

DOE Office of Nuclear Physics Update

Sharon Stephenson
Office of Nuclear Physics

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U.S. DEPARTMENT
of **ENERGY**

Office of
Science

[Energy.gov/science](https://www.energy.gov/science)

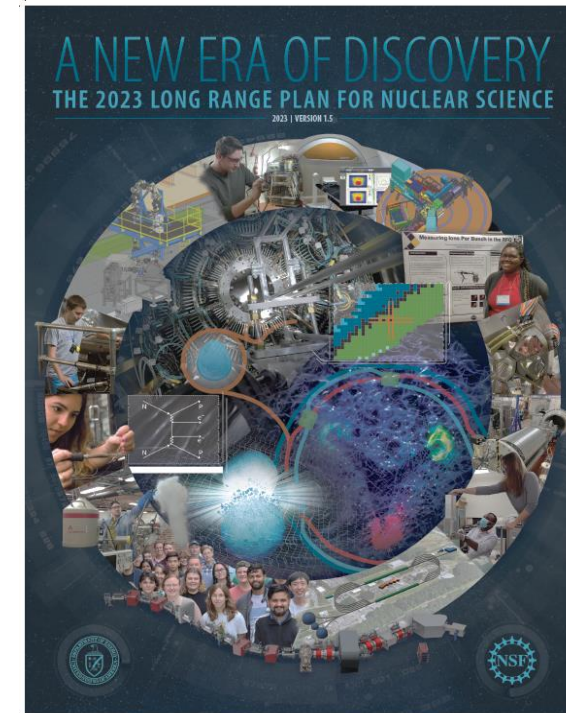
The NP Strategic Plan: A New Era of Discovery

Recommended the U.S. capitalize on current investments and future initiatives.

- ◆ **Extraordinary opportunities for scientific discovery** are possible by the substantial and sustained investments of the United States.
- ◆ **Innovative projects and emerging technologies**...enable tomorrow's discoveries and play a unique role in supporting national needs.

Reaffirmed the exceptionally high priority of the following two investments in new capabilities for nuclear physics – DOE is supporting both capabilities while continuing a strong research portfolio at universities and national laboratories.

- ◆ The **Electron–Ion Collider (EIC)** ...will elucidate the origin of visible matter in the universe and significantly advance accelerator technology... (next milestone CD-3B).
- ◆ **Neutrinoless double beta decay experiments** have the potential to dramatically change our understanding of the physical laws governing the universe (shown: LEGEND-1000, next milestone CD-1).



Nuclear Physics – Advancing Administrative Priorities

NP is poised to *ensure unrivaled American leadership in critical and emerging technology*, advancing AI and QIS. NP also provides unique capabilities for research, microelectronics testing, and isotopes.

- ◆ **The Genesis Mission** and realization of American Science Cloud (AmSC) will profoundly impact the analysis of large, complex nuclear physics data sets that have taken decades to decode, accelerating the understanding of matter that benefits energy, commerce, medicine, and national security.

