-sexual harassment, bullying, intimidation, violence, threats of violence, retaliation, or other disruptive behavior in the federal workplace, including DOE field site offices, or at national laboratories, scientific user facilities, academic institutions, other institutions receiving SC funding, or other locations where activities funded by SC are carried out. All applicants and collaborators should familiarize themselves with the SC Statement of Commitment available at <https://science.osti.gov/SW-DEI/SC-Statement-of-Commitment>.

UPDATING YOUR PAMS PROFILE

All applicants are encouraged to update their profiles in the PAMS website at <https://pamspublic.science.energy.gov> regularly, at least annually, to ensure SC has your most up to date information. The PAMS profile now requires that individuals provide responses to the demographic related fields. SC strongly encourages personnel at applicant and awardee institutions, including Principal Investigators (PIs), Co-PIs, and other Key Personnel, to provide

their demographic information. By providing your demographic information, you are assisting with SC's continued commitment to advancing diversity, equity, and inclusion in its business practices. Alternatively, for information you wish not to disclose, please select, "Do not wish to provide." Your individual demographic information will not be shared with peer reviewers and the information in your PAMS profile is protected by the requirements established in the Federal Privacy Act of 1974. Aggregate, anonymized demographic information may be shared with confidential review committees who are charged to evaluate the quality and efficacy of SC's business practices. For example, summary statistics of all applicants to or award selections from a particular SC FOA may be reviewed by a Committee of Visitors.

PDF GENERATION

The narrative in a proposal must be one single machine-readable PDF file that contains the DOE Title Page, project narrative, all required appendices, and other attachments. This single PDF file may not be scanned from a printed document and must be uploaded in PAMS. This must be a plain PDF file consisting of text, numbers, and images without editable fields, signatures, passwords, redactions, or other advanced features available in some PDF-compatible software. Do not use PDF portfolios or binders. The research narrative will be read by SC staff using the full version of Adobe Acrobat: Please ensure that the narrative is readable in Acrobat. If combining multiple files into one research narrative, ensure that a PDF portfolio or binder is not created. If creating PDF files using any software other than Adobe Acrobat, please use a "Print to PDF" or equivalent process to ensure that all content is visible in the research narrative. Once a research narrative has been assembled, please submit the combined research narrative file through a "Print to PDF" or equivalent process to ensure that all content is visible in one PDF file that can be viewed in Adobe Acrobat.

Checklist for Avoiding Common Errors:

Item	Issue
Page Limits	Strictly followed throughout proposal, including particular attention to: - Narrative
Personally Identifiable Information	None present in the proposal
Narrative	Composed of one PDF file including all appendices
DOE Title Page	Follow instructions closely
Biographical Sketches	Follow page limits strictly and do not include list of collaborators.
PDF Files	Ensure that all PDF files comply with the following standards: - Files must be machine-readable. - Files may not be scanned from a printed document. - Files must be plain PDF files consisting of text, numbers, and images without editable fields, signatures, passwords, redactions, or other advanced features available in some PDF-compatible software. - Files must not be PDF portfolios or binders. - Files must be readable in the full version of Adobe Acrobat - If combining multiple files into one research narrative, ensure that a PDF portfolio or binder is not created. - If creating PDF files using any software other than Adobe Acrobat, please use a “Print to PDF” or equivalent process to ensure that all content is visible.
Institutions capable of being funded through the DOE Field Work System	Do not create new institutions in the PAMS website for any DOE/NNSA National Laboratory or DOE Site. Submissions will be evaluated for technical merit, but any resulting funding, work, or awards will be made under the laboratory or site’s contract with DOE. No separate financial assistance awards will be made. No administrative provisions of this Announcement will apply to the laboratory or any laboratory subcontractor.

Section I – DOE NATIONAL LABORATORY OPPORTUNITY DESCRIPTION

ALL INQUIRIES ABOUT THIS ANNOUNCEMENT SHOULD BE DIRECTED TO:

Dr. Benjamin Brown
301-903-7785
benjamin.brown@science.doe.gov

SUMMARY

The DOE SC program in Advanced Scientific Computing Research (ASCR) hereby announces its interest in receiving proposals from eligible DOE National Laboratories to lead the High Performance Data Facility (HPDF).

The complexity of scientific pursuits is increasing rapidly as leading-edge research requires dynamic integration of experiment, observation, theory, modeling, simulation, visualization, machine learning (ML), artificial intelligence (AI), and analysis. Research projects across the DOE Office of Science (SC) are increasingly data- and compute-intensive. Innovative research programs and activities are seeking to accelerate the pace of discovery by leveraging high performance computational and data resources in their research workflows, for example by coupling resources from multiple SC scientific user facilities together.

With the advent of powerful AI/ML approaches and the explosion of data volumes and velocities at many scientific user facilities, SC programs and their scientific user facilities have proposed accelerating discovery by developing new techniques to steer experiments and facilities; creating computing environments that integrate heterogeneous data for novel analyses; automating and streamlining interpretation of datasets; and making data Findable, Accessible, Interoperable, and Reusable (the FAIR principles of open data). These goals require new designs of computing and data infrastructure that provide researchers with reliable, simple, seamless performance and alleviate burdens for user facility staff.

To meet these challenges, SC is advancing the Integrated Research Infrastructure (IRI) vision: DOE will empower researchers to seamlessly and securely meld DOE’s world-class research tools, infrastructure, and user facilities in novel ways to radically accelerate discovery and innovation. From an infrastructure perspective, the vision seeks to create a DOE integrated research ecosystem that transforms science via seamless interoperability. From a human-centered perspective, the vision seeks to free researchers and user facility staff from the complexity, uncertainty, and labor-intensity of hand-crafted workflow integration.

Over the last several years, the Advanced Scientific Computing Research (ASCR) program conducted a set of Requirements Reviews and activities that have established the framework for IRI and the high performance data infrastructure required to advance the DOE mission. These community engagement efforts were capped by the FY 2022 SC Integrated Research Infrastructure (IRI) Architecture Blueprint Activity, a convening of over 160 DOE laboratory subject matter experts spanning all SC user facilities. Together, these various reports have

documented the need for high performance data infrastructure to advance the Integrated Research Infrastructure vision.

