U.S. DEPARTMENT of ENERGY | Office of Science

Advanced Scientific Computing Research (ASCR)

THE AMERICAN SCIENCE CLOUD (AmSC)

DOE National Laboratory Program Announcement Number:
LAB 25-3555

Announcement Type: Initial

Announcement Issue Date:	August 22, 2025
Submission Deadline for Proposals:	September 15, 2025, at 5 PM ET

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I. Basic Information

U.S. Department of Energy (DOE)
Office of Science (SC)

Executive Summary

The American Science Cloud (AmSC), defined in Section 50404 "Transformational artificial intelligence models" of the One Big Beautiful Bill (OBBB) Act (P.L. 119-21), will be a system of United States government, academic, and private-sector programs and infrastructures utilizing cloud computing technologies to facilitate and support scientific research, data sharing, and computational analysis across various disciplines while ensuring compliance with applicable legal, regulatory, and privacy standards. The DOE SC program in Advanced Scientific Computing Research (ASCR) hereby announces its interest in receiving proposals from eligible DOE National Laboratories to establish an integrated team to lead the development and deployment of AmSC. AmSC will serve as the enabling software and hardware infrastructure for DOE's AI data and model development efforts in furtherance of SC's mission and in fulfillment of Section 50404 of the OBBB Act. A companion announcement solicits laboratory-led proposals to establish The Transformational AI Models Consortium, and a subsequent funding opportunity will solicit proposals for public/private partnerships to develop self-improving AI models across various science and engineering domains as part of The Transformational AI Models Consortium.

Funding Details

Expected total available funding	$40,000,000
Expected number of awards	1-10
Expected dollar amount of individual awards	$1,000,000 - $40,000,000
Expected award project period	1-2 years

DOE anticipates $40 million in funds from the One Big Beautiful Bill Act will be made available to implement the American Science Cloud. Proposals responding to this call should use a planning assumption of $40 million while articulating the potential for additional funds (up to $75 million) to add impactful scope.

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.

Issuance of awards will depend on the results of peer review, program policy factors, and availability of funds. The selection will aim at ultimate formation of one American Science Cloud laboratory partnership.

This call will not result in awards for the training of transformational AI models, which are covered by different solicitations.

Key Facts

Announcement Title	The American Science Cloud (AmSC)
Announcement Number	LAB 25-3555
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Key Dates

Key dates are printed on the cover of this Announcement.

Agency Contact Information

PAMS Customer Support	855-818-1846 (toll-free) 301-903-9610 sc.pams-helpdesk@science.doe.gov
Technical/Scientific Program Contact	Dr. Pavel Lougovski 240-961-8980 pavel.lougovski@science.doe.gov Dr. Benjamin Brown 301-903-7785 benjamin.brown@science.doe.gov

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.

Recommendation

SC encourages you to register in all systems as soon as possible. You are also encouraged to submit proposals well before the deadline.

II. Eligibility

A. Eligible Applicants

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

B. Cost Sharing

Cost sharing is not required.

C. Eligible Individuals

Eligible individuals with the skills, knowledge, and resources necessary to carry out the proposed research as a Principal Investigator (PI) are invited to work with their organizations to develop a proposal. Individuals from underrepresented groups as well as individuals with disabilities are always encouraged to apply.

D. Limitations on Submissions

DOE invites all national laboratories to respond to this Program Announcement for the American Science Cloud partnership formation. Applicants are encouraged to partner with other national laboratories.

This call distinguishes three roles: AmSC Lead, Host, and Infrastructure Partner:

- The AmSC Lead orchestrates and coordinates the whole AmSC partnership and all AmSC Infrastructure Partners. Only SC National Laboratories[1] are eligible to submit proposals to be the AmSC Lead. Each SC national laboratory is limited to one submission as the Lead of the AmSC laboratory partnership.
- A Host orchestrates and coordinates a team of Infrastructure Partners. Each SC National Laboratory can participate in or serve as the Host lab for an unlimited number of AmSC Infrastructure Partner teams. Every Infrastructure Partner team should submit its subproposal via its host to be included in the Appendix. (Please see Sec IV. 3 of this call for detailed instructions). Each non-SC National Laboratory is limited to two submissions of Infrastructure Partner subproposals.

A proposal to serve as the Lead may also incorporate an unlimited number of Host and Infrastructure Partner subproposals involving an unlimited number of DOE laboratories.

1 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.

Should DOE receive submissions in excess of the applicable limits, DOE reserves the right, in its sole discretion, to request additional or clarifying information to ascertain the institution's intended submissions. Otherwise, DOE will consider the latest received submissions to be the institution's intended submissions.

Proposals in excess of the limited number of submissions will be declined without review.

LIMITATIONS ON PI

The PI on a proposal may also be listed as a senior or key personnel, including in any role on a proposed subaward, on an unlimited number of separate submissions.

PIs must be in a permanent position at the applicant institution, whether tenured, tenure-track, or a staff appointment. Individuals in term-limited appointments, whether as adjunct, visiting faculty, fellows, or similar appointments, are not eligible to be proposed as a PI. Individuals in part-time permanent positions are eligible to be proposed as a PI.

Individuals receiving less than half of their salary and benefits from a DOE/NNSA National Laboratory may not be named as the PI in a proposal under this Announcement, regardless of any arrangement between the Laboratory and another institution.

III. Program Description

A. Purpose

The DOE SC program in Advanced Scientific Computing Research (ASCR) hereby announces its interest in receiving proposals from eligible DOE National Laboratories to establish an integrated team to lead the development and deployment of The American Science Cloud (AmSC). The AmSC, defined in Section 50404 "Transformational artificial intelligence models" of the One Big Beautiful Bill (OBBB) Act (P.L. 119-21), will be a system of United States government, academic, and private-sector programs and infrastructures utilizing cloud computing technologies to facilitate and support scientific research, data sharing, and computational analysis across various disciplines while ensuring compliance with applicable legal, regulatory, and privacy standards. The AmSC will serve as the enabling software and hardware infrastructure for DOE's AI data and model development efforts in furtherance of SC's mission and in fulfillment of Section 50404 of the OBBB Act.

A companion announcement solicits laboratory-led proposals to establish The Transformational AI Models Consortium, and a subsequent funding opportunity will solicit proposals for public/private partnerships, referred to as AI Model teams, to develop self-improving AI models across various science and engineering domains as part of The Transformational AI Models Consortium. These AI Model teams are expected to span at least the areas described in Section 50404 of the OBBB Act: discovery science and engineering accelerating innovation in next-generation microelectronics and new energy technologies. The consortium will also work to define standards and best practices for AI-ready data and AI models, in close coordination with the AmSC partnership. The AmSC is the integrated software and hardware data infrastructure serving the needs of the AI Model teams and providing the AI models to the scientific community. DOE's vision is that the AmSC formally begins through the OBBB-funded effort, and extends forward into the future as a flexible, extensible platform that both drives and is responsive to the incorporation of DOE's unique scientific data sources.

SUPPLEMENTARY INFORMATION

For the purposes of this call, DOE defines and distinguishes between AmSC Infrastructure Partners and Data Providers:

- AmSC Infrastructure Partners are computing infrastructure, data infrastructure, networking infrastructure, and infrastructure services providers who are *directly involved in developing and deploying* the AmSC Application Programming Interface (API) and hardware ecosystem and pre-production hardware environment. Examples may include

but are not limited to the ASCR Facilities (ALCF, ESnet, NERSC, OLCF)[2], the HPDF Project, and other DOE science instruments and user facilities.
- Data Providers are creators, generators, and/or curators of DOE data who will be *users, but not developers, of* the AmSC API ecosystem and/or pre-production hardware environment.

The purpose of this Announcement is to identify the SC National Laboratory or National Laboratories who will lead and manage the AmSC Infrastructure Partners and to identify AmSC Infrastructure Partners. Proposers to this Announcement should not include Data Providers.

