Financial Assistance
Notice of Funding Opportunity
Part 1

U.S. DEPARTMENT *of* ENERGY

U.S. Department of Energy (DOE)
Office of Science (SC)
Genesis Mission Graduate Fellowship Pilot

Notice of Funding Opportunity Number: DE-FOA-0003673
Pre-application / Letter of Intent Due: November 9, 2026, 5:00 PM ET
Pre-application Response Date: November 23, 2026
Application Due: January 12, 2027, 11:59 PM ET

Modifications

Mod. No.	Date	Description of Modification
000001	October 28, 2026	Modification 000001 is issued to note (page 32) that DOE may share application and review materials with the Foundation for Energy Security and Innovation (FESI); to update references to Super Intelligence (SI); and to modify the program policy factors (page 38)

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Before You Begin

Navigating the Notice of Funding Opportunity

To reduce the burden on applicants in the Notice of Funding Opportunity (NOFO) process and limit the length of the NOFO information requests, we separated the NOFO into two parts.

The NOFO Part 1 describes the DOE program goals and evaluation criteria, eligibility, and other components specific to each funding opportunity. NOFO Part 2 includes the fixed DOE requirements that generally do not change from NOFO to NOFO, including standard information for the application phase, expectations for award negotiations, and post-award requirements. You must review both parts before applying. To assist you in the process, you will find references throughout this document to additional information in Part 2.

You must also take several one-time actions before applying. Some of these actions may take several weeks, so be sure to allow yourself enough time to complete them. If you don't complete all required steps, it could interfere with application and negotiation deadlines or your ability to receive an award if selected. If you already completed these one-time registrations, make sure they are active and up to date. All registrations are free. You can find additional information about registration in NOFO Part 2, *Get Registered*.

Hyperlinks are provided for the applicant's ease of reference. Links, and the information contained in them, may change over time. It is up to an individual applicant to make sure that they have the current information that is contained in the links.

This announcement is published with NOFO Part 2 Version 4.1, which will be posted with this NOFO at https://Grants.gov, https://pamspublic.science.energy.gov, and https://science.osti.gov/FOAs/Open/.

I. Basic Information

Key Facts

Issuing Agency	Department of Energy, Office of Science
Funding Opportunity Title	Genesis Mission Graduate Fellowship Pilot
Announcement Version	Amendment 000001
Funding Opportunity Number	DE-FOA-0003673
Funding Instrument	Grants and National Laboratory Awards
Expected Total Available Funding	$100 million in current and future fiscal year funds, including $20 million in fiscal year (FY) 2027 funding and $80 million in outyear funding, subject to the availability of future year appropriations
Assistance Listing Number and Name	81.049, Office of Science Financial Assistance Program
Announcement Type	Research and Development (R&D)

KEY DATES

All deadlines are 5:00 p.m. ET unless indicated otherwise

Notice of Funding Opportunity Issue Date:

October 8, 2026

Letter of Intent Deadline:

November 9, 2026, 5:00 PM ET

Informational Webinar:

November 4, 2026, 4:00 PM ET

Register at https://science-doe.zoomgov.com/webinar/register/WN_tVM2IweSRDWZlqeeynY6FA

Application Deadline:

January 12, 2027, 11:59 PM ET

1. Funding Details

The award size will depend on the number of meritorious applications and the availability of appropriated funds.

- Approximate total available funding: $20,000,000 in FY 2027, $20,000,000 in FY 2028, $20,000,000 in FY 2029, $20,000,000 FY 2030, $20,000,000 in FY 2031
- Approximate number of awards: 4–8
- Approximate dollar amount of individual awards: $12–25 million
- Approximate award project period: 60 months
- Anticipated length of budget periods: 12 months

2. Period of Performance

We anticipate making awards with a project period of five years.

Continuation funding (funding for the second and subsequent budget periods) is contingent on availability of funds appropriated by Congress and future year budget authority, progress towards meeting the objectives of the approved application, submission of required reports, and compliance with the terms and conditions of the award.

Executive Summary

American scientists and engineers will power the super intelligence (SI) revolution in science and innovation through the Genesis Mission. DOE SC hereby invites applications from United States (U.S.) Institutions of Higher Education and domestic doctoral-granting institutions to develop and demonstrate the effectiveness of novel four-year doctoral training pilots with dual competency in SI and another scientific discipline. Two high-impact research experiences are required as part of the pilot, one at a DOE National Laboratory or SC user facility and one in industry. The purpose of this pilot is to lay the foundation for the first cohort of Genesis Mission Graduate Fellows, representing a new generation of Ph.D.-level scientists and engineers with exceptional training in SI and scientific disciplines along with practical research experiences. All graduate fellowships supported by this NOFO must support research activities related to SC-relevant Genesis Mission National Science and Technology Challenges as detailed in the Request for Applications (RFA), DE-FOA-0003612.

Agency Contact Information

Grants.gov Customer Support	800-518-4726 (toll-free) support@Grants.gov
PAMS Customer Support	855-818-1846 (toll-free) 301-903-9610 PAMS-helpdesk@doe.gov
Program Contact	GM-Uni-Engagement@doe.gov for all inquiries.

II. Eligibility

To be considered, your submission must meet the criteria set forth below. If your application does not meet these eligibility requirements, it will be removed from consideration for any award. DOE will not determine eligibility for potential applicants before the application due date. The information in this document is specific to this NOFO. You can find the eligibility requirements that apply to all NOFOs in NOFO Part 2, *Eligibility*.

Eligible Applicants

In accordance with 2 C.F.R. § 910.126, *Competition*, eligibility for award is restricted to U.S. Institutions of Higher Education and domestic doctoral-granting institutions as the lead applicant. This restriction on the lead applicant is necessary because only institutions of higher education and doctoral-granting institutions offer doctoral training programs.

Applications may include subawards to institutions of higher education, industry, DOE National Laboratories, and SC user facilities.

1. DOE/NNSA National Laboratories[1]

DOE/ National Nuclear Security Administration (NNSA) National Laboratories are not eligible to submit applications under this NOFO but may be proposed as subrecipients under another organization's application. If recommended for funding as a proposed subrecipient, the value of the proposed subaward will be removed from the prime applicant's award and will be provided to the laboratory through the DOE Field-Work Proposal System and work will be conducted under the laboratory's contract with DOE. No administrative provisions of this NOFO will apply to the laboratory or any laboratory subcontractor. Additional instructions for securing authorization from the cognizant Contracting Officer are found in Part 2 of this NOFO.

2. Non-DOE/NNSA FFRDCs

Non-DOE/NNSA Federally Funded Research and Development Centers (FFRDCs) are neither eligible to submit applications under this NOFO nor to be proposed as subrecipients under another organization's application.

3. Other Federal Agencies

Other Federal agencies are neither eligible to submit applications under this NOFO nor to be proposed as subrecipients under another organization's application.

Note for all applicants:

Applications that are submitted by applicants that have not submitted a required Letter of Intent may be declined without further review.

4. Ineligible Participants

The following entities are ineligible for this NOFO as a recipient, subrecipient, or subcontractor:

- In accordance with 2 C.F.R. § 200.214, entities banned from doing business with the U.S. Government, such as entities debarred, suspended, or otherwise excluded from or ineligible for participating in Federal programs (2 C.F.R. § 200.214)
- Entities identified on the Department of the Treasury Office of Foreign Assets Control Treasury's Sanctions Program Specially Designated Nationals list (OFAC – Sanctions List Service [treas.gov])
- Nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995

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[1] The phrase "National Laboratories" is used broadly to encompass DOE/NNSA laboratories and sites capable of performing the work described in this NOFO and capable of receiving funds through the DOE Field Work System.

