Quantum Information Sciences

Landscape of Federal Research and Policy Priorities

October 14, 2025

LEWIS–BURKE ASSOCIATES LLC

Emerging Technology Series: Quantum

This document highlights federal priorities, funding investments, and engagement opportunities relevant to research, education, and workforce organizations working to advance quantum information sciences and technologies.

'Quantum Information Sciences' (QIS) can be defined as "the use of the laws of quantum physics for the storage, transmission, manipulation, computing, or measurement of information."

Key Highlights

- The Trump Administration identified Quantum Information Sciences (QIS) as the second highest critical and emerging technology priority after Artificial Intelligence.
- Congress is working on a 5-year reauthorization of the National Quantum Initiative, which would expand existing QIS programs and create new ones.
- Federal agencies are seeking big bets for the next stage of the quantum initiative in the FY 2027 budget request.

OVERVIEW OF FEDERAL PRIORITIES

The Trump Administration's commitment to QIS involves:

- directing federal agencies to support fundamental research in QIS and quantum applications,
- advocating for the pursuit of advanced manufacturing capabilities and development of consortia or other teaming models that would sustain the technology transition and commercialization of quantum research,
- supporting consortia and testbeds as a form of engagement between academia and industry experts to tackle infrastructure and engineering concerns,
- expanding quantum to new agencies and application areas such as use in national security and biomedical research, and
- preparing to update cross-cutting federal strategic priorities in QIS, including a revised and update National Strategic Overview for QIS last issues in 2018.

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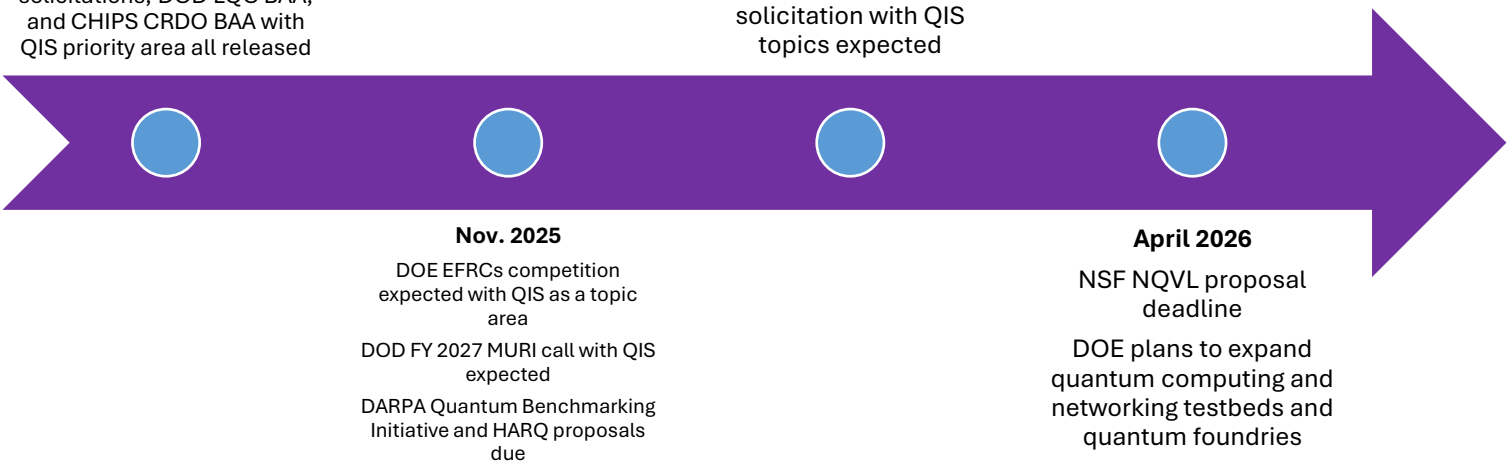
Overall, the federal government continues to invest about $1 billion in QIS. The majority of research and development funding comes from three agencies—the National Science Foundation, the Department of Energy, and the Department of Defense—with additional investments from the National Institutes of Standards and Technology and the National Aeronautics and Space Administration. Other federal agencies leverage these investments for targeted applications to meet their mission needs.

In FY 2026, the Trump Administration kept funding for QIS relatively flat, with a few targeted increases, such as Department of Energy testbeds and quantum foundries. However, flat funding showed relative prioritization since most other science and technology programs across federal agencies were significantly cut. Looking to FY 2027, in September 2025, the White House Office of Science and Technology Policy and Office of Management and Budget (OMB) released their FY 2027 research and development priorities memo to federal agencies. QIS is the second highest emerging technology priority after Artificial Intelligence. In particular, the memo highlights increased investments in fundamental science, pre-competitive R&D to support technology transition efforts to the private sector, critical infrastructure and testbeds, and advanced manufacturing for quantum devices and supply chains. Within fundamental research, federal agencies should prioritize "basic and applied materials research and mathematical and physical sciences" to advance QIS science and technology. Federal agencies are working with OMB through the end of the year to identify FY 2027 funding priorities ahead of the FY 2026 budget request release anticipated in March 2026.