The High Performance Data Facility (HPDF) will serve as a foundational element in enabling the DOE Integrated Research Infrastructure. HPDF will provide crucial resources to Office of Science programs to attack fundamental problems in science and engineering that require nimble shared access to large data sets, increasingly aggregated from multiple sources. HPDF will partner and operate in concert with other ASCR Facilities and potentially other DOE Laboratory computing resource providers to provide a high availability high performance computing and data ecosystem for a wide variety of applications. DOE envisions HPDF will have a “Hub-and-Spoke” model in which a Hub will host centralized resources and also enable high priority DOE mission applications at “Spoke” sites by deploying and orchestrating distributed infrastructure at the Spokes or other locations. The facility will be designed to dynamically configure computation, network resources and storage to access data at rest or in motion, supporting the use of well-curated datasets as well as near real-time analysis on streamed data directly from experiments or instruments.

This call for proposals will determine selection of the lead national laboratory for HPDF, which will host the Hub; this call will not result in awards for the HPDF Spokes. DOE anticipates that a selection competition for the HPDF Spokes will occur at a later date.

DOE intends to site the Hub at a DOE national laboratory with a direct connection (one network “hop”) to the Energy Sciences Network (ESnet) backbone network. Applicants are encouraged to consider geographical diversity and operational resilience for the location of the Hub in relation to the architecture of the ESnet6 backbone network¹.

The selectee will work with the ASCR program to advance the HPDF project R&D, conceptual design, Analysis of Alternatives, and other steps required to prepare for DOE Critical Decision 1, Approve Alternative Selection and Cost Range.

SUPPLEMENTARY INFORMATION

Strategic Requirements for the DOE Computing and Data Infrastructure Ecosystem

The IRI Architecture Blueprint Activity identified three broad IRI science patterns that demand interoperability of our research infrastructure:

- **Time-Sensitive patterns:** Science cases requiring end-to-end urgency. For instance, streaming data for real-time analysis, real-time experiment steering, real-time event detection, AI-model inference, deadline scheduling to avoid falling behind.
- **Data-Integration-Intensive patterns:** Science cases that demand combining and analyzing data from multiple sources. For instance, AI federated learning, combined analysis of data from multiple sites/locations, experiments, and/or simulations.

¹ <https://www.es.net/welcome-esnet6/esnet6-maps/>

- **Long-Term Campaign patterns:** Science cases requiring sustained access to resources over a long time to accomplish a well-defined objective. For instance, sustained simulation production, large data processing and archiving for collaborative use and re-use.

These IRI patterns point to broad requirements for the future DOE computational and data infrastructure ecosystem:

- **DOE requires a dynamic and scalable data management infrastructure that is network-integrated with the DOE computing ecosystem, with diverse capabilities:**
 - **Data capture:** Availability of dynamically allocatable data storage and edge computing at the point of generation.
 - **Data staging:** Dynamic placement of data in proximity to appropriate computing for reduction, analysis, processing, etc.
 - **Data archiving:** Availability of extreme scale data management systems for archiving data with FAIR data stewardship principles.
- **DOE requires a diversified computing ecosystem that can provide researchers with access to an appropriate computing resource at the appropriate time:**
 - **Computing uptime/resilience:** For applications that require co-operations of multiple user facilities, high reliability access to computing is important. Developing failover architectures between computing systems and geographic distribution of computing systems will enhance resilience.
 - **Computing latency and bandwidth:** For applications that stream data for analysis, a powerful computer very far away may appear less powerful than a less capable computer at the edge. The latency—the responsiveness of the computational resource when called upon—is key to end-to-end workflow performance. Managed distributed computing is a potential approach to ensuring availability of sufficiently powerful computing on-demand.
 - **Flexing across diverse computing resources:** Some IRI science cases will demand the highest performance computing resources available at key moments; some IRI cases will require different computing tools at different times. Dynamically-configurable computing resources and interoperability of software across diverse computing resources are potential approaches to meeting these demands.

Satisfying all of these requirements is beyond the reach of any one national laboratory, one user facility, one supercomputer, or one data management platform. Many of these requirements are research problems in their own right. These challenges necessitate a strategic IRI system-of-systems approach that melds distributed and centralized resources, and that provides researchers and user facilities the ability to design, test, and deploy new solutions.

Mission Statement and Vision for the High Performance Data Facility

The mission of the High Performance Data Facility is to *enable and accelerate scientific discovery by delivering state-of-the-art data management infrastructure, capabilities, and tools.*

- HPDF will provide leadership in the stewardship of the scientific data lifecycle.
- HPDF will provide leadership in advanced computing models for processing streaming data, including management of high performance distributed computing and data resources, as well as interoperability of distributed high performance data infrastructure with high-performance computing resources.
- HPDF also has the potential to uplift high performance data management as a research endeavor and as a community of practice. HPDF can provide national and regional outreach and engagement to foster access to DOE data resources.

HPDF is envisioned as a new SC User Facility² with a Hub-and-Spoke model that fits within and adds world-class capabilities to the ASCR and SC User Facilities ecosystems.

The Hub-and-Spoke model presumes a Hub lead laboratory with centralized resources that also creates partnerships to deploy and orchestrate distributed infrastructure at the Spokes or other locations. The number and variety of Spokes is likely to grow and evolve with mission requirements, consistent with SC's deep experience with the Cooperative Stewardship model for major research infrastructure.³

The eventual HPDF Analysis of Alternatives will assess potential approaches, focusing on a Hub-and-Spoke model, to data and compute infrastructure against core IRI requirements, core SC Program requirements, and other infrastructure requirements (such as integration with ESnet, NERSC, the ASCR Leadership Computing Facilities, the other SC user facilities, and/or national laboratory research computing systems). Importantly, the Hub-and-Spoke model provides a basis for the Hub lead laboratory to build partnerships from the beginning of the HPDF project that will build capacity and capability over time and address urgent mission needs.