Entity of Concern Prohibition

Entities of Concern are prohibited from participating in projects under this NOFO. You can find details and definitions in NOFO Part 2, *Eligibility, Other Eligibility Information, Entity of Concern Prohibition*.

Other Eligibility Requirements and Limitations

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 an application.

Applications that are submitted by applicants that have not submitted a required LOI may be declined without further review.

Applicant institutions are limited to no more than one letter of intent or application as the lead institution.

Cost Sharing

Cost sharing for basic and fundamental research is not required pursuant to an exclusion from the requirements of Section 988 of the Energy Policy Act of 2005.

Cost sharing is not required of DOE/NNSA National Laboratories, other Federal agencies, another Federal agency's FFRDC, or their subcontractors at any tier. DOE/NNSA National Laboratories, other Federal agencies, and another Federal agency's FFRDC may impose cost-sharing requirements on their contractors subject to their policies and procedures.

Cost sharing will not be considered as a factor during merit review or award selection. You can find more information on cost sharing in NOFO Part 2, *Eligibility*.

III. Program Description

Background and Context

DOE SC hereby announces the Genesis Mission Graduate Fellowship Pilot to cultivate a highly skilled, SI-ready scientific workforce. Driven by insights from the Genesis Mission Summit and the associated Request for Information, this program addresses the urgent national need for domestic Ph.D.-level scientists and engineers who possess dual competencies in SI and a scientific discipline. By pioneering an accelerated, highly focused four-year doctoral pathway, the Pilot incentivizes U.S. academic institutions to reform traditional graduate education models. Successful applications will establish pilots that integrate rigorous dual-competency academic coursework with high-impact research experiences at DOE National Laboratories/SC user

facilities and industry partners, producing an initial cohort of approximately 100 Genesis Mission Graduate Fellows in four years.

The Genesis Mission seeks to harness advances in SI, high-performance computing, quantum information science, and DOE's scientific capabilities to accelerate productivity on Genesis Mission National Science and Technology Challenges. The Fellowship Pilot will support the development of talent needed to advance these efforts by preparing the next generation of domestic scientists and engineers who can integrate cutting edge SI methods with deep domain expertise and apply those skills to advance the SC-relevant challenges of the Genesis Mission.

Award funding will support Fellows through stipends, tuition, and health insurance. Funding will also cover expenses for two extended (ten weeks or more) research experiences in industry and at DOE National Laboratories or SC user facilities. Funding will also support mentor travel in support of thesis-related work and, when appropriate, mentor time.

Successful Pilots must incorporate the following elements:

Accelerated Four-Year Pathways

Recipient institutions and the host DOE National Laboratories/SC user facilities and industries should clearly demonstrate the ability to deliver individualized, structured coursework and research plans to ensure Fellows complete their doctoral degrees within four years without compromising scientific rigor. The research experiences at DOE National Laboratories/SC user facilities and industries should be well integrated with the Fellow's thesis project.

The application must include expected outcomes and a management plan to assess progress and effectiveness of the proposed graduate training program. Attention should be given to balancing peer-reviewed publications with emergent high-value contributions: developing open-source software, creating and curating high-quality datasets, validating SI-driven discovery science, and improving uncertainty quantification. The management plan should address contingencies regarding completion of degree in four years.

Dual-Competency Framework

Many Ph.D.-granting institutions have emerging best practices for aligning SI-focused coursework with tools being deployed at scale within the national research environment. Dual-competency frameworks include advancing SI through science discovery and advancing science discovery through SI. In both cases, academic coursework must seamlessly integrate advanced methodologies with the student's primary scientific or engineering discipline. Thesis work must have a recognized impact on the SC-relevant Genesis Mission National Science and Technology Challenges as detailed in RFA DE-FOA-0003612. Science and technology disciplines with complex systems, large amounts of data, and a need to constantly test theories against real-world results are well-positioned for a dual-competency framework with SI as a required element. Coursework and research experiences must also address the ethical implications, safety guardrails, and limitations of SI applications in science and industry.

Structured Research Experiences

Research plans for each Fellow must integrate two high-impact research experiences, one at a DOE National Laboratory or SC user facility, and one in industry. Typical research experiences should be at least ten weeks in duration and directly relate to the thesis project of the Fellow. On-site mentors at the DOE National Laboratories, SC user facilities, or industry partners should be included in the Fellow's four-year research plan. Access to infrastructure — datasets, specialized instrumentation, exascale computing, computing platforms, and similar state-of-the-art resources — should be addressed in the research plan. Costs associated with the structured research experiences may only be requested for (a) mentors' time, effort, or travel and (b) necessary research infrastructure to support the Fellows' activities. Institutions of higher education should remain the employer of record during structured research experiences. There is no requirement that specific laboratories, facilities, or industrial partners be identified in an application. No specific legal relationship between the applicant and the laboratories, facilities, or industrial partners is required.

Student Financial Support

Budget requests should include comprehensive student expenses: highly competitive stipends, full tuition, and health insurance. The fellowship should include all costs for research-related travel and accommodations, including attendance at conferences and the structured research experiences. Mentors can be supported for activities related to the fellowship but not to supplement currently-funded research efforts. For example, travel support for mentors to co-supervise the Fellow follows best practices.

Domestic Talent Pipeline

In order to achieve the objectives of Executive Order 14363, "Launching The Genesis Mission," Pilots must ensure that all Fellows are U.S. citizens or lawful permanent residents. No such restrictions apply to PIs, mentors, collaborators, or the classmates of Fellows.

SUPPLEMENTARY INFORMATION

The SC-relevant Genesis Mission National Science and Technology Challenges detailed in RFA DE-FOA-0003612 are:

- **1. Reenvisioning Advanced Manufacturing and Industrial Productivity**
  - 1-A: Agentic SI-Driven Chemical Manufacturing
  - 1-B: SI-Driven Materials Processing
  - 1-C: SI-Enabled Manufacturing for Extreme Energy Systems
- **2. Scaling the Biotechnology Revolution**[2]

[2] This challenge was split into three challenges in the Genesis Mission National Science and Technology Challenges: Predicting Living Systems, Scaling Biology for American Industrial Leadership, and Early Detection and Attribution of Biological Threats.

  - 2-A: Biomolecular Science
  - 2-B: Genotype to Phenotype
  - 2-C: Predictive Engineering of Microbial Communities
  - 2-D: Bio Design
- **3. Securing America's Critical Minerals Supply**
  - 3-E: Geological Finders/Keepers
  - 3-F: Connections for Isolation
  - 3-G: Biological Pathways to CMM
- **5. Accelerating Delivery of Fusion Energy**
  - 5-A: Structural Materials
  - 5-B: Plasma-Facing Materials
  - 5-C: Advancing Confinement Approaches
  - 5-D: Fuel Cycle and Tritium Processing
  - 5-E: Tritium Breeding Blankets
  - 5-F: Fusion Plant Engineering and System Integration
  - 5-G: Plasma Science and Technology
- **7. Discovering Quantum Algorithms with SI**
  - 7-A: Application-aware Error Correction
  - 7-B: Computational Tools for Fault Tolerant Quantum Computational Science
  - 7-C: Hybrid Quantum-Classical Optimization Algorithms
  - 7-D: Quantum Algorithms for Nonlinear Plasma Physics
  - 7-E: Quantum Advantage for Nuclear and Hadronic Systems
- **8. Realizing Quantum Systems for Discovery**
  - 8-A: SI for Quantum Systems Design
  - 8-B: SI for Control of Quantum System
  - 8-C: SI for Quantum Imaging and Sensing
  - 8-D: SI for Quantum Computing and Networking
- **9. Recentering Microelectronics in America**
  - 9-B: Materials and Architectures for Non-von Neuman Computing Devices
  - 9-C: SI-Driven Architecture Design
  - 9-D: 3D non-volatile compute-in-memory technology
  - 9-E: Physics-Based Circuit Design, Simulation, and Emulation
  - 9-F: Microelectronics in Harsh Environments
  - 9-G: Plasma-Enabled Microelectronics Manufacturing
  - 9-H: Power Electronics and Communication Networks
  - 9-I: Low-temperature Electronics for Sensors and Computation
  - 9-J: Transform Neuromorphic Computing Connectivity, Communication, and System Hardware Integration
- **11. Achieving SI-Driven Autonomous Laboratories**
  - 11-A: Advanced Robotics for Dynamic Laboratory Environments
  - 11-B: SIOps - SI for Network Operations
  - 11-C: SI-Accelerated Science: Correlation to Understanding
  - 11-D: SI-Enabled Diagnostics and Remote Handling
  - 11-E: Accelerate the design and prototyping of neuromorphic computing circuit primitives for robotic embodied physical super intelligence
- **12. Designing Materials with Predictable Functionality**