Fiscal Year 2026 Budget Request and Future Agency Opportunities

The fiscal year (FY) 2026 budget request largely continues ongoing quantum efforts. The Administration has signaled interest in expanding QIS efforts and is preparing new initiatives and efforts for the FY 2027 budget request, expected to be released in early 2026. The graphic below highlights a few current and upcoming opportunities in the next six months followed by a more detailed table on planned QIS activities among key federal agencies.

Highlights of Federal QIS Opportunities



Agency	FY 2026 Budget Request Capabilities
Department of Commerce (National Institutes of Standards and Technology)	The National Institutes for Standards and Technology (NIST) FY 2026 budget request did not announce major quantum initiatives but maintains support for existing QIS research.
National Science Foundation	The budget request would keep NSF investments in QIS flat at $231 million while deeply cutting other activities. AI is the only other area treated similarly while overall NSF would be cut by more than 55 percent from the FY 2025 enacted level. No specifics are included on any new efforts, but NSF would continue to implement the National Quantum Virtual Laboratory, which began as a pilot effort in FY 2023; invest in a new round of Quantum Leap Challenge Institutes, currently under competition; and continue "foundational investments in individual investigator programs and disciplinary-specific centers."
Department of Energy	DOE's funding for QIS has increased as DOE makes priority investments in critical technology areas such as quantum, geothermal, and nuclear energy. In FY 2026, DOE requested $328 million to support QIS programs at the Office of Science, an increase of $50 million beyond the FY 2025 request. With this investment DOE plans to: • continue funding the National QIS Research centers recompeted in FY 2025,

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	• support operations of scientific user facilities advancing QIS, • sustain investments in QIS workforce development through the Early Career Research and the Computational Science Graduate Fellowship programs, • invest in basic QIS research in key DOE areas including computing, simulation, materials sciences, sensing and networking, and • release a $100 million solicitation to compete Energy Frontier Research Centers (EFRCs) of which QIS is expected to be included as a priority topic area. **NOTE:** Up to $50 million in funding solicitations currently open for fundamental QIS in computing, sensing, materials, chemistry, geosciences, biosciences, nuclear physics, and particle physics with pre-applications due as early as November 14. See DOE section for more information.
Department of Defense (or War)	The budget request documents for FY 2026 did not announce any new quantum initiatives at DOD; however, defense-wide funding for quantum transition acceleration saw an increase in funding. In 2026 the portfolio for quantum technologies at DARPA was re-organized to provide clarity on initiatives to fund prototyping and hardware procurement for validation of a utility scale computer. Across the services, investments in applied research (6.2) increased or remained flat in quantum communications, remote sensing, positioning, navigation, and timing (PNT) and post-quantum cryptography (PQC), in line with the administration's goals of moving from fundamental research to technology development.

119th Congress Quantum Information Science Priorities

The National Quantum Initiative (NQI) Act, originally passed in 2017, lapsed in September 2023. Both the House and Senate introduced versions of the reauthorization in the 118th Congress, but the legislation was never passed into law. Congress has still not introduced drafts of a comprehensive QIS reauthorization bill in the 119th Congress, but Lewis-Burke expects that new versions will largely be based on the 2023 drafts. The table below captures the main differences between agency priorities in the most recent drafts of the House and Senate versions of the legislation and provide insight into potential final legislative priorities.

Provisions of Interest	House (H.R. 6213)	Senate (S. 5411 and S. 579)
National Quantum Coordination Office	The bill would clarify the functions and responsibilities of the NQCO.	Closely reflects the House version while broadening the office's responsibilities to include international development and engagement.
National Institutes of Standards and Technology	Reauthorizes NIST activities and the Quantum Consortium, authorizing annual funds to carry out efforts to advance post-quantum cryptography and industry engagement.	Similarly codifies and updates NIST QIS activities while supporting a broader authorization of funds to boost activities.