References

- Crosscut report: Exascale Requirements Reviews (2017) <https://doi.org/10.2172/1417653>
- Pioneering The Future Advanced Computing Ecosystem: A Strategic Plan (2021) <https://catalog.data.gov/dataset/artificial-intelligence-and-wireless-spectrum-opportunities-and-challenges>
- NSTC: National Strategic Overview for Research & Development Infrastructure (2021) https://www.whitehouse.gov/wp-content/uploads/2021/10/NSTC-NSO-RDI-REV_FINAL-10-2021.pdf
- BES Roundtable on Producing and Managing Large Scientific Data with Artificial Intelligence and Machine Learning (2019) <https://doi.org/10.2172/1630823>
- Advancing Fusion with Machine Learning Research Needs Workshop Report. (2020). <https://doi.org/10.1007/s10894-020-00258-1>.
- Office of Science User Facilities Lessons from the COVID Era and Visions for the Future (2021) https://science.osti.gov/-/media/bes/pdf/reports/2021/SC_User_Facilities_rpt_print.pdf

² <https://science.osti.gov/User-Facilities/Policies-and-Processes>

³ National Research Council. 1999. Cooperative Stewardship: Managing the Nation's Multidisciplinary User Facilities for Research with Synchrotron Radiation, Neutrons, and High Magnetic Fields. Washington, DC: The National Academies Press. <https://doi.org/10.17226/9705>

- Toward a Seamless Integration of Computing, Experimental, and Observational Science Facilities: A Blueprint to Accelerate Discovery (2021). <https://doi.org/10.2172/1863562>.
- Climate and Environmental Sciences Division Strategic Plan 2018–2023, DOE/SC–0192, U.S. Department of Energy Office of Science (https://science.osti.gov/-/media/ber/pdf/workshop-reports/2018_CESD_Strategic_Plan.pdf)
- Biological Systems Science Division Strategic Plan, DOE/SC-0205. U.S. Department of Energy Office of Science (2021). (<https://genomicscience.energy.gov/2021bssdstrategicplan/>).
- Artificial Intelligence for Earth System Predictability (AI4ESP) Workshop Report (2021) <https://doi.org/10.2172/1888810>
- Foundational Science for Biopreparedness and Response (2022) https://science.osti.gov/-/media/Initiatives/pdf/Biopreparedness_Roundtable_Report_092722.pdf
- Automated Research Workflows for Accelerated Discovery: Closing the Knowledge Discovery Loop. National Academies of Sciences, Engineering, and Medicine Washington, DC: The National Academies Press (2022) <https://doi.org/10.17226/26532>.
- ESnet Requirements Review reports for:
 - Nuclear Physics Network Requirements Review Report (2019) <https://doi.org/10.2172/1619180>
 - High Energy Physics Network Requirements Review (2021) <https://doi.org/10.2172/1804717>
 - 2021 Fusion Energy Sciences Network Requirements Review (2022) <https://doi.org/10.2172/1868981>
 - 2022 Basic Energy Sciences Network Requirements Review (2022) <https://doi.org/10.2172/1899590>

Section II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding laboratory work authorizations under this DOE National Laboratory Program Announcement.

Any awards made under this Announcement will be subject to the provisions of the contract between DOE and the awardee National Laboratory.

B. ESTIMATED FUNDING

As identified in the Mission Need Statement for the High Performance Data Facility approved August 2020, DOE anticipates that the Total Project Cost of the HPDF project, including the Hub and Spokes, will be between \$300 million and \$500 million in current and future year funds, subject to the availability of future year appropriations. Proposals responding to this call should use a planning assumption of the low end of the total project cost range (\$300 million).

DOE is under no obligation to pay for any costs associated with preparation or submission of proposals. DOE reserves the right to fund, in whole or in part, any, all, or none of the proposals submitted in response to this Announcement.

C. MAXIMUM AND MINIMUM AWARD SIZE

(See B. Estimated Funding section above.)

D. EXPECTED NUMBER OF AWARDS

At most one award for the HPDF Lead Laboratory (Hub) is expected. Issuance of an award will depend on the results of peer review, program policy factors, and availability of appropriated funds.

This call will not result in awards for the HPDF Spokes. DOE anticipates that a selection competition for the HPDF Spokes will occur at a later date.

E. ANTICIPATED AWARD SIZE

The award size will depend on the results of peer review, program policy factors, and availability of appropriated funds.

F. PERIOD OF PERFORMANCE

DOE anticipates providing support year-over-year for the HPDF project with a performance period befitting a project of this complexity, i.e., multiple years. A successful HPDF project will result in a thriving HPDF user facility in operations. Funding is contingent on: (1) availability of funds appropriated by Congress and future year budget authority; (2) progress towards meeting

the objectives of the approved proposal; (3) submission of required reports; and (4) compliance with the terms and conditions of the award.

G. TYPE OF PROPOSAL

DOE will accept new DOE National Laboratory Proposals under this DOE National Laboratory Announcement. Please only submit a PAMS lab technical proposal in response to this Announcement; do not submit a DOE Field Work Proposal (FWP) at this time. SC will request FWPs later from those selected for funding consideration under this Announcement. Funding to the selectee national laboratory will go through the FWP process.

Section III – ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS AND TOPICS

This is a DOE National Laboratory-only Announcement. **Only SC National Laboratories⁴** are eligible to submit proposals to this Announcement. FFRDCs from other Federal agencies are not eligible to submit in response to this Program Announcement.

DOE invites all SC national laboratories to respond to this Program Announcement for the HPDF Hub. Applicants are encouraged to consider geographical diversity and operational resilience for the location of the Hub in relation to the architecture of the ESnet backbone network.

B. COST SHARING

Cost sharing is not required of DOE/NNSA National Laboratories or their subcontractors at any tier. DOE/NNSA National Laboratories may impose cost-sharing requirements on their contractors subject to their policies and procedures.

⁴ SC Laboratories are Ames Laboratory, Argonne National Laboratory, Brookhaven National Laboratory, Fermi National Accelerator Laboratory, Lawrence Berkeley National Laboratory, Oak Ridge National Laboratory, Pacific Northwest National Laboratory, Princeton Plasma Physics Laboratory, SLAC National Accelerator Laboratory, and Thomas Jefferson National Accelerator Facility.

Section IV – PROPOSAL AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST PROPOSAL PACKAGE

Proposal submission instructions are available in this Announcement on the DOE SC Portfolio Analysis and Management System (PAMS). Screenshots showing the steps in DOE National Laboratory proposal submission are available in the PAMS Help website, accessible by navigating to <https://pamspublic.science.energy.gov> and clicking on the “PAMS Help” link.