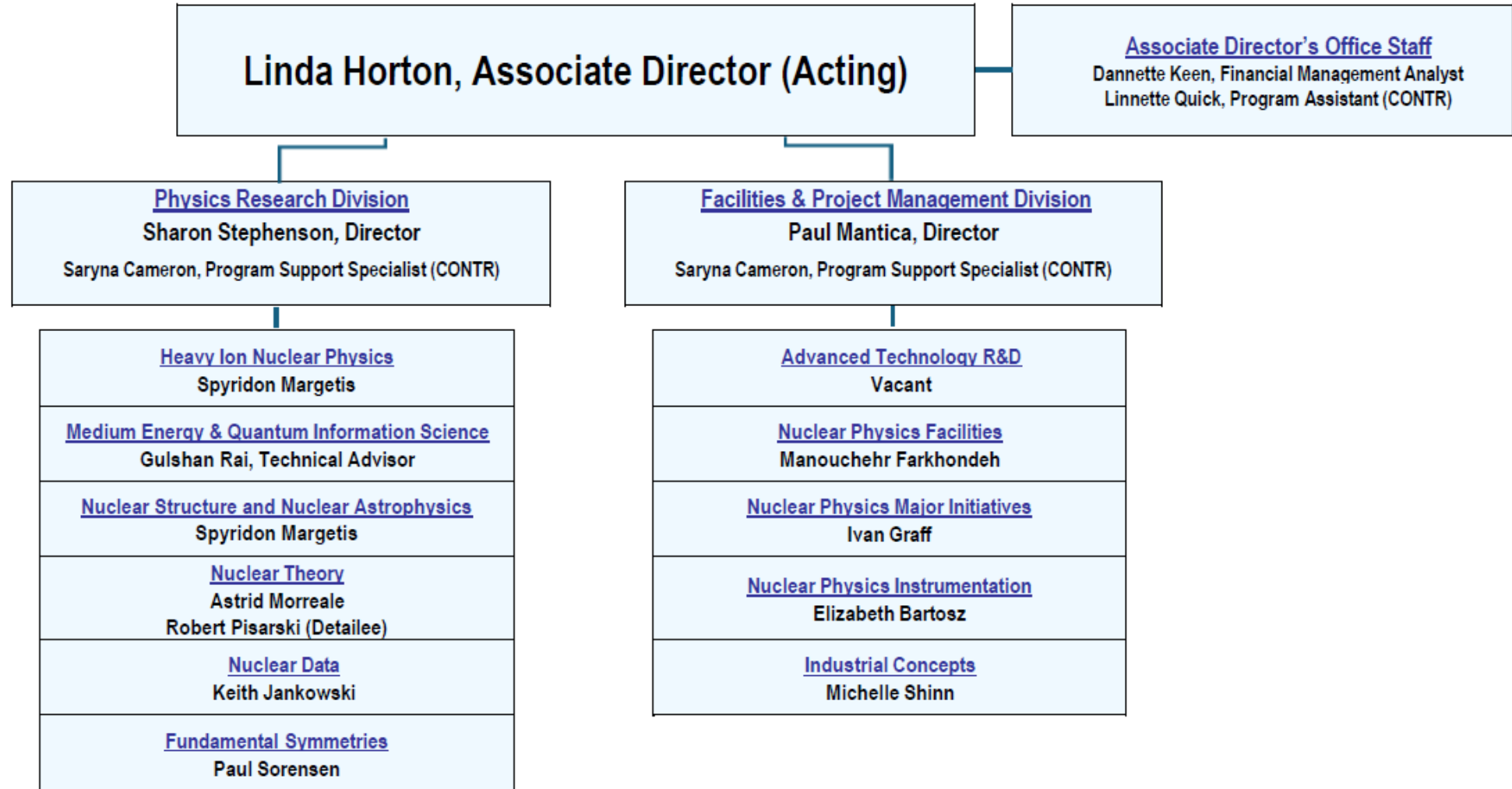
NP also supports activities aligned with **all five** OMB and OSTP high priority crosscuts.

- ◆ **Implement and Support Gold Standard Science** - promotes data management and sharing, stewarding the National Nuclear Data Center, a Public Reusable Research Data resource for nuclear physics data for basic research & applied nuclear technologies.
- ◆ **Build the S&T Workforce of the Future** - supports >1,400 Ph.D. staff and 700 graduate students, producing highly-qualified personnel to meet critical needs in government, industry, & academia.
- ◆ **Expand and Make Accessible World-Class Research Infrastructure** - supports world-class facilities and innovative scientific instruments, including construction of the EIC.
- ◆ **Revitalize and Strengthen America's S&T Ecosystem** - accelerates research output through AI and quantum computing, develops novel instrumentation based on QIS, and applies new microelectronics in unique experimental environments.
- ◆ **Focus on High-Value Research Efforts** - operates world-unique, accelerator-based user facilities that host >4,200 unique scientific users from around the world.