  - 12-A: Functional to Quantum Materials
  - 12-B: Structural Materials
  - 12-C: Biomolecular Materials
  - 12-D: Plasma-Facing Materials
- **13. Enhancing Particle Accelerators for Discovery**
  - 13-A: SI-driven Accelerator Facilities
  - 13-B: Integration of Digital Twins for Fusion Systems and Actuators
- **14. Unifying Physics from Quarks to the Cosmos**
  - 14-A: Foundation Models of Particle Interactions and Cosmic Physics
  - 14-B: SI Accelerated DUNE Science
  - 14-C: Expedited Discovery from High Complexity and Petabyte-Scale Datasets
- **15. Predicting U.S. Water for Energy**
  - 15-A: Cloud Microphysics and Atmospheric Turbulence
  - 15-B: Water and Energy
  - 15-C: Weeks to Years Prediction
- **16. Scaling the Grid to Power the American Economy**
  - 16-A: Grid Modeling and Analysis
  - 16-B: Grid Operations Optimization
  - 16-C: Uncertainty Quantification
- **17. Unleashing Subsurface Strategic Energy Assets**
  - 17-A: Chemical and Hydrologic Transport in Subsurface
  - 17-B: Evolution of Fractures in the Upper Crust
- **18. HPC Code Curation, Translation, and Development for Accelerated Scientific Discoveries**
  - 18-A: SI-Driven Code Porting and Optimization
  - 18-B: Automated Scientific Problem-to-Code Generation
  - 18-C: Neuro-Symbolic Agents for Code Development
  - 18-D: Performance Prediction and Feedback Loops
  - 18-E: Trustworthy SI for Scientific Software
  - 18-F: Multi-Modal Data Integration for Code Intelligence
  - 18-G: Partnerships for HPC SI Advancement
- **19. SI for Scientific Reasoning**
  - 19-A: Trustworthy Mathematical and Symbolic Reasoning
  - 19-B: Hypothesis Generation from Multi-Modal Data
  - 19-C: Composable and Modular Foundation Models
- **20. Cybersecurity for SI-driven Science Workflows**
  - 20-A: SI for Adversarial Robustness and Resilience
  - 20-B: Data Provenance and Integrity Verification
  - 20-C: Real-Time Attack Detection and Mitigation for SI Models
- **21. Super Intelligence in Fluid Flow for Energy Components and Technologies**
  - 21-A: Physics-Informed SI for Complex Flow Modeling
  - 21-B: SI-Driven Design and Control for Performance and Durability

Many Federal agencies have a vested interest in the success of training domestic talent for the Genesis Mission. In addition to SC, stakeholders include other DOE offices, the

National Institutes of Health, the National Science Foundation, the Department of Defense, the Defense Advanced Research Projects Agency, the Department of Homeland Security, the National Aeronautics and Space Administration, and the National Institute of Standards and Technology, among others. Applications submitted to this NOFO may be shared with stakeholders beyond DOE.

1. OTHER PROGRAMMATIC GUIDANCE

Multi-Institutional Teams

A single application can span different Departments or Colleges at that institution. It is also allowable for Ph.D.-granting institutions to collaborate on an application in a prime/subaward relationship.

DOE National Laboratories, SC user facilities, and industry hosts for research experiences are not required to be proposed as subawards in the lead institution's application. These institutions are not required to be identified at time of application, and they may not be receiving funding in the application.

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

Collaborative Applications

Collaborative applications (in which each team member submits their own application with a common Project Narrative) will not be accepted under this NOFO.

Subawards[3]

Multi-institutional teams must submit one application from a designated lead institution with all other team members proposed as subrecipients.

DOE/NNSA National Laboratories and sites may be proposed as subrecipients.

The value of any such proposed subaward may be removed from any such prime award: DOE may make separate awards to Federally affiliated institutions.

Subawards must directly support the doctoral training of the Genesis Mission Graduate Fellows.

Open Science

[3] Subawards are made to subrecipients. Both terms are defined in 2 C.F.R. § 200.1. (https://www.ecfr.gov)

SC is dedicated to promoting the values of openness in Federally supported scientific research, including, but not limited to, ensuring that research can be reproduced and that the results of Federally supported research are made available to other researchers. These objectives can 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.

Export Control, Nonproliferation, Sanction, and Other Protocols

All entities submitting applications to this NOFO must recognize the moral and legal obligations to comply with export controls and policies that limit the transfer of technologies with potential dual use. Applicants are reminded that international activities must comply with nonproliferation, sanction, and other protocols described at https://www.trade.gov/export-solutions.

International activities related to special nuclear materials (SNM) are subject to additional requirements. Please see 10 C.F.R. part 810 for further information.

All work proposed under this NOFO must be for basic and fundamental research whose results may be published in scholarly literature. Do not submit applications containing restricted data or unclassified controlled nuclear information as defined in the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2011, et seq., 10 C.F.R. part 1017, 10 C.F.R. part 1045.

Program Goals, Objectives, and Priorities

SC's mission is to deliver scientific discoveries and major scientific tools to transform our understanding of nature and advance the energy, economic, and national security of the 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 27 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 DOE'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.

Expected Performance Goals

You will be expected to demonstrate progress in both the training and research activities of the pilot in periodic progress reports. Applicants are expected to recruit Fellows and begin their four-year degree program within one year of award.

Applications Specifically Not of Interest

DOE will not review or consider the following types of applications as determined by DOE without appeal (also refer to the Responsiveness Review section below):

- Applications that fall outside the technical parameters specified in Background and Context.
- Applications focused solely on curriculum development.
- Applications that are not based on sound scientific principles (e.g., violates the laws of thermodynamics).
- Applications lacking proposed research activities with a recognized impact on the SC-relevant Genesis Mission National Science and Technology Challenges as detailed in RFA DE-FOA-0003612.

Statutory Authority

The programmatic authorizing statutes and governing regulations are:

- U.S. Department of Energy Organization Act, codified as amended at 42 U.S.C. § 7256 (2020)
- One Big Beautiful Bill Act of Jul. 4, 2025, Pub. L. No. 119-21, § 50404, 139 Stat. 72 (2025)
- Energy Policy Act of 2005, Pub. L. No. 109-58, §§ 901, 911, 965, 119 Stat. 594 (2005)
- CHIPS and Science Act of 2022, Pub. L. No. 117-167, § 10731, 136 Stat. 1366 (2022)
- National Quantum Initiative Act, Pub. L. No. 115-368, § 401, 132 Stat. 5100, 5105 (2018)
- Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, codified at 2 C.F.R. part 200 (2024)
- U.S. Department of Energy Financial Assistance Rules, codified at 2 C.F.R. part 910 (2022)

- U.S. Department of Energy, Office of Science Financial Assistance Program Rule, codified at 10 C.F.R. part 605 (2014)

Program History

You can learn about SC's history, achievements, and awards in the following resources:

- History
- Achievements
- Awards

IV. Application Content and Form

This section includes application information specific to this NOFO. Refer to NOFO Part 2, *Application Content and Form*, for standard information that applies to all DOE NOFOs, such as formatting and content requirements and other requirements.