Proposals submitted outside of PAMS will not be accepted.

B. LETTER OF INTENT AND PRE-PROPOSAL

1. Letter of Intent

LETTER OF INTENT DUE DATE

The LOI due date is printed on the cover of this Announcement.

A Letter of Intent is strongly encouraged and should be submitted by the date indicated on the cover of this Announcement. The LOI is to help in planning the review of the proposals. For this purpose, the LOI must include the following:

- The name and mailing address of the sponsoring institution and the name, e-mail address, and telephone number of the PI.
- The LOI should not include a description of the objectives and technical approach of the proposal.
- The LOI must be machine-readable. Do not submit a scanned image of a printed document.

The absence of a LOI will not negatively affect a thorough evaluation of a responsive full proposal submitted in a timely fashion.

LOI SUBMISSION

LOIs are created in the software system of your choice and must be submitted electronically through the DOE SC Portfolio Analysis and Management System (PAMS) website <https://pamspublic.science.energy.gov/>. You cannot draft or edit an LOI in PAMS.

LOIs may be submitted by a PI or by other users at the PI’s institution with the “Submit to DOE” privilege in PAMS.

It is important that the LOI be a single file with extension .pdf, .docx, or .doc. The filename must not exceed 50 characters. The PI and anyone submitting on behalf of the PI must register for an account in PAMS before it will be possible to submit a letter of intent. **All PIs and those submitting LOIs on behalf of PIs are encouraged to establish PAMS accounts as soon as possible to avoid submission delays.**

You may use the Internet Explorer, Firefox, Google Chrome, or Safari browsers to access PAMS.

Submit Your Letter of Intent:

- Create your letter of intent outside the system and save it as a file with extension .docx, .doc, or .pdf. Make a note of the location of the file on your computer so you can browse for it later from within PAMS.
- Log into PAMS and click the Proposals tab. click the “View DOE National Laboratory Announcements” link and find the current announcement in the list. Click the “Actions/Views” link in the Options column next to this Announcement to obtain a dropdown menu. Select “Submit Letter of Intent” from the dropdown.
- On the Submit Letter of Intent page, select the institution from which you are submitting this LOI from the Institution dropdown. If you are associated with only one institution in the system, there will only be one institution in the dropdown.
- Note that you must select one and only one PI per LOI; to do so, click the “Select PI” button on the far right side of the screen. Find the appropriate PI from the list of all registered users from your institution returned by PAMS. (Hint: You may have to sort, filter, or search through the list if it has multiple pages.) Click the “Actions” link in the Options column next to the appropriate PI to obtain a dropdown menu. From the dropdown, choose “Select PI.”
- If the PI for whom you are submitting does not appear on the list, it means he or she has not yet registered in PAMS. For your convenience, you may have PAMS send an email invitation to the PI to register in PAMS. To do so, click the “Invite PI” link at the top left of the “Select PI” screen. You can enter an optional personal message to the PI in the “Comments” box, and it will be included in the email sent by PAMS to the PI. You must wait until the PI registers before you can submit the LOI. Save the LOI for later work by clicking the “Save” button at the bottom of the screen. It will be stored in “My Letters of Intent” for later editing.
- Enter a title for your letter of intent.
- Select the appropriate technical contact from the Program Manager dropdown.
- To upload the LOI file into PAMS, click the “Attach File” button at the far right side of the screen. Click the “Browse” (or “Choose File” depending on your browser) button to search for your file. You may enter an optional description of the file you are attaching. Click the “Upload” button to upload the file.
- At the bottom of the screen, click the “Submit to DOE” button to save and submit the LOI to DOE.
- Upon submission, the PI will receive an email from the PAMS system <PAMS.Autoreply@science.doe.gov> acknowledging receipt of the LOI.

You are encouraged to register for an account in PAMS at least a week in advance of the LOI submission deadline so that there will be no delays with your submission.

<p>WARNING: The PAMS website at https://pamspublic.science.energy.gov/ will permit you to edit a previously submitted LOI in the time between your submission and the deadline. If you choose to edit, doing so will remove your previously submitted version</p>

from consideration. If you are still editing at the time of the deadline, you will not have a valid submission. Please pay attention to the deadline.

2. Pre-proposal

Not applicable.

C. PROPOSAL SUBMISSION AND CONTENT

1. Summary of Proposal Contents

Each DOE National Laboratory proposal will contain the following sections:

- A Cover Page, entered into PAMS as structured data using the on-screen form
- Proposal, combined into a single pdf containing the following information:
 - Proposal Title Page
 - Table of Contents
 - Project Narrative (**limited to 15 pages**, following the five-section outline provided)
 - Appendix 1: Biographical Sketch(es)
 - Appendix 2: Bibliography and References Cited
 - Appendix 3: Facilities and Other Resources
 - Appendix 4: Other Attachments (optional)

SUBMISSION INSTRUCTIONS

Completed proposals must be submitted into the DOE SC Portfolio Analysis and Management System (PAMS) at <https://pamspublic.science.energy.gov>.

Important Instructions to the Sponsored Research Office of Submitting Institutions: SC requires that you create one single machine readable PDF file that contains the DOE Title Page, project narrative, biographical sketch, current and pending support, bibliography and references cited, facilities and other resources, equipment, data management plan, and other attachments. This single PDF file may not be scanned from a printed document and must be uploaded in PAMS. This must be a plain PDF file consisting of text, numbers, and images without editable fields, signatures, passwords, redactions, or other advanced features available in some PDF-compatible software. Do not use PDF portfolios or binders. The research narrative will be read by SC staff using the full version of Adobe Acrobat: Please ensure that the narrative is readable in Acrobat. If combining multiple files into one research narrative, ensure that a PDF portfolio or binder is not created. If creating PDF files using any software other than Adobe Acrobat, please use a “Print to PDF” or equivalent process to ensure that all content is visible in the research narrative. Once a research narrative has been assembled, please submit the combined research narrative file through a “Print to PDF” or equivalent process to ensure that all content is visible in one PDF file that can be viewed in Adobe Acrobat.