The AmSC Lead will be responsible for managing the Infrastructure Partners into a cohesive, integrated team of teams. A responsive proposal for the AmSC Lead should address three aspects of the first stage effort for the AmSC : 1) Management: the framework and the management plan for the AmSC, built upon the concept and framework for DOE's Integrated Research Infrastructure; 2) Hardware and Services Integration: an integrated approach to creating the AmSC hardware and pre-production environment, including the approach for integrating the High Performance Data Facility (HPDF) in construction as an integral part of the AmSC; 3) Partners: a list of AmSC Infrastructure Partner teams and a plan for scaling up and including more partner teams as the AmSC develops and expands.

The AmSC Infrastructure Partners will assess the AI Model teams' requirements and will translate these requirements into a performant cloud-like computing, data, scientific instrument, and software infrastructure, with technical and management approach that is extensible and scalable for the long term. The term "cloud-like" means that the complexity of the underlying infrastructure is abstracted away from the end-user, drastically simplifying the utilization of the infrastructure and its composability into complex research workflows. This infrastructure should seek efficiencies in development and deployment, and enhance the potential utilization of commercial cloud technologies for DOE AI efforts, by building upon widely used and robust cloud technologies, such as:
- Container and workflow-management software commonly deployed on commercial cloud-computing systems.
- Interoperability and integration between on-premises computing resources and commercial cloud-computing systems.

The AmSC Infrastructure Partners will architect, develop, deploy, and maintain the production-grade AmSC API that enables users to access DOE SC research infrastructure (user facilities, instruments, laboratory research platforms, datasets, etc.) as code and dramatically increase scientific productivity.

The AmSC Infrastructure Partners will design and deploy the AmSC pre-production hardware environment with the explicit purpose to test and graduate the AmSC API and

2 For more information on ASCR facilities, see https://science.osti.gov/ascr/Facilities/User-Facilities

interface standards to production systems across DOE data sources, instruments, and facilities.

The AmSC Infrastructure Partners will pursue designs that will foster secure access by non-DOE US partners (industry, academia, other USG agencies, etc.).

The primary objective of these integrated efforts is the simultaneous acceleration of the OBBB transformational AI model research and architecture of a durable and extensible AmSC infrastructure. DOE seeks responses that articulate a clear and compelling approach to management of the AmSC Infrastructure Partners to deliver coordinated results with clear deliverables under tight timelines while accommodating the reality that:

- additional AmSC Infrastructure Partners may be added at later points;
- the AI Model teams will be determined at later points; and
- the Data Providers will be determined at later points.

References

1. Stevens, Rick, Taylor, Valerie, Nichols, Jeff, Maccabe, Arthur Barney, Yelick, Katherine, & Brown, David (2020). AI for Science: Report on the Department of Energy (DOE) Town Halls on Artificial Intelligence (AI) for Science. https://doi.org/10.2172/1604756
2. Carter, Jonathan, et al. (2023). Advanced Research Directions on AI for Science, Energy, and Security: Report on Summer 2022 Workshops. https://doi.org/10.2172/1986455
3. Miller, William L., Bard, Deborah, Boehnlein, Amber, Fagnan, Kjiersten, Guok, Chin, Lançon, Eric, Ramprakash, Sreeranjani, Shankar, Mallikarjun, Schwarz, Nicholas, & Brown, Benjamin L. (2023). Integrated Research Infrastructure Architecture Blueprint Activity (Final Report 2023). https://doi.org/10.2172/1984466
4. Ahrens, James, Boehnlein, Amber, Carlson, Rich, Elliot, Joshua, Fagnan, Kjiersten, Ferrier, Nicola, Foster, Ian, Gimpel, Lee, Shalf, John, & Ratner, Dan (2022). Envisioning Science in 2050. https://doi.org/10.2172/1871683
5. Dart, Eli, et al. (2023). ESnet Requirements Review Program Through the IRI Lens: A Meta-Analysis of Workflow Patterns Across DOE Office of Science Programs. https://doi.org/10.2172/2008205
6. USDOE Office of Science (SC) (2021). Toward a Seamless Integration of Computing, Experimental, and Observational Science Facilities: A Blueprint to Accelerate Discovery. https://doi.org/10.2172/1863562
7. National Laboratories Directors Council (2024). Ensuring U.S. Leadership in a Competitive Future. https://nationallabs.org/wp-content/uploads/2024/08/NLDC-Ensuring-US-Leadership-2024.pdf

Open Science

SC is dedicated to promoting the values of openness in Federally-supported scientific research, including, but not limited to, ensuring that research may be reproduced and that the results of Federally-supported research are made available to other researchers. These objectives may be met through any number of mechanisms including, but not limited to, data access plans, data sharing agreements, the use of archives and repositories, and the use of various licensing schemes.

The use of the phrase "open-source" does not refer to any particular licensing arrangement, but is to be understood as encompassing any arrangement that furthers the objective of openness.

DOE expects to release a separate solicitation for AI model teams supporting the development of open models and data sets, proprietary models and data sets, or some combination of both. Accordingly, the consortium must be prepared to support model teams working with a combination of open and proprietary models and data.

Multi-Institutional Teams

SC uses two different mechanisms to support teams of multiple institutions.

COLLABORATIVE PROPOSALS

Collaborative proposals will not be accepted under this Announcement.

SUBAWARDS

Multi-institutional teams may submit one proposal from a designated lead institution with all other team members proposed as subawards.

Other Federal agencies, and another Federal agency's FFRDCs[3] may be proposed as subawardees.

Note that the value of any such proposed subaward will be removed from any such prime award: DOE will make separate awards to Federally-affiliated institutions.

B. Program Goals, Objectives, and Priorities

The Office of Science's (SC) mission is to deliver scientific discoveries and major scientific

3 An authoritative list of all Federally Funded Research and Development Centers (FFRDCs) may be found at https://www.nsf.gov/statistics/ffrdclist/

tools to transform our understanding of nature and advance the energy, economic, and national security of the United States (U.S.). SC is the Nation's largest Federal sponsor of basic research in the physical sciences and the lead Federal agency supporting fundamental scientific research for our Nation's energy future.

SC accomplishes its mission and advances national goals by supporting:

- The frontiers of science—exploring nature's mysteries from the study of fundamental subatomic particles, atoms, and molecules that are the building blocks of the materials of our universe and everything in it to the DNA, proteins, and cells that are the building blocks of life. Each of the programs in SC supports research probing the most fundamental disciplinary questions.
- The 21st Century tools of science—providing the nation's researchers with 28 state-of-the-art national scientific user facilities, the most advanced tools of modern science, propelling the U.S. to the forefront of science, technology development, and deployment through innovation.
- Science for energy and the environment—paving the knowledge foundation to spur discoveries and innovations for advancing the Department's mission in energy and environment. SC supports a wide range of funding modalities from single principal investigators to large team-based activities to engage in fundamental research on energy production, conversion, storage, transmission, and use, and on our understanding of the earth systems.

SC is an established leader of the U.S. scientific discovery and innovation enterprise. Over the decades, SC investments and accomplishments in basic research and enabling research capabilities have provided the foundations for new technologies, businesses, and industries, making significant contributions to our nation's economy, national security, and quality of life

C. Program History

You can learn about SC's history at https://science.osti.gov/About/History. You can read about our achievements at https://science.osti.gov/Science-Features/Science-Highlights. You can find information about all of our awards at https://pamspublic.science.energy.gov/WebPAMSExternal/interface/awards/AwardSearchExternal.aspx.

D. Other Information

Anticipated Award Size

The award size will depend on the results of peer review, program policy factors, and availability of appropriated funds. DOE anticipates that the scope of the American Science Cloud will involve several National Laboratories. DOE will determine and allocate funds to

these partner National Laboratories directly.