A. Preliminary Submissions

1. Letter of Intent

Letter of Intent Due Date

A Letter of Intent (LOI) is required and must be submitted by the date indicated on the cover of this NOFO.

Response Date

The response date is printed on the cover of this NOFO. Applicants who have not received a response regarding the status of their LOI by this date are responsible for contacting GM-Uni-Engagement@doe.gov to confirm this status.

The LOI helps plan the review, including the selection of potential reviewers for the application.

The LOI must begin with a title page that will not count toward the LOI page limitation. The title page must include the following information:

- The project title
- Principal Investigator (PI) Name, Job Title
- Lead Institution
- PI Phone Number, PI Email Address
- NOFO Number: Include the NOFO number printed on the cover of this NOFO

- The primary challenge area as identified in Section III of The Genesis Mission: Transforming Science and Energy with AI Notice of Request for Application (RFA) Number: DE-FOA-0003612: [For example, 1 - Reenvisioning Advanced Manufacturing and Industrial Productivity]
- [Optional]: One or more secondary challenge areas identified in Section III of The Genesis Mission: Transforming Science and Energy with AI Notice of Request for Application (RFA) Number: DE-FOA-0003612: [For example, 7 - Discovering Quantum Algorithms with SI; 12 - Designing Materials with Predictable Functionality; 18 - HPC Code Curation, Translation, and Development for Accelerated Scientific Discoveries]
- Include a list of all senior/key personnel at the applicant and subaward institutions

The title page must be followed by a clear and concise description of the objectives and technical approach of the proposed pilot, including both curriculum development and Genesis Mission research. A high-level description of the cost, schedule, and major milestones of the pilot should be included.

The description of the proposed pilot may not exceed two pages, 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 two-page limit.

In addition, the LOI must include a list of individuals who should not serve as merit reviewers of a subsequent application. Detailed instructions for how to craft the required list are provided in Part 2 of this NOFO. **Note that the list of individuals who should not serve as merit reviewers is rarely empty because the instructions contain mandatory inclusions requirements.** This list will not count toward the LOI's page limit. The list of individuals must be included as an "Additional Attachment" to your LOI in PAMS.

The LOI must be machine-readable. Do not submit a scanned image of a printed document.

LOI Review

Encouraged LOIs will be used to help SC begin planning for the application peer review process. SC's intent in discouraging submission of certain applications is to save the time and effort of applicants in preparing and submitting applications not responsive to this NOFO.

The PI will be automatically notified when the LOI is encouraged or discouraged. The DOE SC Portfolio Analysis and Management System (PAMS) will send an email to the PI from PAMS.Autoreply@science.doe.gov, and the status of the LOI will be updated at the PAMS website. Notifications are sent as soon as the decisions to encourage or discourage are finalized.

LOI Submission

LOIs are created in the software system of your choice and must be submitted electronically through the PAMS website. You cannot draft or edit an LOI in PAMS. Do not submit an LOI through FedConnect or Grants.gov.

LOIs may only be submitted by a user at the PI's institution with the "Submit to DOE" privilege in PAMS. A PI may draft a LOI but will only be able to submit the LOI for institutional countersignature.

Applicants are strongly encouraged to inform their DOE Program Manager if teaming arrangements, proposed personnel, topics, or the anticipated title change between submitting the LOI and when an application is submitted to ensure that their application is properly linked to their LOI and that reviewers are properly assigned to the application.

Detailed instructions about how to submit an LOI are in Part 2 of this NOFO.

2. Pre-Application

Not applicable.

B. Application

Applications in response to this NOFO must be submitted through Grants.gov. Detailed instructions for registering in and using Grants.gov are in Part 2 of this NOFO.

C. Component Pieces of the Application

Letters of Support and Collaboration

Letters from collaborators or from institutions providing access to high-impact research experiences, data, models, software, equipment, or facilities may be appended to your Project Narrative and are not considered part of the Project Narrative's page limit. Please ensure that letters from collaborators or from institutions only describe the nature of the collaboration or the access to high-impact research experiences, data, models, software, equipment, or facilities. Letters of recommendation are not allowed in applications under this NOFO.

All letters may be addressed "To Whom It May Concern:".

Letters of collaboration or access should be placed in Appendix 7 (Other Attachments). Letters of collaboration or access must not be written as recommendation or endorsement letters, which are not allowed. Each letter of collaboration or access may contain two and only two sentences and must use the following format:

Dear <Principal Investigator Name>:

If your application entitled, "<Application Name>," is selected for funding under the NOFO Name, it is my intent to collaborate in this research by <Complete Sentence With a Very Short Description of What the Collaborator Offers to Do or Provide>.

Thank you for the opportunity to participate.

Sincerely,

<Collaborator's Name and Signature Block>

Scientific User Facilities

Documentation from any SC scientific user facility may be provided with other letters of collaboration or access in Appendix 7.

1. SF-424 (R&R)

Complete this form first to populate data in other forms. Complete all the required fields in accordance with the pop-up instructions on the form. The list of certifications and assurances referenced in Field 17 is available on the DOE Financial Assistance Forms Page under Certifications and Assurances.[4] Applicants are bound by their representations and certifications in SAM.gov.

Type of Submission (Field 1)

Select the checkbox for "Application" for an initial submission. Select the checkbox for "Changed/Corrected Application" if submitting an updated version of an application. Do not submit pre-applications via Grants.gov: Do not select the checkbox for "Pre-application."

Identifying numbers (Field 4)

For renewals and supplemental funding, enter the DOE award number in Field 4a. Do not enter any other number in Field 4a. Do not enter anything in Field 4b. If submitting an updated version of an application, you may enter the previous Grants.gov Tracking ID in Field 4c, though this is not required.

UEI and EIN Numbers (Fields 5 and 6)

The Uniform Entity Identifier (UEI) and Employer Identification Number (EIN) fields on the SF-424 (R&R) form are used in PAMS to confirm the identity of the individual or organization submitting an application.

- Enter the UEI as a 12-digit alpha-numerical sequence.
- Enter the EIN as a nine-digit number.
- Do not use hyphens or dashes.

[4] No separate form or submission is required for the Certifications and Assurances.

- SC does not use the 12-digit EIN format required by some other agencies.
- Applications will not be rejected if an applicant's system-to-system service uses a 12-digit EIN format or inserts hyphens or dashes in an EIN.

Type of Application (Field 8)

A **new** application is one in which DOE support for the proposed research is being requested for the first time. Only new applications will be considered under this NOFO.

Please answer "yes" to the question "Is this application being submitted to other agencies?" if substantially similar, identical, or closely related research objectives are being submitted to another Federal agency. Indicate the agency or agencies to which the similar objectives have been submitted.

Do not attach pre-applications to Field 20 of the SF-424(R&R) form or letters of intent to Field 21 of the SF-424(R&R) form.

2. Research and Related Other Project Information

Complete questions in Fields 1 through 6 of the SF-424 Research and Related Other Project Information form.

Note regarding question 4.a. and 4.b.

If any environmental impact, positive or negative, is anticipated, indicate "yes" in response to question 4.a., "potential impact – positive or negative - on the environment." Disclosure of the impact should be provided in response to question 4.b. First, indicate whether the impact is positive or negative and then identify the area of concern (e.g., air, water, exposure to radiation, impacts to endangered species or historic properties, etc.).