WARNING: The PAMS website at <https://pamspublic.science.energy.gov> will permit you to edit a previously submitted proposal in the time between your submission and the

deadline. If you choose to edit, doing so will remove your previously submitted version from consideration. If you are still editing at the time of the deadline, you will not have a valid submission. Please pay attention to the deadline.

PROPOSAL DUE DATE

The proposal due date is printed on the cover of this Announcement.

LETTERS

Letters of support are not required, but may be included in the designated Appendix.

2. Proposal

DOE TITLE PAGE

(PART OF PROJECT NARRATIVE)

The following proposal title page information may be placed on a plain page. No form is required. This cover page will not count in the project narrative page limitation.

- The project title:
- Applicant/Institution:
- Street Address/City/State/Zip:
- Postal Address:
- Administrative Point of Contact name, telephone number, email:
- Lead PI name, telephone number, email:
- DOE National Laboratory Announcement Number:
- DOE/SC Program Office:
- DOE/SC Program Office Technical Contact:

PROJECT NARRATIVE

The project narrative **must not exceed a page limit of 15 pages** of technical information, including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard letter-size (8.5 x 11 inch) paper with 1 inch margins (top, bottom, left, and right). The font must not be smaller than 11 point. Merit reviewers will only consider the number of pages specified in the first sentence of this paragraph. This page limit does not apply to the Appendices.

Do not include any Internet addresses (URLs) that provide supplementary or additional information that constitutes a part of the proposal. Merit reviewers are not required to access Internet sites; however, Internet publications in a list of references will be treated identically to print publications.

The project narrative must follow the following five-section outline:

Section 1. Facility Vision and Strategy: This section must articulate a vision and strategy for a new Hub-and-Spoke model SC User Facility that fits within and adds world-class capabilities to the ASCR and SC user facilities ecosystem, consistent with the requirements and description provided in Section I – DOE NATIONAL LABORATORY OPPORTUNITY DESCRIPTION. The vision and strategy must describe how the proposed facility will enable the DOE Integrated Research Infrastructure vision *broadly across DOE and SC scientific and research domains*. Additionally, this section must describe the vision for the HPDF lead laboratory’s strategic partnerships with future HPDF Spokes, with the other ASCR facilities, other SC user facilities, other DOE national laboratories, and other key partners.

Section 2. Facility Composition: This section must provide a summary description of the types of *Components* (physical infrastructure, systems, equipment, software), *Expertise* (personnel) and *Core Activities* needed to establish the facility and accomplish the facility mission, consistent with the vision and strategy the proposal articulates in Section 1. At this pre-conceptual stage of the HPDF project, this description need not speculate regarding specific vendor technologies; instead, the description should provide insight into the types of resources and activities required.

- The *Components* and *Expertise* should differentiate between in-situ centralized resources located at the Hub site and distributed/remote resources needed at the future prospective Spokes sites. Proposers are not required to predict or speculate about the locations of the Spokes sites.
- *Components* may include, but are not limited to:
 - Data center infrastructure;
 - Data management resources, such as tiered storage;
 - Computing resources;
 - Networking resources, including high-performance local networks (on site) and sufficiently capable connections to ESnet.
 - Software resources.
- *Core Activities* may include, but are not limited to:
 - Research and development, potentially with vendor-partners;
 - Research community engagement;
 - Workforce development and recruiting;
 - Outreach.

Section 3. Facility Operational Model: This section must provide an outline of the envisaged operational model (after project completion), including a description of how the facility will conduct its mission employing state-of-the-art scientific, engineering, and operational principles. This section should include descriptions of the resources envisioned for allocation, the user services model, the approach to performance measurement, and any preferred or required operational coordination with other ASCR facilities, other DOE national laboratories, and/or user facilities, (for example, to orchestrate high reliability, operational resiliency, or other operational goals). Topics worthy of consideration include, but are not limited to:

- **Resource allocation:** allocation and operation of resources, user services, performance measurement, and fail-over capabilities in concert with other ASCR facilities.
- **Policies and practices:** adoption and promotion of principles and practices in data curation, repository management, FAIR/open science, and trusted data and cybersecurity protocols and practices.
- **Innovation:** advancing the state-of-the-art in research and innovation in high performance data management.
- **Workforce development:** creating and nurturing a world-class, diverse workforce in the mission areas.

Section 4. Phased Project Timetable of Activities: This section must provide an outline of both (1) a detailed near-term activity plan towards achieving CD-1, including the steps to achieving a conceptual design and development of project Key Performance Parameters; and (2) a look-ahead longer-term activity timetable with major project milestones for conceptual design, final design, project-pre-planning, project implementation, transition to operations, and facility stewardship. This section must incorporate a description of a phased approach to the facility project that builds expertise, establishes key partnerships, refines key design requirements, and fulfills urgent DOE mission needs on the path to facility completion and transition to operations.

The proposal should use a planning assumption of the low end of the total project cost range (\$300 million). Proposals are invited to provide a multi-year budget and hiring prospectus, although DOE acknowledges that such a prospectus may be a rough estimate at this early stage of the project.

Section 5. Project Management Approach and Plan: This section must provide a description of how the project would be managed in accordance with DOE Order 413.3B and demonstrate that the proposers possess the management expertise to accomplish the envisioned project.

APPENDIX 1: BIOGRAPHICAL SKETCH

Provide a biographical sketch for the PI and each senior/key person as an appendix to your technical narrative.

- The PI is the person who will serve as Project Director in the early stages of project definition and execution.
- The senior/key persons are those who will serve under the Project Director as the core project team in the early stages of project definition and execution.
- 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 (curriculum vitae) for each person must not exceed 3 pages when printed on letter-size (8.5 x 11 inch) paper with 1 inch margins (top, bottom, left, and right) with font not smaller than 11 point

A biographical sketch is to provide information that can be used by reviewers to evaluate the PI's potential for leadership within the scientific community. Examples of information of interest are invited and/or public lectures, awards received, scientific program committees, conference or workshop organization, professional society activities, special international or industrial partnerships, reviewing or editorship activities, or other scientific leadership experiences.