Period of Performance

The period of performance is Fiscal Year 2026 with the potential to extend activities into Fiscal Year 2027 based on no-cost extensions. There is urgency to initiate activities in Q1 of FY 2026 and deliver early results in Q4 of FY 2026.

Continuation funding (funding for the second and subsequent budget periods) 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.

IV. Proposal Contents and Format

A. Preliminary Submissions

1. Letter of Intent (LOI)

Not applicable.

2. Pre-proposal

Not applicable.

B. Proposal

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 materials, 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.

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.

C. Component Pieces of the Proposal

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 three-section outline provided)
    - Appendix 1: AmSC Infrastructure Partner(s) Subproposals
    - Appendix 2: Biographical Sketch(es)
    - Appendix 3: Current and Pending Support

- Appendix 4: Bibliography and References Cited
- Appendix 5: Data Management and Sharing Plan

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 Project 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 Project 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 Project Narrative. Once a Project Narrative has been assembled, please submit the combined Project 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://pampspublic.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.

LETTERS

Letters of support or recommendation are not allowed in proposals under this Announcement.

2. Abstract

The project summary/abstract is a summary of the proposed activity suitable for distribution to the public and sufficient to permit potential reviewers to identify conflicts of interest. It must be a self-contained document. The project summary/abstract must be comprised of

- The project title, the PI name and the PI's institutional affiliation, and any

coinvestigators and their institutional affiliations. This information will not count toward the abstract's one-page limit.

- This information must be followed by a statement of the project's objectives, a description of the project, including methods to be employed, and the potential impact of the project (i.e., benefits, outcomes).
- The description of the proposed research may not exceed one page (excluding Project Title and list of investigators) when printed using standard letter-size (8.5-inch x 11-inch) paper with 1-inch margins (top, bottom, left, and right). The body text font must not be smaller than 11 point. Figures and references, if included, must fit within the one-page limit.

A sample is provided below:

Project Title A. Smith, Lead Institution (Principal Investigator) A. Brown, Institution 2 (Co-Investigator) A. Jones, Institution 3 (Co-Investigator) Text of abstract (no more than one page, excluding Project Title and list of investigators)

To attach a Project Summary/Abstract, click "Add Attachment."

If a proposal is recommended for award, the project summary will be used in preparing a public abstract about the award. Award abstracts and titles form a Government document that describes the project and justifies the expenditure of Federal funds in light of the DOE and SC mission statements at https://energy.gov/mission and https://science.osti.gov/about/.

- Do not include any proprietary or sensitive business information.
- DOE may use the abstract to prepare public reports about supported research.

3. Budget and Justification

The budget must be submitted into PAMS using the PAMS budget form.

Budgets are required for the entire project period. A budget form should be completed for each budget period of the award, and a cumulative budget form for the entire project period will be populated by PAMS. PAMS will calculate the cumulative budget totals for you.

A written justification of each budget item is to follow the budget pages. The budget justification should be placed in a separate, single pdf document and attached on the appropriate screen in PAMS. Further instructions regarding the budget and justification are given below and in the PAMS software.

While subawards are listed in PAMS as "optional," that is because the presence of a subaward is optional. If a subaward exists, its budgetary information is required. The standard subaward budget form allows for a maximum of 10 subawards. If a proposal contains more than 10 subawards, please present the budgets for the eleventh and subsequent subawards in a tabular format, followed by the appropriate budget justification, as a part of the lead applicant's budget justification.

4. 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. See Section VIII for instructions on how to mark proprietary proposal information.

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

Section 1. Implementation Approach: This section must articulate an implementation approach that is consistent with the requirements and description provided in Section III – PROGRAM DESCRIPTION.

The implementation approach must list the constituent AmSC Infrastructure Partners (i.e., the co-proposers). Note that each named AmSC Infrastructure Partner is responsible for including a submission for Appendix 1.

The implementation approach must describe how the multi-laboratory partnership will commence and accelerate quickly, using sound agile project management practices[4], to perform as an integrated team of teams to develop and deploy the American Science Cloud while simultaneously engaging with the AI Consortium described in the companion laboratory announcement.

Additionally, this section must describe the implementation approach for integrating American Science Cloud efforts across these known AmSC Infrastructure Partners:

1. The DOE Integrated Research Infrastructure program, which will fund efforts spanning the ASCR Facilities developing tools, services, and policies required for seamless workflows, and efforts to uplift engagement and outreach.
2. The HPDF project, which is charged by ASCR with creating high performance data infrastructure serving the broad requirements of SC and DOE science;
3. ESnet, which is the DOE high performance network user facility, serving the broad data transport needs of SC and DOE science, the DOE national laboratories, and many more DOE sites;
4. ALCF and OLCF, which are the nation's and DOE's leadership computing facilities for science and innovation;
5. NERSC, which is DOE SC's high performance production computing user facility, serving the broad requirements of SC science;

The implementation approach should articulate how the partnership will accommodate additional AmSC Infrastructure Partners at later points.

The implementation approach should assume that ASCR will provide federal program management support to empower the AmSC partnership, promoting quality decision-making aligned with the DOE SC cooperative stewardship model.

The implementation approach should include an organizational chart or diagram illustrating the relationships between the partners and, if applicable, listing key personnel and their roles.

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4 GAO Agile Assessment Guide: Best Practices for Adoption and Implementation. Dec. 2023 https://www.gao.gov/products/gao-24-105506

The implementation approach should contain a table summarizing the budget for management, hardware procurements, and technical effort, as shown in the example table here:

Element	Subtotal budget ($)	Number of Labs/teams
Management		The number of Labs requesting funding for this element
Hardware procurements		The number of Labs requesting funding for this element
Technical Effort		# of AmSC Infrastructure Teams
Total Budget		

Section 2. Technical Scope: This section must articulate how the partnership will address the necessary functional requirements for the AmSC.

This section should contain a table in the format shown immediately below that lists each named AmSC Infrastructure Partner, Partner team leads, host lab of each partner team, scope, and each partner's budget request. The details of each partner team's scope and work plan should be included in Appendix 1.

Example table for the list of AmSC Infrastructure Partners

Infrastructure Partner	Team Lead [the name of the person in this role]	Host Lab [the name of a DOE Laboratory]	Title for Scope description	Requested Budget
Infrastructure Partner 1				
Infrastructure Partner 2				
Infrastructure Partner 3				

- Proposers must address the development of the AmSC API – a system of integrated high-level interfaces that work in unison with the DOE hardware infrastructure and abstract away the complexity of executing computational and experiments workflows for the DOE SC infrastructure users. The proposed AmSC API design must provide security, scalability, and elasticity suitable for workflows and workloads involving protected or sensitive data and AI models. The API design should address, or be extensible to, support for national security workflows and workloads. It should also address the

development and support of a user-centric ecosystem of applications that extend beyond AI models and workflows.

The design should accommodate a spectrum of potential Data Providers as defined in Section I – DOE NATIONAL LABORATORY OPPORTUNITY DESCRIPTION, but need not identify, or seek the endorsement of, specific Data Providers.

The AmSC API architecture must support and include:

1. User identity and access management – a service (or a set of services) that allows user onboarding and policy-based allocation of access rights to DOE and, potentially, non-DOE resources available via AmSC.
2. Resource metering service(s) to streamline the control of allocation-based resource consumption.
3. Telemetry data logging service(s) to provide users with information necessary to debug and execute their workflows using AmSC API.
4. AI data preparation and transformation service(s) and a discoverable AI-ready data catalogue to make DOE data accessible to AmSC users, while promoting alignment of these data services with FAIR (Findable, Accessible, Interoperable, Reusable) data principles and governance approaches.
5. AI model training service(s) to accelerate and streamline scientific AI model training and fine tuning across DOE scientific instruments infrastructure and extendable to cloud service provider resources.
6. AI model inference service(s) and a discoverable AI model catalogue to accelerate scientific workflows and enable automation across DOE infrastructure.
7. Modeling, simulations, and related high performance computer service(s).
8. Extended interfaces to the IRI resources that enable seamless scheduling and execution of computational workloads across ASCR facilities.