For actions that could have adverse impacts to the environment or have any possibility for adverse impacts to human health (e.g., use of human subjects, Biosafety Level 3-4 laboratory construction/operation, manufacture or use of certain nanoscale materials which are known to impact human health, or any activities involving transuranic or high level radioactive waste, or use of or exposure to any radioactive materials beyond de minimis levels), applicants should indicate a "negative" impact on the environment.

Lastly, based on requirements and guidance in 10 C.F.R. § 1021.102 and DOE's National Environmental Policy Act Implementing Procedures, to find that a proposal is covered by a categorical exclusion (CX), DOE will determine if: (1) the proposal fits within one or more classes of actions for which CXs are permissible, (2) there are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal (DOE or an applicant may modify the proposal to avoid reasonably foreseeable adverse significant effects such that the CX would apply), and (3) the proposal has not been segmented to meet the definition of a CX.

The bulk of your application will consist of files attached to the Research and Related Other Project Information form. The files must comply with the following instructions:

Project Summary/Abstract (Field 7 on the Form)

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 include:

- The project title, the PI name and the PI's institutional affiliation, and any coinvestigators and their institutional affiliations. This information, and the information described below, must fit within the one-page abstract.
- The title page information must be followed by a statement of the pilot's objectives, a description of the pilot, including methods to be employed, and the potential impact of the pilot (i.e., benefits, outcomes).
- The description of the proposed pilot, including the dual-competency framework and research activities, 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:

Pilot 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 Pilot Title and list of investigators)

If an application is recommended for award, the project summary will be used to prepare 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.

DOE Title Page
(Part of Project Narrative attached to Field 8 on the form)

The application narrative must begin with a title page that will not count toward the Project Narrative page limitation. The title page must include the following items:

- The project title
- Applicant/Institution
- Street address, city, state, ZIP

- Postal address
- Lead PI name, telephone number, email
- Administrative point of contact name, telephone number, email
- NOFO number: Include the NOFO number printed on the cover of this NOFO
- The primary challenge area as identified in Section III of The Genesis Mission: Transforming Science and Energy with AI Notice of Request for Application (RFA) Number: DE-FOA-0003612: [For example, 1 - Reenvisioning Advanced Manufacturing and Industrial Productivity]
- [Optional] One or more secondary challenge areas identified in Section III of The Genesis Mission: Transforming Science and Energy with AI Notice of Request for Application (RFA) Number: DE-FOA-0003612: [For example, 7 - Discovering Quantum Algorithms with SI; 12 - Designing Materials with Predictable Functionality; 18 - HPC Code Curation, Translation, and Development for Accelerated Scientific Discoveries]
- LOI number
- If a multi-institutional team is being proposed, provide the following information on a separate page. This information will not count toward the page limitation.
  - Indicate the lead PI who will be the point of contact and coordinator for the fellowship activity.
  - Include a table modeled on the following chart providing summary budget information from all institutions. Provide the total costs of the budget request in each year for each institution and totals for all rows and columns.

Multi-Institutional Team Information								
	Names	**Institution**	**Year 1 Budget**	**Year 2 Budget**	**Year 3 Budget**	**Year 4 Budget**	**Year 5 Budget**	**Total Budget**
Lead PI								
Co-PI								
Co-PI								
Co-PI								

Example budget table ($ in thousands)

The material listed here defines the required content of a title page. Additional material is not allowed.

Important Instructions to the Sponsored Research Office of Submitting Institutions

SC requires you to create 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 attached in Field 8 on the Grants.gov form. This file 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 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. Do not attach any of the appendices listed in this paragraph separately in any other field in Grants.gov. If you do, these additional attachments will not become part of the application in PAMS.

Project Narrative (Field 8 on the form)

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-inch x 11-inch) paper with 1-inch margins (top, bottom, left, and right). The body text font of all main text 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 Title Page, Budget Page(s), Budget Justification, biographical material, publications and references, appendices, and an optional table of content, each of which may have its own page limit defined later in this NOFO.

Do not include any websites (URLs) that provide supplementary or additional information that constitutes a part of the application. Merit reviewers are not required to access websites; however, internet publications in a list of references will be treated identically to print publications. See Part 2 of this NOFO for instructions on how to mark proprietary application information. To attach a Project Narrative, click "Add Attachment."

Background/Introduction: Provide a brief introduction to the proposed pilot fellowship program, including both the dual-competency framework and research activities. Identify specific capabilities, resources, and characteristics that support the goals of this Pilot.

Proposed Pilot: This should be the bulk of your narrative. Present your proposed pilot, including a detailed implementation plan, estimated number of Fellows, proposed research activities and how those activities address the Genesis Mission Science and Technology Challenges and Focus Areas as identified in Section III of The Genesis Mission: Transforming Science and Energy with AI Notice of Request for Application (RFA) Number: DE-FOA-0003612, and infrastructure, including two high-impact research experiences for each Fellow, one at a DOE National Laboratory or SC user facility and one in industry. Describe how an accelerated doctoral program with thesis-supporting research experiences at both a DOE National Laboratory/SC user facility and industry will be designed. Describe the proposed implementation model for dual-competency in SC-aligned research disciplines and SI. Describe how ethical SI implications will be integrated and how the proposed research will inform and impact relevant scientific fields.

Management Plan: Specific outcomes related to the recruitment and retention of Fellows should be addressed as well as methods for developing thesis research plans and how responsibilities for advising will be shared with co-mentors. Opportunities for networking and professional development for the Fellows should be described. Discuss planned strategies to

ensure Fellows complete a Ph.D. in four years demonstrating SI computational foundations and science and technology expertise. Describe who manages and plans the recruitment, onboarding, and support of the inaugural cohort of Fellows, and what institutional commitments are planned to ensure success. Successful recruitment of Fellows and progress towards degree is expected within one year of award.

Your narrative should demonstrate an awareness of the challenges to reach the goals of the pilot and also specify how those challenges will be mitigated. Identify what resources will be provided by your departments, institutions, and partnering institutions to support these efforts. Describe how these resources will be coordinated.

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

SC will apply a "fair-use" concept regarding use of generative super intelligence to support investigators' efforts in presenting their intellectual work in an application. Guided by the principles expressed by others (ACM.org and IEEE.org), applicants must disclose the use of any super intelligence tools in applications, unless the tools were used solely for editing an original draft.

Buy America Preference for Infrastructure Projects

Awards funded through this NOFO that are for, or contain, construction, alteration, maintenance, or repair of public infrastructure in the U.S. undertaken by applicable recipient types, require that:

- All iron, steel, and manufactured products used in the infrastructure project are produced in the U.S.; and
- All construction materials used in the infrastructure project are manufactured in the U.S.

Applicants should consult 2 C.F.R. part 184 and Part 2 of this NOFO to determine whether the Buy America Preference applies and if they should consider the application of the Buy America Preference in the proposed project's budget and/or schedule.

Within the first two (2) pages of the Project Narrative, include a short statement on whether the project will involve the construction, alteration, maintenance and/or repair of public infrastructure in the U.S. See Part 2 of this NOFO for applicable definitions and other information regarding Infrastructure Projects and the Buy America Preference.

Appendices

Do not attach any of the requested appendices described below as files for Fields 9, 10, 11, and 12 on the *SF-424 Research and Related Other Project Information* form in Grants.gov.

Follow the instructions below, including the information as appendices in the single Project Narrative file.

Biographical sketches and current and pending support may no longer be provided as attachments to a Project Narrative. These documents must be attached to the *Research and Related Senior/Key Person Profile (Expanded)* form in an application.

Appendix 1: 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 title and journal name, book title, volume number, page numbers, and year of publication.

For research areas where there are routinely more than 10 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 application. Provide the Bibliography and References Cited information as an appendix to your Project Narrative.

This appendix will not count in the Project Narrative page limitation.

Do not attach a bibliography to Field 9 of the *Research and Related Other Project Information* form.