SC requires the use of the format approved by the National Science Foundation (NSF), which may be generated by the Science Experts Network Curriculum Vitae (SciENCv), a cooperative venture maintained at <https://www.ncbi.nlm.nih.gov/sciencv/>, and is also available at <https://nsf.gov/bfa/dias/policy/nsfapprovedformats/biosketch.pdf>. If an interagency common format for a biographical sketch has been promulgated, that format must be used in a proposal. The use of a format required by another agency is intended to reduce the administrative burden to researchers by promoting the use of common formats.

Requested information may be appended to a biographical sketch, whether produced from a fillable PDF or in SciENCv.

SC strongly recommends the use of SciENCv to reduce administrative burden by allowing the use of digital persistent identifiers, including the Open Researcher and Contributor ID (ORCID).

Do not attach a listing of individuals who should not be used as merit reviewers: This information is no longer collected as part of a biographical sketch.

APPENDIX 2: 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. For research areas where there are routinely more than ten coauthors of archival publications, you may use an abbreviated style such as the *Physical Review Letters* (PRL) convention for citations (listing only the first author). For example, your paper may be listed as, "A Really Important New Result," A. Aardvark et. al. (MONGO Collaboration), PRL 999. 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 proposal. Provide the Bibliography and References Cited information as an appendix to your project narrative.

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

APPENDIX 3: 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. For proposed investigations requiring access to experimental user facilities maintained by institutions other than the applicant, please provide a document from the facility manager confirming that the researchers will have access to the facility. Please provide the Facility and Other Resource information as an appendix to your project narrative.

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

APPENDIX 4: OTHER ATTACHMENT

If you need to elaborate on your responses to the PAMS Cover Page, please provide the Other Attachment information as an appendix to your proposal narrative. Information not easily accessible to a reviewer may be included in this appendix, but do not use this appendix to circumvent the page limitations of the proposal. Reviewers are not required to consider information in this appendix.

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

3. Budget and Justification

While PAMS will present you with the ability to enter a budget and a budget justification, this Announcement does not request any budgetary information. Either mark the budget as “Complete” or enter zeroes in every field and then mark the budget as “Complete.”

4. How to Prepare and Submit a Proposal

SUBMITTING A PROPOSAL

The following information is provided to help with proposal submission. Detailed instructions and screen shots can be found in the user guide. To find the user guide, click the “External User Guide” link on the PAMS home page. Onscreen instructions are available within PAMS.

- Log into PAMS. From the proposals tab, click the “View DOE National Laboratory Announcements” link and find the current announcement in the list. Click the “Actions/Views” link in the Options column next to this Announcement to obtain a dropdown menu. Select “Submit Proposal” from the dropdown.
- Note that you must select one and only one Principal Investigator (PI) per proposal; to do so, click the “Select PI” button on the far right side of the screen. Find the appropriate PI from the list of all registered users from your institution returned by PAMS. (Hint: You may have to sort, filter, or search through the list if it has multiple pages.) Click the “Actions” link in the Options column next to the appropriate PI to obtain a dropdown menu. From the dropdown, choose “Select PI.”
- If the PI for whom you are submitting does not appear on the list, it means he or she has not yet registered in PAMS. For your convenience, you may have PAMS send an email invitation to the PI to register in PAMS. To do so, click the “Invite PI” link at the top left of

the “Select PI” screen. You can enter an optional personal message to the PI in the “Comments” box, and it will be included in the email sent by PAMS to the PI. You must wait until the PI registers before you can submit the proposal. Save the proposal for later work by selecting “Save” from the dropdown at the bottom of the screen and then clicking the “Go” button. It will be stored in “My Proposals” for later editing. As a minimum, you must complete all the required fields on the PAMS cover page before you can save the proposal for the first time.

- The cover page, budget, and attachments sections of the lab proposal are required by PAMS before it can be submitted to DOE.
- Complete the sections in PAMS one at a time, starting with the cover page and following the instructions for each section.
- Click the “+View More” link at the top of each section to expand the onscreen instructions. On the budget section, click the “Budget Tab Instructions” link to obtain detailed guidance on completing the budget form.
- Save each section by selecting either “Save” (to stay in the same section) or “Save... and Continue to the Next Section” (to move to the next section) from the dropdown menu at the bottom of the screen, followed by clicking the “Go” button.
- If you save the proposal and navigate away from it, you may return later to edit the proposal by clicking the “View My Existing Proposals” or “My Proposals” links within PAMS.
- You must enter a budget for each annual budget period.
- You must also enter a budget for each proposed sub-award. The sub-award section can be completed using the same steps used for the budget section.
- In the attachments section of the lab proposal, the abstract, the budget justification, and the proposal narrative are required and must be submitted as separate files.
- You must bundle everything other than the budget, abstract, and budget justification into one single PDF file to be attached under “Proposal Attachment.”
- Do not attach anything under “Other Attachments.”
- To upload a file into PAMS, click the “Attach File” button at the far right side of the screen. Click the “Browse” (or “Choose File” depending on your browser) button to search for your file. You may enter an optional description of the file you are attaching. Click the “Upload” button to upload the file.
- Once you have saved all of the sections, the “Submit to DOE” option will appear in the dropdown menu at the bottom of the screen.
- To submit the proposal, select “Submit to DOE” from the dropdown menu and then click the “Go” button.
- Upon submission, the PI will receive an email from the PAMS system <PAMS.Autoreply@science.doe.gov> acknowledging receipt of the proposal.
- The proposal will also appear under My Proposals with a Proposal Status of “Submitted to DOE.”

Please only submit a PAMS lab technical proposal in response to this Announcement; do not submit a DOE Field Work Proposal (FWP) at this time. SC will request FWPs later from those selected for funding consideration under this Announcement.

PROPOSAL PREPARATION

All files submitted a part of a proposal must be PDF files unless otherwise specified in this Announcement. Attached PDF files must be plain files consisting of text, numbers, and images without editable fields, signatures, passwords, redactions, or other advanced features available in some PDF-compatible software. Do not use PDF portfolios or binders.

Please note the following restrictions that apply to the names of all files attached to your proposal:

- Please limit file names to 50 or fewer characters
- Do not attach any documents with the same name. All attachments must have a unique name.
- Please use only the following characters when naming your attachments: A-Z, a-z, 0-9, underscore, hyphen, space, period, parenthesis, curly braces, square brackets, ampersand, tilde, exclamation point, comma, semi colon, apostrophe, at sign, number sign, dollar sign, percent sign, plus sign, and equal sign. Attachments that do not follow this rule may cause the entire proposal to be rejected or cause issues during processing.