Proposers should clearly articulate what AmSC API functionality/services will be available at the end of the 12-month period and sketch out how additional functionality will be added to the AmSC API if the project is extended to an additional period of 12, 24 months.

- In addition, proposers must describe the AmSC pre-production hardware environment architecture and deployment plans. The environment should be deployed in the first 9 months of the project and be used to perform pre-production testing of the AmSC API. At minimum, the environment should represent all ASCR production systems from ALCF, ESnet, NERSC, OLCF and potentially accommodate prototypes from HPDF. Non-ASCR production systems, including cloud service providers, could be considered as well. It must include a secure enclave, where elevated security workloads/data can be deployed/stored.

  Proposers may make the following assumptions relevant to the AmSC Technical Scope:

  - The AI model teams are likely to require large allocations of GPU hours. The AI model teams may receive allocations of computing time and storage from the ASCR HPC

facilities (ALCF, NERSC, OLCF). The AI model teams may utilize non-DOE computing resources that are not included in the scope of this call. The technical scope of this proposal should not include acquisitions of large-scale high performance computing assets.

- ESnet will provide wide-area high performance network services to support the American Science Cloud. The technical scope of this proposal should neither require nor assume network builds to geographic locations not currently connected to ESnet as there is insufficient time during the period of performance to execute such network builds.
- The High Performance Data Facility project will refine its design through the American Science Cloud pre-production testbed development and deployment, and may deploy an early access system in coordination with AmSC-funded efforts.
- DOE headquarters (federal staff) will be responsible for leading and affecting, in close coordination with the AmSC Infrastructure Partners, enabling policies related to cybersecurity, federated identity and authentication; multi-institutional User Agreements that clarify rights in data, rights in IP, and rights in AI models for the scope of work undertaken under this call. The technical scope of this proposal should assume that such policies will enable, rather than impede, the pace of development and deployment of technical solutions. If specific current policies will need to be changed to enable the technical scope, those changes should be briefly noted in the narrative.

Section 3. Timetable of Activities: This section must articulate a timetable for standup of the partnership and the tempo and cadence of organized activities, including major milestones, encompassing at least the first twelve months of the technical effort, consistent with the implementation approach described in Section 1.

Proposers may assume that once DOE names the AI Model teams, the AmSC technical effort will perform an assessment of the AI Model teams' requirements.

The Project Narrative is considered the intellectual work of the proposed researchers. Concurrent submission of the same or substantially similar narratives attributed to different researchers may constitute academic dishonesty or research misconduct. Submission of a Project Narrative that is not the work of the proposed researchers, including machine-generated Project Narratives, may constitute academic dishonesty or research misconduct.

APPENDIX 1: AMSC INFRASTRUCTURE PARTNER(S) SUBPROPOSALS

Each named AmSC Infrastructure Partner must provide a self-contained subproposal describing its team, distinct role, scope of work and budget request. The narrative should briefly describe the work plan and contain clearly defined milestones and deliverables, with emphasis on initiating activities in Q1 of FY 2026 and deliver early results in Q4 of FY 2026. Each partner team should have a separate appendix. ASCR expects multiple partners in a proposal. Thus, the numbering of partners' narratives should follow the format of Appendix

1a, Appendix 1b, and so on, for each partner team's narrative.

The subproposal for each AmSC Infrastructure Partner 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.

Appendix 2: Biographical Sketch(es)

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

- 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.

Detailed instructions may be found in Section IX of this Announcement.

> WARNING: These instructions have been significantly revised to require disclosure of a variety of potential conflicts of interest or commitment, including participation in foreign government-sponsored talent recruitment programs.
>
> The PI and each senior/key person at the prime applicant and any proposed subaward must provide a list of all sponsored activities, awards, and appointments, whether paid or unpaid; provided as a gift with terms or conditions or provided as a gift without terms or conditions; full-time, part-time, or voluntary; faculty, visiting, adjunct, or honorary; cash or in-kind; foreign or domestic; governmental or private-sector; directly supporting the individual's research or indirectly supporting the individual by supporting students, research staff, space, equipment, or other research expenses. All malign foreign talent recruitment programs must be identified in current and pending support.

Appendix 3: Current and Pending Support

Provide a list of all current and pending support for the PI and senior/key personnel, including subawardees. Provide the Current and Pending Support as an appendix to your Project Narrative. Concurrent submission of a proposal to other organizations for simultaneous consideration will not prejudice its review.

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

Detailed instructions may be found in Section IX of this Announcement.

Appendix 4: 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 5: Data Management and Sharing Plan

Provide a Data Management and Sharing Plan (DSMP) as an appendix to the Project Narrative.

- This appendix should not exceed a page limit of five pages including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard letter-size (8.5-inch x 11-inch) paper with 1-inch margins (top, bottom, left, and right)
- Do not attach a separate file.
- This appendix will not count in the Project Narrative page limitation.

The standard requirements for a DSMP may be found in Section IX of this Announcement.

In addition, the DMP must specifically address:

- How FAIR (Findable, Accessible, Interoperable, and Reusable)[5] principles will apply to the anticipated data sets, software[6], and models[7] to be developed.
- What developed software, data sets, and models will be made available using an "opensource" licensing arrangement, noting the Software Package Data Exchange (SPDX) identifier(s) (https://spdx.org/licenses/) when possible, and where deviation in

[5] Wilkinson, M. D. et al. The FAIR Guiding Principles for Scientific Data Management and Stewardship. Sci. Data
3:160018, 2016. https://doi.org/10.1038/sdata.2016.18

[6] Chue Hong, N. P., Katz, D. S., Barker, M., Lamprecht, A-L, Martinez, C., Psomopoulos, F. E., Harrow, J., Castro, L. J., Gruenpeter, M., Martinez, P. A., Honeyman, T., et al. (2022). FAIR Principles for Research Software version 1.0. (FAIR4RS Principles v1.0). Research Data Alliance. DOI: https://doi.org/10.15497/RDA00068

[7] Ravi, N., Chaturvedi, P., Huerta, E.A. et al. FAIR principles for AI models with a practical application for accelerated high energy diffraction microscopy. Sci Data 9, 657 (2022). https://doi.org/10.1038/s41597-022-01712-9

this arrangement is expected from The Open Source Initiative's "Open Source Definition" (https://opensource.org/osd), a specific justification must be provided.
- How best practices in scientific software development will be applied to any development activities. For more information on best practices, see Better Scientific Software (https://bssw.io/).
- How the above principles and best practices will be applied in the context of working with AI model teams using and developing a mixture of open and proprietary models and data.

IV.C.5. Collaborator Information

Provide a listing of senior/key personnel at the applicant institution and any proposed subawards and a listing of individuals who should not serve as merit reviewers. You may also indicate suggested merit reviewers. Detailed instructions for these listings may be found in Section IX of this Announcement.

V. Submission Requirements and Deadlines

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 materials, 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. Submission Instructions

Letters of Intent (LOIs), pre-proposals, and/or proposals must be submitted in PAMS at https://pamspublic.science.energy.gov. Detailed instructions for LOIs are in Section IX of this Announcement. Detailed instructions for pre-proposals are in Section IX of this Announcement. Detailed instructions for proposals are in Section IX of this Announcement.

D. 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 submit 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

Delays in submitting letters of intent, pre-proposals, and proposals may be unavoidable. DOE has accepted late submissions when applicants have been unable to make timely submissions because of widespread technological disruptions or significant natural disasters. DOE has made accommodations for incapacitating or life-threatening illnesses

and for deaths of immediate family members. Other circumstances may or may not justify late submissions. Unacceptable justifications include the following:

- Failure to begin submission process early enough.
- Failure to provide sufficient time to complete the process.
- Failure to understand the submission process.
- Failure to understand the deadlines for submissions.
- Failure to satisfy prerequisite registrations.
- Unavailability of administrative personnel.