	The bill would allow NIST to establish Quantum Centers to operate for up to five years with renewable funding for up to $18 million	Would similarly establish NIST Quantum Centers with emphasis on coordination with existing programs.
National Aeronautics and Science Administration	Authorizes NASA research and development in QIS for space and aeronautics and the establishment of a NASA Quantum Institute.	Authorizes NASA Quantum Initiatives along a broader scope of priority areas.
National Institutes of Health	Included no standalone NIH Program Title.	Authorizes NIH Quantum Activities in a range of biomedical and health applications.
National Science Foundation	The bill would expand the role that NSF plays in fundamental QIS research, increase the number of Multidisciplinary Centers for Quantum Research and Education from 5 to 10, and establishes the Quantum Reskilling, Education, and Workforce (QREW) Coordination Hub.	Broadens NSF's role in quantum science to include translational research and interagency coordination, and like the House expands the number of NSF Multidisciplinary Centers and Creates the QREW Hubs.
Department of Energy	Reauthorizes DOE National QIS Research Centers with an expansion in scope to include engineering and workforce expansion. Creates a DOE Quantum Instrumentation and Foundry Program. Would add a Grid Resilience and Security program to pursue applications of quantum technology used for grid fault detection and post-quantum cryptography.	The Senate reintroduced the Department of Energy Quantum Leadership Act of 2025 (S. 579) and would be part of a broader reauthorization. The bill would reauthorize the DOE QIS Research Centers and establishes instrumentation programming, while explicitly directing DOE to leverage National Laboratories. Does not specifically add language on Grid Resilience and Security but does address critical infrastructure and national security across research security provisions.
Department of State	Requires the development of an International Quantum Cooperation Strategy to address interagency collaboration and national security risks.	Like the House, it would create an International Quantum Cooperation Program to coordinate with key federal quantum offices.

DOE Quantum Leadership Act of 2025

To further support quantum research at the Department of Energy (DOE), in February 2025 Senators Durbin (D-IL) and Daines (R-MT) re-introduced the bipartisan *Department of Energy Quantum Leadership Act* (S.579). While the bill shares many similarities with the House's version of the NQI Reauthorization Act, such as a requirement for DOE's National QIS Research Centers to coordinate with the proposed NSF QREW Hub, it does differ from the House legislation, such as:

- Authorizing $120 million over five years for a new early-stage quantum high performance computing research and development program (no similar provision in the House bill);
- Authorizing $25 million over five years for a quantum traineeship program (no similar provision in the House bill);
- Requiring DOE to prepare a quantum science and technology supply chain study; and
- Authorizing $250 million, double the proposed House funding, for a new quantum instrumentation and quantum foundry program.

FY 2026 National Defense Authorization Act

While the House and Senate Armed Services Committees (HASC and SASC) have not finalized the FY 2026 National Defense Authorization Act (NDAA), both versions of the legislation include strong support for the continuance of quantum initiatives across services and at the Defense Advanced Research Projects Agency (DARPA). The committees recommend funding to support quantum algorithm development, and for intra-agency partnerships to apply quantum sensing for changes in environment relevant to DOD installations and infrastructure. More information can be found in the DOD analysis below.

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DEPARTMENT OF DEFENSE

Disclaimer: On September 5, President Trump issued an Executive Order titled *Restoring the U.S. Department of War,* which authorizes the Department of Defense to use "Department of War" (DOW) as a secondary title. In compliance with the EO, the Department has already updated its website to reflect DOW nomenclature, as well as official titles such as the "Secretary of War" and the "Undersecretary of War for Research and Engineering" (USW(R&E)). However, changing the name of the agency permanently would require legislation from Congress. Currently, Congress still defines the Department as the "Department of Defense," resulting in the continued use of DOD rather than DOW in statutory actions or legal documents.

DOD has demonstrated sustained interest in QIS topics including quantum computing, cryptography, materials, and sensing. Its research strategy for advancing foundational quantum research is to provide the Services' basic research offices with necessary resources, augment existing academic awards such as the Multidisciplinary University Research Initiative and Vannevar Bush Faculty Fellowship, and support defense-wide efforts such as the Defense Advanced Research Projects Agency (DARPA). DOD has also begun to transition from basic to applied QIS research, incentivizing development in advanced photonics systems, quantum materials, various quantum computing architectures, quantum sensing and metrology, and other applications for position, navigation and timing.

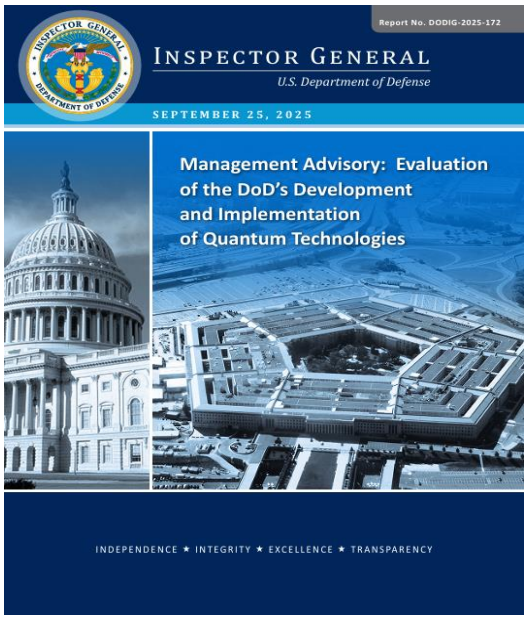
The agency is in transition following the recent departure of John Burke who served as the Principal Director of Quantum Science for the Office of the Under Secretary of Defense for Research and Engineering for Science and Technology (OUSD (R&E)). It is unclear when or if his position will be filled as Emil Michael, the current Under Secretary of Defense for Research and Engineering, is still considering DOD's priority list of critical technology areas. The list of critical technology areas included quantum among other key technology areas such as AI and biotech under the leadership of Under Secretary Heidi Shyu.