RESUBMISSION OF PROPOSALS

Proposals submitted under this announcement may be withdrawn from consideration by using the PAMS website at <https://pamspublic.science.energy.gov>. Proposals may be withdrawn at any time between when the applicant submits the proposal and when DOE makes the proposal available to merit reviewers. Such withdrawals take effect immediately and cannot be reversed. Please exercise due caution. After the proposal is made available to merit reviewers, the applicant may contact the DOE program office identified in this Announcement to request that it be withdrawn.

After a proposal is withdrawn, it may be resubmitted, if this Announcement is still open for the submission of proposals. Such resubmissions will only count as one submission if this Announcement restricts the number of proposals from an applicant.

IMPROPER CONTENTS OF PROPOSALS

Proposals submitted under this Announcement will be stored in controlled-access systems, but they may be made publicly available if an award is made. As such, it is critical that applicants follow these guidelines:

- Do not include information subject to any legal restriction on its open distribution, whether classified, export control, or unclassified controlled nuclear information.
- Do not include sensitive and protected personally identifiable information, including social security numbers, birthdates, citizenship, marital status, or home addresses. Pay particular attention to the content of biographical sketches and curriculum vitae.
- Do not include letters of support from Federal officials.
- Do not include letters of support on Federal letterhead. Letters that are not letters of support (such as letters confirming access to sites, facilities, equipment, or data; or letters from cognizant contracting officers) may be on Federal letterhead.
- Clearly mark all proprietary or trade-secret information.

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

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

E. SUBMISSION DATES AND TIMES

1. Letter of Intent Due Date

Not applicable.

2. Pre-proposal Due Date

Not applicable.

3. Proposal Due Date

The proposal due date is printed on the cover of this Announcement.

You are encouraged to transmit your proposal well before the deadline. Proposals may be submitted at any time between the publication of this Announcement and the stated deadline.

4. Late Submissions

Proposals received after the deadline will not be reviewed or considered for award.

Section V –PROPOSAL REVIEW INFORMATION

A. CRITERIA

1. Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for the award; (2) the information required by the Program Announcement has been submitted; (3) all mandatory requirements are satisfied; (4) the proposed project is responsive to the objectives of the Program Announcement, and (5) the proposed project is not duplicative of programmatic work. Proposals that fail to pass the initial review will not be forwarded for merit review and will be eliminated from further consideration.

2. Merit Review Criteria

The proposals will be subjected to merit review (peer review) and will be evaluated against the following criteria:

1. Scientific Merit;
2. Technical Merit;
3. Appropriateness of the Operations Model;
4. Schedule for Achieving Goals;
5. Assurance of Successful Project Delivery;
6. Value Added.

The evaluation process will also include program policy factors such as the relevance of the proposed research to the terms of the DOE National Laboratory Announcement and the agency's programmatic needs, the balance of activities within the program, and the utility of the proposed activities to the broader scientific community. 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 a proposal constitutes agreement that this is acceptable to the investigator(s) and the submitting institution.

The questions below are provided to the merit reviewers to elaborate the criteria; all questions are sub-criteria.

1. SCIENTIFIC MERIT

- Does the scientific vision and strategy advance the DOE and SC mission and the DOE Integrated Research Infrastructure vision?
- Does the scientific vision and strategy advance identified science drivers and data management and lifecycle needs of multiple SC programs, SC user facilities, and SC science domains?

2. TECHNICAL MERIT

- Does the technical approach address the scientific vision and strategy?
- Does the proposal develop a unique set of high-performance data infrastructure, capabilities, and tools with reasonable technology readiness levels to be deployable?
- Does the technical approach complement, rather than duplicate, other DOE-supported research computing infrastructure and facility capabilities?
- Does the technical approach provide a cohesive plan for connection of HPDF infrastructure to the ESnet backbone network?

3. APPROPRIATENESS OF THE OPERATIONS MODEL

- Is the proposed operations model likely to enable the facility to become a national and global leader in scientific data lifecycle management and stewardship?
- Is the proposed approach to managing the centralized Hub resources and the distributed Spokes resources reasonable?

4. SCHEDULE FOR ACHIEVING GOALS

- Does the proposal articulate a phased approach that will build expertise, establish key partnerships, refine key design requirements, and fulfill urgent DOE mission needs?
- Is the proposal's near-term activity plan to achieve CD-1 through community engagement and development of technical, operational, budgetary, and financial plans reasonable?
- Is the proposal's longer-term timeline for major project milestones reasonable?

5. ASSURANCE OF SUCCESSFUL PROJECT DELIVERY

- Does the proposal present sufficient evidence that the proposing organization has a sound strategy for assembling a highly effective project execution team, key technical, managerial, and administrative resources, and the institutional capacity and capability considering past performance on complex, high-risk projects?
- Does the proposal present sufficient evidence that the proposing lead PI and senior/key personnel have proven records of success in program and personnel management of diverse teams of scientific and technical professionals for projects of comparable complexity and magnitude?
- Does the proposal present sufficient evidence that the senior/key personnel have proven records of research, technology development, or operations in the disciplines needed for success in this project?

6. VALUE ADDED

- Does the proposal provide evidence of benefits to the DOE, direct and collateral, for the siting of the HPDF Hub at the proposed location?
- Does the proposal provide evidence of state- and/or- local-level support for development of the facility's capabilities and regional institutional connections?

- Does the proposal provide any relevant in-kind contributions that enhance the overall value of the prospective HPDF Hub project to DOE?

B. REVIEW AND SELECTION PROCESS

1. Merit Review

Proposals that pass the initial review will be subjected to a formal merit review and will be evaluated based on the criteria above.

2. Program Policy Factors

The Selection Official may consider any of the following program policy factors in making the selection, listed in no order of significance:

- Availability of funds
- Relevance of the proposed activity to SC priorities
- Ensuring an appropriate balance of activities within SC programs
- Performance under current awards
- Geographic diversity and operational resilience for the location of the Hub in relation to the architecture of the ESnet6 backbone network⁵
- The value to the government of in-kind contributions and added value considerations
- Diversification of supported activities
- Maximizing the use of DOE user facilities

3. Selection

The Selection Official will consider the findings of the merit review and may consider any of the Program Policy Factors described above.