You are responsible for beginning the submission process in sufficient time to accommodate reasonably foreseeable incidents, contingencies, and disruptions.

Applicants must contact the Program Office/Manager listed in this Announcement to discuss the option of a late submission. Contacting the Program Office/Manager after the deadline may reduce the likelihood that a request will be granted.

DOE notes that not all requests for late submission will be approved.

If a clerical error by administrative staff results in an incomplete submission of a proposal, an authorized institutional official may appeal to correct its error by emailing the DOE official listed in this Announcement within 48 business hours of the deadline. This grant of leniency is at DOE's sole discretion.

VI. Proposal Review Information

A. Responsiveness Review

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.

B. Review Criteria

Proposals will be subjected to scientific merit review (peer review) and will be evaluated against the following criteria, listed in descending order of importance.

1. Technical Merit of the Project;
2. Appropriateness of the Implementation Approach;
3. Competency of Applicant's Personnel and Adequacy of Proposed Resources;
4. Reasonableness and Appropriateness of the Proposed Budget and Timeline;
5. Appropriateness of the Data Management and Sharing Plan

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

1. Technical Merit of the Project

- To what extent does the proposed work support the realization of the vision for the American Science Cloud within the timeframe articulated in this call?
- To what extent will the proposed work enable the OBBB goals of creating transformational AI model training for science domains?
- What is the likelihood of achieving the objectives stated in the project plan?
- Does the project plan adequately address the goals of enabling secure workflows?
- How might the results of the proposed work impact U.S. global leadership in secure, integrated science workflows?
- How might the outcome impact the improvement of scientific research workflows and accelerate scientific discovery?

2. Appropriateness of the Implementation Approach

- Is the proposed activities aligned with the published priorities identified or incorporated by reference in Section III of this Announcement?
- How logical and feasible are the proposed plans?
- Are the proposed framework and methods well justified, adequately developed?

- Does the proposed work have clearly defined milestones and final deliverables? How well do the milestones align with the final deliverable to ensure the successful completion of the project goal?
- Does the applicant recognize significant potential risks and consider mitigation strategies?

3. Competency of Applicant's Personnel and Adequacy of Proposed Resources

- How well qualified is the team to carry out the proposed technical scope of work?
- How well qualified is the lead institution, within the context of the stated management approach, to integrate the partners into an effective team of teams, working effectively in an agile project management context?
- Does the proposed partnership(s) build on prior effective collaborations?
- Are the research environment and facilities adequate for performing the work?
- Does the proposed work take advantage of unique facilities and capabilities?

4. Reasonableness and Appropriateness of the Proposed Budget and Timeline

- Are the proposed budget and staffing levels adequate to carry out the proposed work?
- Is the budget reasonable and appropriate for the scope?
- Is the proposed timeline reasonable for the scope of work?

5. Appropriateness of the Data Management and Sharing Plan

- To what extent does the Data Management and Sharing Plan (DMSP) enable data, including software, generated in the course of the project to be publicly shared, where appropriate, and preserved in a timely and fair manner?
- Does the DMSP address the specific requirements of the topic description?
- Does the DMSP adequately justify any limitations of data sharing?
- Are there any weaknesses in the DMSP that should be addressed prior to the start of the project?

C. 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.

DOE / SC / ASCR anticipates holding a merit review panel of federal program managers to evaluate proposals submitted to this Announcement.

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
- Conforming to the concept/framework of DOE's Integrated Research Infrastructure
- Likelihood that the proposed work will draw the DOE national laboratories together in collaboration to advance common goals without duplicating effort
- Likelihood that the proposed work will enhance DOE national laboratories' abilities to utilize commercial cloud technologies for research workflows
- Quality and maturity level of the Infrastructure Partners' work plan
- Potential impact for realizing the vision of the American Science Cloud
- Performance under current awards
- Training the next generation of researchers
- Utility of the proposed work to the broader scientific community

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.

VII. Award Notices

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. Anticipated Timeline for Notice of Selection for Award Negotiation

It is anticipated that the award selection will be completed by September 30, 2025. It is expected that awards will be made in Fiscal Year 2025.

DOE is interested in seeing projects supported under this Announcement begin work by October 20, 2025.

1. Notice of Selection for Award Negotiation

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.

VIII. Post-Award Requirements and Administration

A. Administrative and Policy Requirements

Additional administrative and policy provisions applicable to this Announcement are included in the list below. The full text of each provision is in Section IX of this Announcement and may be accessed by navigating to the hyperlinks below:

B. Reporting

Annual progress reports from the award investigator will be required and will be due 90 days before the end of each budget year.

IX. Other Information

A. Checklist for Avoiding Common Errors

Note that not all items in this checklist will apply to every submission under every Announcement.

Checklist for Avoiding Common Errors:

Item	Issue
Proposals	Submitted in PAMS. Do not submit proposals in Grants.gov or FedConnect. Do not attempt to submit a proposal unless you are affiliated with a DOE/NNSA National Laboratory.
Page Limits	Strictly followed throughout proposal, including particular attention to: - Project Narrative
Personally Identifiable Information	None present in the proposal
Project 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 proposal
Data Management and Sharing Plans (DMSP)	- If referring to an experiment's DMSP, describe the relationship to the proposed research - Include a DMSP even if no experimental data is expected
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.

B. How-To Guides

The how-to guides provided in this section are intended as general guidance about SC. Not all parts will be applicable to every Announcement, every proposal, or every institution.

1. How to Distinguish Between a New and Renewal Proposal

New Proposal: A proposal must be submitted as "new" in the following circumstances:

- When applying for funding to create a new research award that has not previously received DOE funding, including any funding for the current year,
- When applying for funding to support continued research from the same applicant institution as the current grant but with a significant change in fundamental nature of the research, or
- When applying for funding to support continued research supported by an existing DOE award but at a new applicant institution.

Renewal Proposal: A renewal proposal is appropriate when funds are requested for an award from the same recipient/applicant institution that has no significant changes in the following items:

- The award's senior leadership, and
- The fundamental nature of the award.

A change in an award's PI does not necessarily require submission as a new proposal: The change in personnel must be considered in light of other changes.

Renewal proposals compete for funds with all other peer-reviewed proposals and must be developed as fully as though the applicant were applying for the first time. Renewal proposals must be submitted by the same sponsoring institution as that holding the current award for which renewal funding is requested, and the proposed research topic must be logical scientific extensions of the research that has been performed in the current award.

2. How Consortia May be Used

INCORPORATED CONSORTIA

Incorporated consortia are eligible to apply for funding as a prime recipient (lead organization) or subrecipient (team member).

Each incorporated consortium must have an internal governance structure and a written set of internal rules. Upon request, the consortium must provide a written description of its internal governance structure and its internal rules to the DOE contracting officer. There is no requirement that subawards be formalized into incorporated consortia.

UNINCORPORATED CONSORTIA

Unincorporated consortia (team arrangements) must designate one member of the consortium to serve as the prime recipient/consortium representative (lead organization). There is no requirement that subawards be formalized into unincorporated consortia.

Upon request, unincorporated consortia must provide the DOE contracting officer with a collaboration agreement, commonly referred to as the articles of collaboration, which sets out the rights and responsibilities of each consortium member. This agreement binds the individual consortium members together and should discuss, among other things, the consortium's:

- Management structure;
- Method of making payments to consortium members;
- Means of ensuring and overseeing members' efforts on the project;
- Provisions for members' cost sharing contributions; and
- Provisions for ownership and rights in intellectual property developed previously or under the agreement.