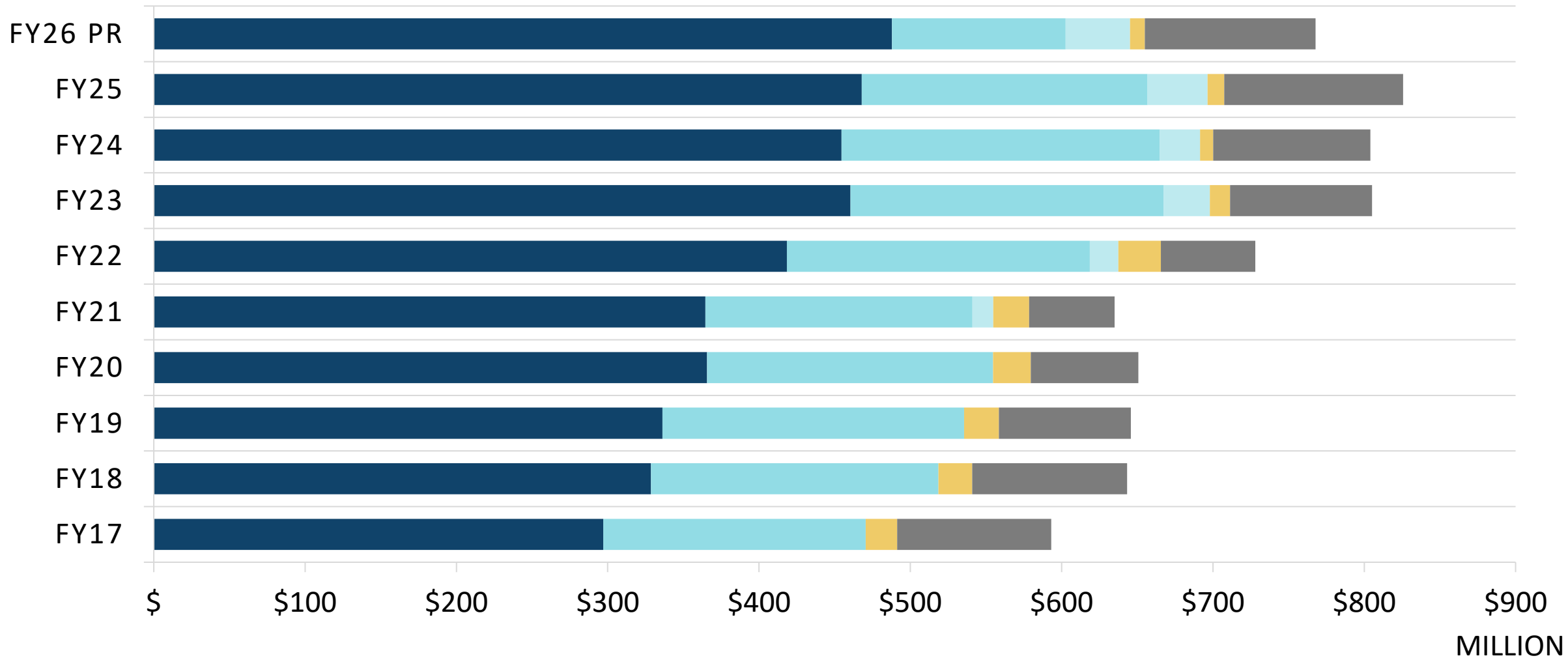




Note: The recently announced DOE reorganization formed new offices under the Under Secretary for Science that focus on strategic planning, fusion energy, and artificial intelligence and quantum. These offices primarily serve coordination and development functions. The Office of Science core scientific disciplines are not impacted.



■ Operations and User Support
 ■ Core Research
 ■ Initiatives
 ■ SBIR/Other
 ■ Projects and Construction



Since FY 2023, NP appropriations have been at the level of ~ \$800M.



FY 2026 Open Call Solicitation

The FY 2026 SC Open Solicitation was posted 9/30/2025. SC anticipates fewer targeted notices of funding opportunities (NOFOs); past NP targeted NOFOs in Accelerator R&D, AI for NP, QIS, and **nuclear data** are now part of the Open Call.