4. Discussions and Award

The Government may enter into discussions with a selected applicant for any reason deemed necessary. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

⁵ Fiscal Year 2022 President's Budget Request (https://science.osti.gov/-/media/budget/pdf/sc-budget-request-to-congress/fy-2022/FY_2022_SC_ASCR_Cong_Budget.pdf)

Section VI - ADMINISTRATION INFORMATION

A. NOTICES

1. Notice of Selection

Selected Applicants Notification: DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance.

Non-selected Notification: Organizations whose proposals have not been selected will be advised as promptly as possible. This notice will explain why the proposal was not selected.

2. Notice of Award

A work authorization/contract modification issued by the contracting officer is the authorizing award document.

B. PAMS REGISTRATION

1. How to Register in PAMS

You must register in PAMS to submit a pre-proposal, letter of intent, or DOE national laboratory proposal.

You may use the Internet Explorer, Firefox, Google Chrome, or Safari browsers to access PAMS.

Notifications sent from the PAMS system will come from the PAMS email address <PAMS.Autoreply@science.doe.gov>. Please make sure your email server/software allows delivery of emails from the PAMS email address to yours.

Registering to PAMS is a two-step process; once you create an individual account, you must associate yourself with (“register to”) your institution. Detailed steps are listed below.

CREATE PAMS ACCOUNT:

To register, click the “Create New PAMS Account” link on the website <https://pamspublic.science.energy.gov/>.

- Click the “No, I have never had an account” link and then the “Create Account” button.
- You will be prompted to enter your name and email address, create a username and password, and select a security question and answer. Once you have done this, click the “Save and Continue” button.
- On the next page, enter the required information (at least one phone number and your mailing address) and any optional information you wish to provide (e.g., FAX number, website, mailstop code, additional email addresses or phone numbers, Division/Department). Click the “Create Account” button.

- Read the user agreement and click the “Accept” button to indicate that you understand your responsibilities and agree to comply with the rules of behavior for PAMS.
- PAMS will take you to the “Having Trouble Logging In?” page. (If you have been an SC merit reviewer or if you have previously submitted a proposal, you may already be linked to an institution in PAMS. If this happens, you will be taken to the PAMS home page.)

REGISTER TO YOUR INSTITUTION:

1. Click the link labeled “Option 2: I know my institution and I am here to register to the institution.” (Note: If you previously created a PAMS account but did not register to an institution at that time, you must click the Institutions tab and click the “Register to Institution” link.)
2. PAMS will take you to the “Register to Institution” page.
3. Type a word or phrase from your institution name in the field labeled, “Institution Name like,” choose the radio button next to the item that best describes your role in the system, and click the “Search” button. A “like” search in PAMS returns results that contain the word or phrase you enter; you do not need to enter the exact name of the institution, but you should enter a word or phrase contained within the institution name. (If your institution has a frequently used acronym, such as ANL for Argonne National Laboratory or UCLA for the Regents of the University of California, Los Angeles, you may find it easiest to search for the acronym under “Institution Name like.” Many institutions with acronyms are listed in PAMS with their acronyms in parentheses after their names.)
4. Find your institution in the list that is returned by the search and click the “Actions” link in the Options column next to the institution name to obtain a dropdown list. Select “Add me to this institution” from the dropdown. PAMS will take you to the “Institutions – List” page.
5. If you do not see your institution in the initial search results, you can search again by clicking the “Cancel” button, clicking the Option 2 link, and repeating the search.
6. If, after searching, you think your institution is not currently in the database, click the “Cannot Find My Institution” button and enter the requested institution information into PAMS. Click the “Create Institution” button. PAMS will add the institution to the system, associate your profile with the new institution, and return you to the “Institutions – List” page when you are finished.

For help with PAMS, click the “External User Guide” link on the PAMS website, <https://pamspublic.science.energy.gov/>. You may also contact the PAMS Help Desk, which can be reached Monday through Friday, 9AM – 5:30 PM Eastern Time. Telephone: (855) 818-1846 (toll free) or (301) 903-9610, email: sc.pams-helpdesk@science.doe.gov. All submission and inquiries about this Announcement should reference the number printed on the cover page.

2. How to View Proposals in PAMS

Upon submission, the PI will receive an email from the PAMS system <PAMS.Autoreply@science.doe.gov> acknowledging receipt of the proposal.

Upon submission, the proposal will appear under My Proposals for the PI and the Submitter with a Proposal Status of “Submitted to DOE.”

Section VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

For help with PAMS, click the “External User Guide” link on the PAMS website, <https://pamspublic.science.energy.gov/>. You may also contact the PAMS Help Desk, which can be reached Monday through Friday, 9AM – 5:30 PM Eastern Time. Telephone: (855) 818-1846 (toll free) or (301) 903-9610, Email: sc.pams-helpdesk@science.doe.gov. All submission and inquiries about this DOE National Laboratory Program Announcement should reference the Announcement number printed on the cover.

Please contact the PAMS help desk for technological issues with the PAMS system.

Questions regarding the specific program areas and technical requirements may be directed to the technical contacts listed for each program within the DOE National Laboratory Program Announcement or below.

Please contact the program staff with all questions not directly related to the PAMS system.

B. AGENCY CONTACTS

PAMS Customer Support	855-818-1846 (toll-free) 301-903-9610 sc.pams-helpdesk@science.doe.gov
Program Manager Scientific Contact	Dr. Benjamin Brown 301-903-7785 benjamin.brown@science.doe.gov

C. DEPARTMENT OF ENERGY, OFFICE OF INSPECTOR GENERAL HOTLINE:

The Office of Inspector General (OIG) maintains a Hotline to facilitate the reporting of allegations of fraud, waste, abuse, or mismanagement in DOE programs or operations. If you wish to report such allegations, you may call, send a letter, or email the OIG Hotline ighotline@hq.doe.gov. Allegations may be reported by DOE employees, DOE contractors, or the general public. OIG contact information is available at <https://energy.gov/ig/services>.