Note that a consortium is applied for in one proposal and results in one award with subawards to consortia members. Multi-institutional teams may, if permitted under this Announcement, submit collaborative proposals with each institution submitting its own proposal with an identical Project Narrative, resulting in multiple awards to the collaborating institutions.

3. How to Submit Letters of Intent

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.

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.

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 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.

4. How to Submit a Pre-Proposal

It is important that the pre-proposal 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 pre-proposal. All PIs and those submitting pre-proposals on behalf of PIs are encouraged to establish PAMS accounts as soon as possible to avoid submission delays.

Submit Your Pre-Proposals:

- Create your pre-proposal (called a preproposal in PAMS) 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 Preproposal" from the dropdown.
- On the Submit Preproposal page, select the institution from which you are submitting this preproposal 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 preproposal; 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 preproposal. Save the preproposal for later work by clicking the "Save" button at the bottom of the screen. It will be stored in "My Preproposals" for later editing.
- Enter a title for your preproposal.
- Select the appropriate technical contact from the Program Manager dropdown.
- To upload the preproposal 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 preproposal to DOE.
- Upon submission, the PI will receive an email from the PAMS system

<PAMS.Autoreply@science.doe.gov> acknowledging receipt of the preproposal.

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

> WARNING: The PAMS website at https://pamspublic.science.energy.gov will permit you to edit a previously submitted pre-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.

5. 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 PAMS Help materials, accessible by clicking the "PAMS Help" 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.

6. How to Prepare a Biographical Sketch

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/. The fillable PDFs provided by the National Science Foundation are no longer available. SciENcv has been updated to meet the interagency common format biographical sketches.

The biographical information (curriculum vitae) must include the following items within its page limit:

- Education and Training: Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree and year.
- Research and Professional Experience: Beginning with the current position, list professional/academic positions in chronological order with a brief description. List all current academic, professional or institutional appointments, foreign or domestic, at the applicant institution or elsewhere, whether remuneration is received, and, whether full-time, part-time, or voluntary.
- Publications: Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically. Patents, copyrights and software systems developed may be provided in addition to or substituted for publications. An abbreviated style such as the Physical Review Letters (PRL) convention for citations (list only the first author) may be used for publications with more than 10 authors.

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.

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). If not using SciENcv, append the following signed and dated certification to a biographical sketch:

> I, [Full Name and Title], certify to the best of my knowledge and belief that the information contained in this Current and Pending Support Disclosure Statement is true, complete, and accurate. I understand that any false, fictitious, or fraudulent information, misrepresentations, half-truths, or omissions of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements,

false claims or otherwise. (18 U.S.C. §§ 1001 and 287, and 31 U.S.C. 3729-3733 and 3801-3812). I further understand and agree that (1) the statements and representations made herein are material to DOE's funding decision, and (2) I have a responsibility to update the disclosures during the period of performance of the award should circumstances change which impact the responses provided above.

Personally Identifiable Information: Do not include sensitive and protected personally identifiable information including social security numbers, birthdates, citizenship, marital status, or home addresses. Do not include information that a merit reviewer should not make use of.

7. How to Prepare a List of Individuals Who Should Not Serve as Reviewers

To assist in identifying individuals who should not serve as merit reviews, provide the following information for each and every senior/key person who is planned to be or is identified in Section A of the proposal budget for the applicant and any proposed subrecipients:

- Advisees (graduate students or postdocs) of the senior/key person
- Advisors of the senior/key person while a graduate student or a postdoc
- Close associates of the senior/key person over the past 48 months
- Co-authors of the senior/key person over the past 48 months
- Co-editors of the senior/key person over the past 48 months
- Co-investigators of the senior/key person over the past 48 months
- Collaborators of the senior/key person over the past 48 months

Do not identify any personnel at the applicant institution or any proposed subrecipient or team institution: Those personnel are prohibited from serving as merit reviewers.

Large collaborations of 10 or more researchers do not require that all collaborators be identified: rather, only list the researchers with whom the senior/key person actually collaborated.

For all identified individuals, provide the following information:

- The senior/key person to whom the individual was an advisee, advisor, close associate, co-author, co-editor, co-investigator, or collaborator, identified by first name and last name
- The individual's first (given) name
- The individual's last (family) name
- The individual's Open Researcher and Contributor ID (ORCiD), if known
- The individual's institutional affiliation spelling out acronyms (For joint appointments, separate each institution with a slash ("/"). Do not list departmental affiliations.)
- The reason for listing the individual (advisee, advisor, close associate, co-author, co-editor, co-investigator, collaborator)
- The year when the individual last was a close associate, co-author, co-editor, co-

investigator, or collaborator

You may also provide a list of all senior/key personnel who are planned to be or are identified in Section A of the proposal budget for the applicant and any proposed subrecipients.

The lists do not need to be sorted in any method.

The lists must be submitted in tabular format, preferably as Microsoft Excel (.xls or .xlsx) files.

For your convenience, a template is available at https://science.osti.gov/grants/Policy-and-Guidance/Agreement-Forms. If using the template:

- Do not add tabs to the spreadsheet
- Do not merge the existing tabs
- Do not remove headers
- Fill out the requested headers on both tabs with the same information
- Ensure that given and family names are presented in the correct columns

8. How to Prepare Current and Pending Support

> WARNING: These instructions have been significantly revised to require disclosure of a variety of potential conflicts of interest or commitment, including participation in malign foreign talent recruitment programs.

Current and Pending support is intended to allow the identification of potential duplication, overcommitment, potential conflicts of interest or commitment, and all other sources of support. The PI and each senior/key person at the prime applicant and any proposed subaward must provide a list of all sponsored activities, awards, and appointments, whether paid or unpaid; provided as a gift with terms or conditions or provided as a gift without terms or conditions; full-time, part-time, or voluntary; faculty, visiting, adjunct, or honorary; cash or in-kind; foreign or domestic; governmental or private-sector; directly supporting the individual's research or indirectly supporting the individual by supporting students, research staff, space, equipment, or other research expenses. Include the current application and any application submitted to any source of funding in a list of current and pending support. All sources of support must be disclosed, but for work that is subject to government classification or enforceable non-disclosure agreements, the general area of the research should be described without disclosing sensitive details and the sponsor should be listed as "Government Agency" or "private sponsor." All malign foreign talent recruitment programs must be identified in current and pending support.

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/. The fillable PDFs provided by the National Science Foundation are no longer available. SciENcv has been updated to meet the interagency common format for current and pending support.

For every activity, list the following items:

- The sponsor of the activity or the source of funding.
- The award or other identifying number.
- The title of the award or activity. If the title of the award or activity is not descriptive, add a brief description of the research being performed that would identify any overlaps or synergies with the proposed research.
- The total cost or value of the award or activity, including direct and indirect costs. For pending proposals, provide the total amount of requested funding.
- The award period (start date – end date).
- The person-months of effort per year being dedicated to the award or activity.

If required to identify overlap, duplication of effort, or synergistic efforts, append a description of the other award or activity to the current and pending support.

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). If not using SciENcv, append the following signed and dated certification to current and pending support:

> I, [Full Name and Title], certify to the best of my knowledge and belief that the information contained in this Current and Pending Support Disclosure Statement is true, complete, and accurate. I understand that any false, fictitious, or fraudulent information, misrepresentations, half-truths, or omissions of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (18 U.S.C. §§ 1001 and 287, and 31 U.S.C. 3729-3733 and 3801-3812). I further understand and agree that (1) the statements and representations made herein are material to DOE's funding decision, and (2) I have a responsibility to update the disclosures during the period of performance of the award should circumstances change which impact the responses provided above.

Details of any obligations, contractual or otherwise, to any program, entity, or organization sponsored by a foreign government must be provided on request to either the applicant institution or DOE.