Appendix 2: Facilities and Other Resources

This information is used to assess the capability of the organizational resources, including subrecipient resources, available to perform the effort proposed. Identify the facilities to be used (Laboratory, Animal, Computer, Office, Clinical and Other). If appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources directly applicable to the proposed work. Describe other resources available to the project (e.g., machine shop, electronic shop) and the extent to which they would be available to the project. For proposed investigations requiring access to experimental user facilities maintained by institutions other than the applicant, provide a document from the facility manager confirming that researchers will have access to the facility. Such documents, provided they do not become letters of support or recommendation, may be printed on any letterhead. Provide the Facility and Other Resource information as an appendix to your Project Narrative.

This appendix will not count in the Project Narrative page limitation.

Do not attach a facilities and other resources statement to Field 10 of the Research and Related Other Project Information form.

Appendix 3: Equipment

List major items of equipment already available for this project and, if appropriate, identify location and pertinent capabilities. Provide the Equipment information as an appendix to your Project Narrative.

This appendix will not count in the Project Narrative page limitation.

Do not attach an equipment statement to Field 11 of the Research and Related Other Project Information form.

Appendix 4: Data Management and Sharing Plan

Provide a Data Management and Sharing Plan (DMSP) as an appendix to the Project Narrative. DMSPs are not required for applications that only request support for a conference, workshop, or scientific meeting. Subject to applicable cost principles, applications may request costs necessary for implementing the DMSP.

This appendix should not exceed a page limit of two 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 to Field 12 of the Research and Related Other Project Information form.

This appendix will not count in the Project Narrative page limitation.

The standard requirements for a DMSP may be found in Part 2 of this NOFO. In addition, the DMSP 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

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[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. 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

- What developed software, data sets, and models will be made available using an "opensource" licensing arrangement, noting the Software Package Data Exchange (SPDX) identifiers when possible
    - Where deviation in this arrangement is expected from The Open Source Initiative's Open Source Definition, you must provide a specific justification.
- How best practices in scientific software development will be applied to any development activities
    - You can find more information on best practices on the Better Scientific Software website.

Appendix 5: Transparency of Foreign Connections

As an appendix to your Project Narrative, applicants must provide the following information as it relates to the proposed recipient and subrecipient(s). Include a separate disclosure for the applicant and each proposed subrecipient.

Disclosure exceptions by entity type:

- U.S. National Laboratories and domestic government entities are not required to respond to the Transparency of Foreign Connections disclosure.
- Institutions of higher education and non-profit research organizations are only required to respond to items with an asterisk symbol (*).
- The applicability of disclosure requirements is determined by the entity type. Regardless of whether the applicant is exempt, the subrecipient(s) must provide these disclosures unless the subrecipient is also exempt.

Applicants, regardless of entity type, must provide complete responses for all proposed subrecipients that are not U.S. National Laboratories, domestic government entities, or institutions of higher education.

Disclosure Format

For the convenience of the entity providing the disclosure and certification a template is available at Transparency of Foreign Connections | Department of Energy, however, the entity is not required to use this specific format. If another format is used, the signatory must include the same substantive information, a signature, date, and the certification statement provided at Transparency of Foreign Connections | Department of Energy.

If you have questions, email your questions to rtesinfo@hq.doe.gov.

DOE reserves the right to request additional or clarifying information based on the information submitted.

If selected for award negotiations, the selected applicant must provide, as needed: (1) transparency of foreign connections disclosures for any new subrecipients, and (2) updated disclosures if there are changes to the transparency of foreign connections disclosures previously

submitted to DOE. Also see the Transparency of Foreign Connections information in the Application Contents Requirements section above.

Appendix 6: Other Attachment

If you need to elaborate on your responses to questions 1–6 on the "Other Project Information" document, please provide the Other Attachment information as an appendix to your Project Narrative. Information not easily accessible to a reviewer may be included in this appendix, but do not use this appendix to circumvent the page limitations of the application. Reviewers are not required to consider information in this appendix.

Do not attach a separate file to Field 12 of the Research and Related Other Project Information form.

This appendix will not count in the Project Narrative page limitation.

Reminders Regarding all Appendices

- Follow the above instructions to include the information as appendices to the Project Narrative file.
- These appendices will not count toward the Project Narrative's page limitation.
- Do not attach any appendices to Fields 9, 10, 11, or 12.

3. Research and Related Senior/Key Person Profile (Expanded)

Complete the Research and Related Senior/Key Person Profile (Expanded) form in accordance with the instructions on the form and the following instructions. Complete this form before the Budget form to populate data on the Budget form.

You must submit this information for the PI and all senior/key personnel who will be identified by name in Section A of the application's budget. List all other personnel who contribute in a substantive, meaningful way to the scientific development or execution of the project whether or not salaries are requested. Consultants should be included in the *Senior/Key Person Profile (Expanded)* form if they meet this definition. List individuals that meet the definition of senior/key regardless of what organization they work for. Senior/key personnel must be aware they are included in the application and must agree to perform the work if awarded. The form will pre-populate with the PI identified on the SF-424(R&R) form. For each senior/key person:

- Complete the required sections in their profile.
- In the "credential" field, enter the person's PAMS username, if known.
- Attach the person's biographical sketch, following the instructions in Part 2 of this NOFO for crafting a biographical sketch.
- Attach the person's current and pending support, following the instructions in Part 2 of this NOFO for crafting current and pending support.

The Senior/Key Person Profile (Expanded) form will support the PI and up to 99 additional senior/key personnel. On the addition of the 99th senior/key person, you will be presented with an option to upload an additional file with the required information for all other senior/key personnel.

4. Research And Related Budget

Complete the *Research and Related Budget* form in accordance with the instructions on the form (activate Help Mode to see instructions) and the following instructions. You must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. You must complete all mandatory information on the form before the NEXT PERIOD button is activated. All fields with a red border are required, but you may enter a zero "0" in any field you are not requesting funds for. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this NOFO.

You can find additional information in Part 2 of this NOFO.

Budget Justification (Field L on the form)

Provide a justification that explains all costs proposed in the budget. The following items of advice are offered to assist you in developing a justification.

- Organize the justification by listing items in the same order as presented on the budget.
- Ensure the narrative matches the budget in dollar amounts and language.
- Explain the line items. If costs are estimated, provide a basis for the estimate. Explain if costs are based on prior experience of similar activities. If a cost is based on the product of two numbers (such as a number of items at a per-item price), ensure your math is correct.
- If including an inflationary factor for future budget periods, explain the basis for the inflationary factor.

Provide any other information you wish to submit to justify your budget request. Including items in the budget justification is not considered a form of cost sharing. Provide the details of all personnel (key or other) who will be working on the award, regardless of their sources of compensation. Explain their sources of compensation if it is not from this award. Include the indirect cost rate agreement as a part of the budget justification.

Attach a single budget justification file for the entire project period in Field L. The file automatically carries over to each budget year.

You can find additional information in Part 2 of this NOFO.

5. R&R Subaward Budget Attachments Form

You must provide a separate R&R budget and budget justification for each subrecipient. Download the *R&R Budget Attachment* from the *R&R Subaward Budget Attachments Form* and either email it to each subrecipient that is required to submit a separate budget or use the collaborative features of Workspace.

After the subrecipient has either emailed its completed budget back to you or completed it within Workspace, attach it to one of the blocks provided on the form. All fields with a red border are required, but you may enter a zero "0" in any field you are not requesting funds for. Use up to ten letters of the subrecipient's name (plus.pdf) as the file name (e.g., ucla.pdf or energyres.pdf). Filenames must not exceed 50 characters.

If the project involves more subrecipients than there are places in the *Subaward Budget Attachments Form*, the additional subaward budgets may be saved as PDF files and appended to the Budget Justification attached to Field L.