[NP Funding Opportunities | U.S. DOE Office of Science \(SC\)](#)

While new applications are accepted continuously, note that proposal submission dates for FY 2026 support for some subprograms have passed:

- ◆ **November 14, 2025:** Heavy Ions; Nuclear Structure & Nuclear Astrophysics; Fundamental Symmetries; Nuclear Theory; Accelerator R&D for NP Facilities; Artificial Intelligence & Machine Learning; Generic Detector R&D
- ◆ **November 28, 2025:** Quantum Information Science for NP Research
- ◆ **Rolling:** Medium Energy, **Nuclear Data**, Nuclear Physics Computing

All new solicitations and invitations for research funding must include Data Management and Sharing Plan (DMSP) requirements (<https://www.energy.gov/doe-public-access-plan>):

[DOE DMSP Guidance Webpage](#)

[Office of Science Guidance Webpage](#)



Publicize publications to NP



Computer Physics Communications

Volume 321, April 2026, 110018



Computer Programs in Physics

A new database website for nuclear level densities



Re-evaluating the prompt fission neutron spectrum of spontaneously fissioning ^{252}Cf

Physica Scripta



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PAPER • **OPEN ACCESS**

Structure of beta-decaying states in the deformed, neutron-rich nucleus ^{104}Nb



Artificial Intelligence in Nuclear Physics Supports the Genesis Mission



Artificial Intelligence in Nuclear Physics Supports the Genesis Mission

- ◆ As a response to Administration and Congressional priorities, working in coordination with the Office of Advanced Scientific Computing Research (ASCR), NP is advancing its mission through the development of artificial intelligence (AI) ready datasets and AI models that can take advantage of them. Two key science questions posed by the Long Range Plan for Nuclear Science are targeted:
 - How do the rich patterns observed in the structure and reactions of nuclei emerge from the interactions of neutrons and protons?
 - How do quarks and gluons make up protons, neutrons, and ultimately, atomic nuclei?
- ◆ These questions will require current and future accelerator-based facilities to achieve unprecedented energies and intensities driven by AI.
- ◆ The development of domain-specific data standards and meta-data for multi-modal data and expert knowledge documentation will feed the American Science (AmSc) cloud, using the power of AI to accelerate progress on addressing these fundamental questions on the nature of nuclear matter.

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Artificial Intelligence in Nuclear Physics Supports the Genesis Mission

- How do the rich patterns observed in the structure and reactions of nuclei emerge from the interactions of neutrons and protons?

“Answering this question requires data collected and disseminated from a diverse suite of scientific instrumentation at NP-supported national user facilities and cross-cutting activities in nuclear chemistry, theoretical physics, engineering, data science, and computer science. Efforts in this domain should reset current limits on automated data collection and data management. Successful scope will make the data and metadata from complex nuclear physics experiments AI-ready for pre-training and fine-tuning of AI models. **The resulting outcomes, in addition to accelerating our understanding of nuclear structure and nuclear astrophysics, will also provide curated data broadly available to the SC community through NP’s PuRe nuclear data resource.**”



DOE Office of Science Graduate Student Research Program

Funded through DOE SC's Workforce Development for Teachers and Scientists (WDTS) program. Other programs complement the SCGSR for workforce development.

[All areas of NP](#) are supported by this program.

[DOE Office of Science Graduate S... | U.S. DOE Office of Science \(SC\)](#)

Science Undergraduate
Laboratory Internships (SULI)

Community College Internships
(CCI)

Visiting Faculty Program (VFP)

Office of Science Graduate
Student Research (SCGSR)



Summary – The DOE Nuclear Physics Program:

- Delivers world-leading science and discoveries and contributes to impactful applications aligned with the Long Range Plan for Nuclear Science.
- Supports innovative, priority research in nuclear science, including AI through the Genesis Mission, quantum information science, and microelectronics.
- Operates unique, world-class user facilities to support the community's research and DOE's nuclear physics mission.
 - Serves ~4,300 users per year and delivers impactful research.
- Utilizes community strategic planning to frame the prioritization of new NP capabilities.
 - The EIC Project is making steady progress towards CD-3B (Long-Lead Procurement) and the next DOE gateway CD-2 (Approve Performance Baseline).
 - NP has established a priority for new experiment construction, focusing on LEGEND-1000 to search for neutrinoless double beta decay.





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