9. How to Prepare a Data Management and Sharing Plan

Data Management and Sharing Plans (DMSPs) must be provided for the proposed research following DOE and DOE sponsoring office guidelines. If needed, updates to the DMSP, through the course of the R&D, must be provided to DOE for review and approval. In

general, a DMSP should address the following requirements:

1. Validation and replication of results
The DMSP should describe how scientific data generated in the course of the research project will be publicly shared and preserved in a timely and fair manner that enables validation and replication of results. If data will not be publicly shared and preserved (see "Data sharing limitations"), the DMSP should describe how results could be validated and replicated.

2. Timely and fair access
The DMSP should provide a plan for making all scientific data displayed in peer-reviewed scholarly publications resulting from the proposed research open, machine-readable, and digitally accessible to the public at the time of publication. This includes data that are displayed in charts, figures, images, etc. In addition, the underlying digital scientific data used to generate peer-reviewed scholarly publications should be made freely available and publicly accessible at the time of publication, in accordance with the principles stated above. The published article should indicate how these data can be accessed. The DMSP should also provide a timeline for sharing digital scientific data produced under the DOE funded R&D effort not associated with peer-reviewed scholarly publications.

3. Data repository selection
The DMSP should specify the use of digital repositories that align, to the extent practicable, with the National Science and Technology Council document entitled "Desirable Characteristics of Data Repositories for Federally Funded Research," by the Subcommittee on Open Science of the National Science and Technology Council, May 2022.[8] In general, DOE does not endorse or require sharing in any specific repository and encourages researchers to select the repository that is most appropriate for their data type and discipline, though individual sponsoring research offices may provide specific guidance or designate a specific repository.

4. Data management and sharing resources
The DMSP should describe the data management and sharing resources that may be available and used in the course of the proposed research. In particular, a DMSP that explicitly or implicitly commit data management and sharing resources at a facility beyond what is conventionally made available to approved users should be accompanied by written approval from that facility. In determining the resources available for data management and sharing at DOE scientific user facilities, researchers should consult the published description of data management resources and practices at that facility and reference it in the DMSP.

[8] NSTC Subcommittee on Open Science. Desirable Characteristics of Data Repositories for Federally Funded Research. (2022) DOI: https://doi.org/10.5479/10088/113528

5. Data sharing limitations
The DMSP must address any limitations of scientific data sharing to facilitate the protection of confidentiality, privacy, business confidential information, and/or security; avoid negative impact on intellectual property rights, innovation, program and operational improvements, and U.S. competitiveness; consider maximizing appropriate sharing through risk-mitigated limited access; preserve the balance between the relative value of long-term preservation and access and the associated cost and administrative burden; and otherwise be consistent with all applicable laws, regulations, and DOE orders and policies. Contractors may have the right to assert copyright to or protect from public release for certain scientific data. When contractors assert copyright of scientific data, the DMSP should address licensing requirements and any limitations for sharing the copyrighted data. When contractors assert data protection, the scientific data will not be shared with the public during the data protection period.

To improve the discoverability of and attribution for datasets created and used in the course of research, DOE encourages the citation of publicly available datasets within the reference section of publications, including using the persistent identifiers associated with the dataset, such as a Digital Object Identifier (DOI).

In addition, scientific data made publicly available through the implementation of a DMSP are required to be reported under any applicable reporting requirements to DOE's Office of Scientific and Technical Information (OSTI). A DOI is a type of persistent identifier that may be assigned to a dataset prior to reporting to OSTI, e.g., by the repository hosting the data or by a publisher. When there is a DOI assigned to a dataset, it must be provided within the metadata record submitted to OSTI. In cases where a data record does not already have an associated DOI, OSTI will assign a DOI for the data record.

DMSPs will be reviewed as part of the overall SC research application merit review process. Applicants are encouraged to consult the DOE website for further information and suggestions for how to structure a DMSP: https://www.energy.gov/datamanagement/doe-requirements-and-guidance-digital-research-data-management.

10. How to Prepare a Budget and Justification

The following advice will improve the accuracy of your budget request:

- Funds requested for personnel (senior, key, and other) must be justified as the product of their effort on the project and their institutional base salary.
- Funds requested for fringe benefits must be calculated as the product of the requested salary and, if present, the negotiated fringe benefit rate contained in an institution's negotiated indirect cost rate agreement.
- Funds requested for indirect costs must be calculated using the correct indirect cost base

and the negotiated indirect cost rate.

- You are encouraged to include the rate agreement used in preparing a budget as a part of the budget justification.
- Do not prepare a budget justification using the expired DOE form F4260.1.

Budget Fields

Section A Senior/Key Person	For each Senior/Key Person, enter the requested information. List personnel, base salary, the number of months that person will be allocated to the project, requested salary, fringe benefits, and the total funds requested for each person. The requested salary must be the product of the base salary and the effort. Include a written narrative in the budget justification that justifies the need for requested personnel. Within the justification, explain the fringe benefit rate used if it is not the standard faculty rate.
Section B Other Personnel	List personnel, the number of months that person will be allocated to the project, requested salary fringe benefits, and the total funds requested for each person. Include a written narrative in the budget justification that fully justifies the need for requested personnel. Within the justification, provide the number of positions being filled in each category of other personnel.
Section C Equipment	For the purpose of this budget, equipment is designated as an item of property that has an acquisition cost of $5,000 or more and an expected service life of more than one year, unless a different threshold is specified in a negotiated Facilities and Administrative Cost Rate. (Note that this designation applies for proposal budgeting only and differs from the DOE definition of capital equipment.) List each item of equipment separately and justify each in the budget justification section. Do not aggregate items of equipment. Allowable items ordinarily will be limited to research equipment and apparatus not already available for the conduct of the work. General-purpose office equipment is not eligible for support unless primarily or exclusively used in the actual conduct of scientific research.
Section D Travel	For purposes of this section only, travel to Canada or to Mexico is considered domestic travel. In the budget justification, list each trip's destination, dates, estimated costs including transportation and subsistence, number of staff traveling, the purpose of the travel, and how it relates to the project. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). To qualify for support, attendance at meetings or conferences must enhance the

	investigator's capability to perform the research, plan extensions of it, or disseminate its results. Domestic travel is to be justified separately from foreign travel. Within the budget justification, detail the number of personnel planning to travel and the estimated per-traveler cost for each trip.
Section E Participant/Trainee Support Costs	If applicable, submit training support costs. Educational projects that intend to support trainees (precollege, college, graduate and post graduate) must list each trainee cost that includes stipend levels and amounts, cost of tuition for each trainee, cost of any travel (provide the same information as needed under the regular travel category), and costs for any related training expenses. Participant costs are those costs associated with conferences, workshops, symposia or institutes and breakout items should indicate the number of participants, cost for each participant, purpose of the conference, dates and places of meetings and any related administrative expenses. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis).
Section F Other Direct Costs	Materials and Supplies: Enter total funds requested for materials and supplies in the appropriate fields. In the budget justification, indicate general categories such as glassware, and chemicals, including an amount for each category (items not identified under "Equipment"). Categories less than $1,000 are not required to be itemized. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). Publication Costs: Enter the total publication funds requested. The proposal budget may request funds for the costs of documenting, preparing, publishing or otherwise making available to others the findings and products of the work conducted under the award. In the budget justification, include supporting information. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). Consultant Services: Enter total funds requested for all consultant services. In the budget justification, identify each consultant, the services he/she will perform, total number of days, travel costs, and total estimated costs. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). ADP/Computer Services: Enter total funds requested for ADP/Computer Services. The cost of computer services, including computer-based retrieval of scientific, technical and education

	information may be requested. In the budget justification, include the established computer service rates at the proposing organization if applicable. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). Subawards/Consortium/Contractual Costs: Enter total costs for all subawards/consortium organizations and other contractual costs proposed for the project. In the budget justification, justify the details. Equipment or Facility Rental/User Fees: Enter total funds requested for Equipment or Facility Rental/User Fees. In the budget justification, identify each rental/user fee and justify. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). Alterations and Renovations: Enter total funds requested for Alterations and Renovations. In the budget justification, itemize by category and justify the costs of alterations and renovations, including repairs, painting, removal or installation of partitions, shielding, or air conditioning. Where applicable, provide the square footage and costs. Other: Add text to describe any other Direct Costs not requested above. Enter costs associated with "Other" item(s). Use the budget justification to further itemize and justify.
Section G Direct Costs	This represents Total Direct Costs (Sections A through F). PAMS will automatically calculate this.
Section H Other Indirect Costs	Enter the Indirect Cost information, including the rates and bases being used, for each field. Only four general categories of indirect costs are allowed/requested on this form, so please consolidate if needed. Include the cognizant Federal agency and contact information if using a negotiated rate agreement. Within the budget justification, explain the use of multiple rates, if multiple rates are used.
Section I Total Direct and Indirect Costs	This is the total of Sections G and H. PAMS will automatically calculate this.