Applicants should consult their local information technology (IT) support resources for any necessary assistance in converting the forms downloaded from Grants.gov into plain PDF files that can be combined into one non-Portfolio PDF file (the Budget Justification).

Ensure any files received from subrecipients are the PDF files extracted from the *Subaward Budget Attachments Form*. Errors will occur if a subrecipient sends a prime applicant a budget form that was not extracted from the application package.

In addition, the prime award budget request should include any subawards to a DOE/NNSA National Laboratory, a Federal agency, or another Federal agency's FFRDC, and subaward budgets and budget justifications should be included in the application. The details of such proposed budgets are essential for understanding and analyzing the proposed research. If recommended for an award, a revised budget will be requested where the value of such proposed subawards is deducted from any resulting award. SC will pay those classes of organizations directly.

6. Project/Performance Site Locations

Indicate the primary site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the blocks provided. Do not include sites that are not certain to be places where work will be performed.

The Project/Performance Site congressional district is entered in the format of the 2-digit state code followed by a dash and a 3-digit congressional district code, for example VA-001. Hover over this field for additional instructions.

Use the *Next Site* button to expand the form to add additional Project/Performance Site Locations.

7. Disclosure of Lobbying Activities (SF-LLL)

If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, *Disclosure Form to Report Lobbying*. Applicants that have never paid any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress do not need to submit this form.

8. Identification of Merit Reviewer Conflicts

Provide a list of individuals who should not serve as merit reviewers of this application, following the instructions in Part 2 of this NOFO. Attach this information to Field 12 of the Research and Related Other Project Information Form.

9. Summary of Required Forms/Files

Your application must include the following items:

Name of Document	Format	Attach to
SF 424 (R&R)	Form	N/A
Research and Related Other Project Information	Form	N/A
Project Summary/Abstract	PDF	Field 7
Project Narrative, including required appendices	PDF	Field 8
Identification of Merit Review Conflicts	File	Field 12
Research and Related Senior/Key Person Profile (Expanded)	Form	N/A
Research and Related Budget	Form	N/A
Budget Justification	PDF	Field L
R&R Subaward Budget Attachments Form (if applicable)	Form	N/A
Subaward Budget Justification (if applicable)	PDF	Field L of the subaward budget
Project/Performance Site Locations	Form	N/A
SF-LLL Disclosure of Lobbying Activities, if applicable	Form	N/A

D. Information Submitted After Application but Before Award

If selected for award, DOE reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 C.F.R. § 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable
- Environmental Information
- Information required to resolve concerns about conflicts of interest, conflicts of commitment, potential duplication of support

Applicants that do not already have an Indirect Cost Rate Agreement with their Cognizant Federal Agency or documentation of rates accepted for estimating purposes by DOE or another Federal agency should begin preparing an Indirect Cost Rate Proposal for submission, on request, to the DOE contract specialist/grants management specialist who will evaluate your application if you are selected for award.

E. Use and Disclosure of Application Information

In addition to the information provided in NOFO Part 2, *Use and Disclosure of Application Information*, for compliance with *Presidential Memorandum Simplifying the Funding of Energy Infrastructure and Critical Mineral and Material Projects*, the Department of Energy may share and use within the Government any application information provided by or on behalf of the applicant. Accordingly, in accordance with applicable law and notwithstanding any other provisions herein, by submitting an application or agreeing to a financial assistance arrangement with the Department of Energy under this NOFO, the applicant is providing consent for any properly marked trade secret, confidential, proprietary, privileged or otherwise sensitive application information provided by or on behalf of the applicant to be disclosed to the Executive Office of the President and relevant Agencies offering loans, grants, equity, guarantees or other Federal funding, for the purposes of the *Presidential Memorandum on Simplifying the Funding of Energy Infrastructure and Critical Mineral and Material Projects*.

Furthermore, DOE may partner with the Foundation for Energy Security and Innovation (FESI), an independent, nonprofit organization authorized by the CHIPS and Science Act of 2022 (42 U.S.C. § 19281) to support DOE's mission, on the Genesis Mission Graduate Fellowship Pilot program to enhance its impact. As part of this collaboration, DOE may share with FESI application materials submitted by the applicant, along with merit review materials. FESI will keep the application and merit review materials confidential and only use them for purposes of the Genesis Mission Graduate Fellowship Pilot program.

V. Submission Requirements and Deadlines

You **must** take several one-time actions before applying to this NOFO. Some of these tasks may take several weeks. These requirements are outlined in detail in the NOFO Part 2, *Get Registered and Required Registrations*.

A. Address to Request Application Package

Application forms and instructions are available at Grants.gov. To access these materials, go to Grants.gov, select "Search Grants," and then enter the Assistance Listings[8] number (81.049) or the NOFO number shown on the cover of this NOFO. Select the "Apply" button to access the application package.

Applications submitted through FedConnect will not be accepted. Applications may not be submitted through PAMS.

Detailed instructions for registering in and using Grants.gov are in Part 2 of this NOFO.

B. Unique Entity Identifier (UEI) and System for Award Management (SAM.gov)

Applicants must complete a series of registrations and enrollments to submit applications in response to this NOFO. Applicants not currently registered with SAM.gov and Grants.gov should allow **at least four weeks** to complete these requirements. Applicants refers to the legal entity submitting an application. The applicant is usually a corporate entity, not an individual investigator.

You should start the process as soon as possible.

You may not be able to use your preferred Internet browser: Each system has its own requirements.

Applicants must register with SAM.gov and obtain a UEI. You can find assistance with this process at the SAM Help Desk.

Applicants must provide a Taxpayer Identification Number (TIN) to complete their registration in SAM.gov. An applicant's TIN is an EIN assigned by the Internal Revenue Service (IRS). You may obtain an EIN online from the IRS if you don't already have one. Do not use a social security number in place of a TIN.

If entities have technical difficulties with the UEI validation or SAM registration process, use the HELP feature on SAM.gov. SAM.gov will work entity service tickets in the order they receive them and asks that entities not create multiple service tickets for the same request or technical issue.

1. Requirement for System for Award Management

[8] The Assistance Listings were formerly known as the Catalog of Federal Domestic Assistance (CFDA).

Unless exempt from this requirement under 2 C.F.R. § 25.110, the recipient must maintain a current and active registration in SAM.gov. The recipient's registration must always be current and active until the recipient submits all final reports required under this Federal award or receives the final payment, whichever is later. The recipient must review and update its information in SAM.gov at least annually from the date of its initial registration or any subsequent updates to ensure it is current, accurate, and complete. If applicable, this requirement includes identifying the recipient's immediate and highest-level owner and subsidiaries and providing information about the recipient's predecessors that have received a Federal award or contract within the last three years.

2. Requirement for Unique Entity Identifier (UEI)

If the recipient is authorized to make subawards under this Federal award, the recipient:

- Must notify potential subrecipients that no entity may receive a subaward until the entity has provided its UEI to the recipient.
- Must not make a subaward to an entity unless the entity has provided its UEI to the recipient.
  - Subrecipients are not required to complete full registration in SAM.gov to obtain a UEI.

C. Submission Instructions

Letters of Intent (LOIs) and pre-applications, if permitted under this NOFO, must be submitted in PAMS. Detailed instructions for LOIs are in Part 2 of this NOFO. Detailed instructions for pre-applications are in Part 2 of this NOFO.

Applications must be submitted in Grants.gov. Detailed instructions are in Part 2 of this NOFO.

D. Submission Dates and Times

1. Letter of Intent Due Date

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

You are encouraged to submit your LOI well before the deadline. LOIs may be submitted at any time between the publication of this NOFO and the stated deadline.

2. Pre-Application Due Date

Not applicable.

3. Application Due Date

The application due date is printed on the cover of this NOFO.

You are encouraged to submit your application well before the deadline. Applications may be submitted at any time between the publication of this NOFO and the stated deadline.

4. Late Submissions

Delays in submitting LOIs or applications 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 email GM-Uni-Engagement@doe.gov to discuss the option of a late submission. Contacting GM-Uni-Engagement@doe.gov 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 an application, an authorized institutional official may appeal to correct its error by emailing GM-Uni-Engagement@doe.gov within 48 business hours of the deadline. This grant of leniency is at DOE's sole discretion.

E. Intergovernmental Review

This NOFO is not subject to Executive Order 12372, Intergovernmental Review of Federal Programs.

VI. Application Review Information

A. Standards for Application Evaluation

Applications that pass the initial review will be subjected to a formal merit review and will be evaluated based on the criteria codified at 10 C.F.R. § 605.10(d) in accordance with the guidance provided in the *Office of Science Merit Review System for Financial Assistance*.

B. Responsiveness Review

We will not review or consider the following LOIs and applications:

- Project concepts or approaches identified as NOT of interest (see the Applications Specifically Not of Interest section above)
- Applicants and applications that do NOT meet the Eligibility Criteria in NOFO Parts 1 and 2

C. Review Criteria

1. Compliance Criteria

Prior to a comprehensive merit evaluation, DOE will perform an initial review in accordance with 10 C.F.R. § 605.10(b) to determine that the applicant is eligible for the award; the information required by the NOFO, including LOIs, has been submitted; all mandatory requirements are satisfied; the proposed project is responsive to the objectives of the NOFO; and the proposed project does not duplicate programmatic work. Applications that fail to pass the initial review will not be forwarded for merit review and will be eliminated from further consideration.

2. Technical Review Criteria

Applications will be subjected to scientific merit review (peer review) and will be evaluated against the following criteria, listed in descending order of importance, as found in 10 C.F.R. § 605.10(d), the Office of Science Financial Assistance Program Rule.

- Scientific and/or Technical Merit of the Project;
- Appropriateness of the Proposed Method or Approach;
- Competency of Applicant's Personnel and Adequacy of Proposed Resources;
- Reasonableness and Appropriateness of the Proposed Budget; and
- Appropriateness of the Data Management and Sharing Plan.

External peer reviewers are selected regarding both their scientific expertise and the absence of conflict-of-interest issues. Both Federal and non-Federal reviewers may be used, and submitting an application constitutes agreement that this is acceptable to the investigators and the submitting institution.

The questions below are provided to the merit reviewers to elaborate the criteria established by regulation:

1. Scientific and/or Technical Merit of the Project

- Is the work proposed for the Genesis Mission Graduate Fellows in direct support of SC-relevant Genesis Mission National Science and Technology Challenges as detailed in RFA DE-FOA-0003612?
- What is the scientific innovation of the proposed research?
- What is the likelihood of achieving valuable results?
- How might the results of the proposed work impact the direction, progress, and thinking in relevant scientific fields of research?
- How does the proposed work compare with other efforts in its field, both in terms of scientific and/or technical merit and originality?

2. Appropriateness of the Proposed Method or Approach

- Does the applicant have a well thought out process for recruiting and retaining Fellows during a four-year PhD program?
- Does the proposed management plan provide sufficient mentorship, access to support, and a framework to integrate research experiences with thesis projects?
- Has the applicant clearly specified a set of skills and capabilities in super intelligence that will be acquired by the Fellows?
- How logical and feasible are the research approaches?
- Does the proposed research employ innovative concepts or methods?
- Are the conceptual framework, methods, and analyses well justified, adequately developed, and likely to lead to scientifically valid conclusions?
- Does the applicant recognize significant potential problems and consider alternative strategies?

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

- How well qualified is the team to carry out the proposed pilot program?
- Based on past performance or current plans, has the applicant institution demonstrated an aptitude for standing up innovative programs?
- Are the roles for Fellows, mentors including any co-mentors, and department or institutional staff clearly specified?
- Are resources adequate to provide Fellows support throughout their time-to-degree?
- Are the research environment and facilities adequate for performing the research and hosting Fellows?
- Does the proposed work take advantage of unique facilities and capabilities?

4. Reasonableness and Appropriateness of the Proposed Budget

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

5. Appropriateness of the Data Management and Sharing Plan

- To what extent does the Data Management and Sharing Plan (DMSP) enable data generated during the research project to be publicly shared and preserved in a timely and fair manner that enables validation and replication of results?
- 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 pilot?

D. Review and Selection Process

Applications that pass the initial review will be subjected to a formal merit review and will be evaluated based on the criteria codified at 10 C.F.R. § 605.10(d) in accordance with the guidance provided in the *Office of Science Merit Review System for Financial Assistance*.

E. Other Selection 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
- Relevance of the proposed activity to the Genesis Mission
- Relevance of the proposed activity to the President's policy priorities
- Ensuring an appropriate balance of activities within SC programs
- Performance under current awards
- Commitment to complying with administration policies, procedures, and guidance related to Gold Standard Science
- Ensuring a distribution of supported researchers at various early career stages
- Training the next generation of researchers
- Ensuring opportunities to investigators not currently supported by DOE
- Commitment to sharing the results of research and the pilot program

VII. Selection and Award Notices

The NOFO Part 2, *Selection and Award Notices*, provides information on notifications for concept papers (if applicable), applications, award negotiations, and post-selection information requests.

VIII. Award Administration Information

A. Post-Award Requirements and Administration

DOE requires all award recipients to follow and accept requirements governed by laws and policies — both Federal and DOE. These post-award requirements include:

- National and administrative policy requirements
- National Assurance Policies
- Financial assistance general certifications and representations
- Build America, Buy America requirements
- Fraud, waste, and abuse requirements
- Safety, security, and regulatory requirements
- Environmental review with the National Environmental Policy Act requirements

Please review the Standard Award Terms and Conditions, the sample Federal Assistance Reporting Checklist, and standard Intellectual Property (IP) Provisions to better understand post-award requirements and administration.

Progress will also be assessed through the following metrics:

- **Academic Progression:** Milestone completion rates, retention, and average time-to-degree.
- **Research and Technical Output:** Publications, citations, and peer-reviewed conference contributions.
- **Technical Artifact Generation:** Development and release of open-source models, curated scientific datasets, and computing platform contributions.
- **Execution of Lab/User Facility and Industry Research Experiences:** Successful completion rates and performance evaluations of national laboratory and industry research experiences.
- **Post-Graduate Outcomes:** Employment placement tracking within national laboratories, industry, and academia.

Post-award requirements and administration that apply to awards funded under this NOFO are identified below. Detailed descriptions of standard requirements are provided in NOFO Part 2, *Post-Award Requirements and Administration*.

1. Government Rights in Data

You can find the U.S. Government rights to application information in the Use and Disclosure of Application Information section. The U.S. Government rights to data produced under an award or used in the performance of the award varies according to the following classifications.

Normally, the Government has unlimited rights in technical data created under a DOE agreement, including the right to distribute to the public. Delivery or third-party licensing of proprietary software or data developed solely at private expense (Limited Rights Data) will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE's own needs or to ensure the commercialization of technology developed under a DOE agreement.

If software is specified for delivery to DOE, or if other special circumstances exist (e.g., DOE specifying "open-source" treatment of software), then the DOE Contracting Officer, after negotiation with the recipient, may include special provisions in the award requiring the

recipient to obtain written approval of the DOE Contracting Officer prior to asserting copyright in the software, modifying the retained Government license, or otherwise altering the copyright provisions.

IX. Other Information

Please see NOFO Part 2, *Other Information*, for additional information, acronyms, and requirements that apply to all DOE NOFOs.