11. How to Register in PAMS

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

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 "PAMS Help" 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.

12. 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."

C. Administrative and Policy Requirements

1. Availability of Funds

Funds are not presently available for this award. The Government's obligation under this award is contingent upon the availability of appropriated funds from which payment for award purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the Contracting Officer for this award and until the awardee receives notice of such availability, to be confirmed in writing by the Contracting Officer.

2. Commitment of Public Funds

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

3. Digital Persistent Identifier (PID)

Covered individuals[9] listed on proposals must provide a digital persistent identifier (PID) in the common Biographical Sketch and Current and Pending (Other) Support forms as part of the proposal. Included PIDs must meet the common/core standards specified in the NSPM-33 Implementation Guidance or successor guidance (e.g., an ORCID iD). The inclusion of an individual's PID will be optional until May 1, 2025, and mandatory thereafter.

4. Environmental, Safety and Health (ES&H) Performance of Work at DOE Facilities

With respect to the performance of any portion of the work under this award which is performed at a DOE-owned or controlled site, the recipient agrees to comply with all state and Federal ES&H regulations, and with all other ES&H requirements of the operator of such site.

Prior to the performance on any work at a DOE-Owned or controlled site, the recipient shall contact the site facility manager for information on DOE and site specific ES&H requirements.

The recipient shall apply this provision to all subawardees at any tier.

5. Evaluation and Administration by Non-Federal Personnel

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its proposal, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign a conflict of interest and a certificate of confidentiality prior to reviewing a proposal. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

6. Federal, State, and Local Requirements

With respect to the performance of any portion of the work under this award, the recipient agrees to comply with all applicable local, state, and Federal ES&H regulations. The

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[9] Covered Individual means an individual who (a) contributes in a substantive, meaningful way to the development or execution of the scope of work of a project funded by DOE or proposed for funding by DOE, and (b) is designated as a covered individual by DOE.

DOE designates as covered individuals any principal investigator (PI); project director (PD); co-principal investigator (Co-PI); co-project director (Co-PD); project manager; and any individual regardless of title that is functionally performing as a PI, PD, Co-PI, Co-PD, or project manager. Status as a consultant, graduate (master's or PhD) student, or postdoctoral associate does not automatically disqualify a person from being designated as a "covered individual" if they meet the definition above.

recipient shall apply this provision to all sub awardees at any tier.

7. Funding Restrictions

Funding for all awards and future budget periods are contingent upon the availability of funds appropriated by Congress and the availability of future-year budget authority.

8. Government Right to Reject or Negotiate

DOE reserves the right, without qualification, to reject any or all proposals received in response to this DOE National Laboratory Announcement and to select any proposal, in whole or in part, as a basis for negotiation and/or award.

9. Modification

Notices of any modifications to this DOE National Laboratory Announcement will be posted on the Grants and Contracts website (http://science.osti.gov/grants/).

10. PDF Generation

The Project 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. The Project 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 Project 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 Project Narrative. Once a Project Narrative has been assembled, please submit the combined Project 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. Review your submission to ensure that blank pages are not present.

11. Proprietary Proposal Information

Department of Energy (DOE) takes very seriously the confidentiality of all applicants and will treat information submitted in proposals, as well as the identity of applicants, as confidential to the fullest extent permissible under Federal law. In order for DOE to protect confidential information, the applicant must also treat the information as confidential and properly mark it as described below. DOE will not be able to protect information that the applicant has released publicly or is in the public domain. For additional information on DOE's Freedom of

Information Act (FOIA) regulations, see 10 CFR 1004.

Applicants should not include business sensitive information (e.g., commercial or financial information that is privileged or confidential), trade secrets, proprietary, or otherwise confidential information in their proposal unless such information is necessary to convey an understanding of the proposed project or to comply with a requirement in the Announcement. Applicants are advised to not include any critically sensitive proprietary detail.

If a proposal includes trade secrets or information that is commercial or financial, or information that is confidential or privileged, it is furnished to the Government in confidence with the understanding that the information shall be used or disclosed only for evaluation of the proposal. Such information will be withheld from public disclosure to the extent permitted by law, including the FOIA. Without assuming any liability for inadvertent disclosure, DOE will seek to limit disclosure of such information to its employees and to outside reviewers when necessary for merit review of the proposal or as otherwise authorized by law. This restriction does not limit the Government's right to use the information if it is obtained from another source.

Proposals and other submissions containing confidential, proprietary, or privileged information must be marked as described below. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the FOIA or otherwise. The U.S. Government is not liable for the disclosure or use of unmarked information and may use or disclose such information for any purpose.

The cover sheet of the Proposal and other submission must be marked as follows and identify the specific pages containing trade secrets, confidential, proprietary, or privileged information:

> Notice of Restriction on Disclosure and Use of Data:
> Pages [list applicable pages] of this document may contain trade secrets, confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance or loan agreement between the submitter and the Government. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source. [End of Notice]

The header and footer of every page that contains confidential, proprietary, or privileged information must be marked as follows: "Contains Trade Secrets, Confidential, Proprietary, or Privileged Information Exempt from Public Disclosure." In addition, each line or paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting.

IMPORTANT GUIDANCE FOR COMPANY SUBMITTERS:

As per DOE's FOIA regulations and Department of Justice FOIA guidance, if DOE receives a FOIA request the following general steps will be taken:

1. DOE will review the request to determine whether your company's information is subject to the request. Only federal records are subject to FOIA requests. Depending on the circumstances, information submitted by an outside entity may be considered "federal records" for purposes of FOIA.
2. If your company information is determined to be a federal record and responsive to a FOIA request, DOE will review what was submitted in order to determine if DOE can make a determination whether the information is legally exempt.
    a. If DOE determines your information is fully exempt under an exemption and that it will not be released, DOE may not contact you.
    b. If DOE is unable to determine whether the information is exempt under an exemption or is planning on releasing some or all of your information, DOE will first contact you in order for you to have an opportunity to respond and provide additional justification as to why it may be exempt. DOE will do all that it can to work with company submitters to be in compliance with the law and maintain positive relations with company submitters.
    c. It is critical if DOE or DOE's contractors who are processing your FOIA contact you that you respond in a timely manner. DOE is under strict deadlines when processing a FOIA request.

12. Publications

Researchers are expected to publish or otherwise make publicly available the results of the work conducted under any authorization resulting from this Announcement. Publications and other methods of public communication describing any work based on or developed under an authorization resulting from this Announcement must contain an acknowledgment of SC support. The format for such acknowledgments is provided at https://science.osti.gov/funding-opportunities/acknowledgements/. The author's copy of any peer-reviewed manuscript accepted for funding must be announced to DOE's Office of Scientific and Technical Information (OSTI) and made publicly available in accordance with the Laboratory's contract.

13. 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. Your individual 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 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 Announcement may be reviewed by a Committee of Visitors.