While the committees have yet to commence a conference period for the FY 2026 NDAA, both the House and Senate version of the language would authorize $59.9 million in funding for the DARPA Quantum Benchmarking Initiative (QBI) (more below). As referenced above, the Senate Armed Services Committee (SASC) explicitly noted their support for DARPA QBI and highlighted the agency's progress in developing industry partnerships to design algorithms for computing applications. The also called on DARPA Director Stephen Winchell to ensure the initiative comprehensively evaluates different computing modes and accounts for budget constraints that could limit progress toward utility-scale quantum systems.

Congress has also highlighted quantum's potential in cross-cutting areas. Draft versions of the FY 2026 NDAA would direct the Assistant Secretary of Defense for Energy, Installations, and Environment to work with the Strategic Environmental Research and Development

Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) on assessing how quantum sensing could detect, monitor, and mitigate PFAS contamination at DOD sites. Additionally, Senators have filed 11 amendments after the August recess, covering issues from quantum computer preparedness to the establishment of a quantum communication infrastructure.

DOD is working to be fully responsive to congressional direction on quantum research and innovation. On September 25, 2025, the DOD's Office of Inspector General released the report "Evaluation of the DoD's Development and Implementation of Quantum Technologies." The report indicated that the DOD Quantum Information Science Program mandated under the 2019 NDAA had not been fully formalized by OUSD(R&E). It required that a memorandum be distributed to stakeholders and agency points of contact to clarify roles and responsibilities outlined in the NDAA and to develop a coordinated plan to implement the program effectively. Such actions are expected to open up new opportunities for funding and engagement.



Laboratory for Physical Sciences Qubit Collaboratory (LQC)

A collaboration between the Laboratory for Physical Sciences at the University of Maryland and the Army Research Office, the Laboratory for Physical Sciences (LPS) is the Army and NSA's QIS Research Center. LPS hosts the Qubit Collaboratory, a national Quantum Information Science Research Center for pursuing disruptive qubit research, workforce development, and collaborative partnerships.

On September 25, 2025, LQC released a Broad Agency Announcement (BAA) open through April 2026 seeking to enable novel and disruptive research into QIS with a strong focus on qubit development and quantum computing. The BAA allows the LQC to engage in partnerships and workforce training opportunities to expand the center's capabilities, and provides three categories of proposals for engagement:

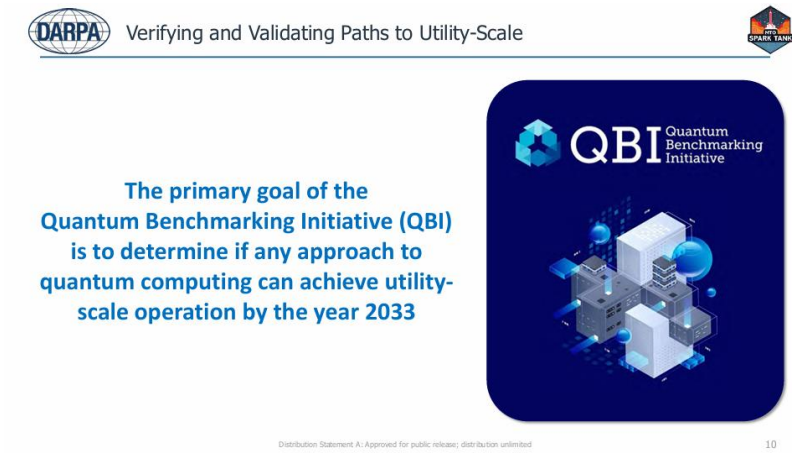
- Incubators for single investigators or small groups with promising research;
- Collaboratory for larger collaborations that bring together multi-institutional teams to focus on fundamental science; and
- Research fellowships which allow graduate students and postdoctoral researchers to embed within the LQC.

The LQC is interested in topics ranging from greater fabrication and accessibility of spin qubits, quantum circuits and control mechanisms to education and workforce training programs. More information can be found in the full BAA.

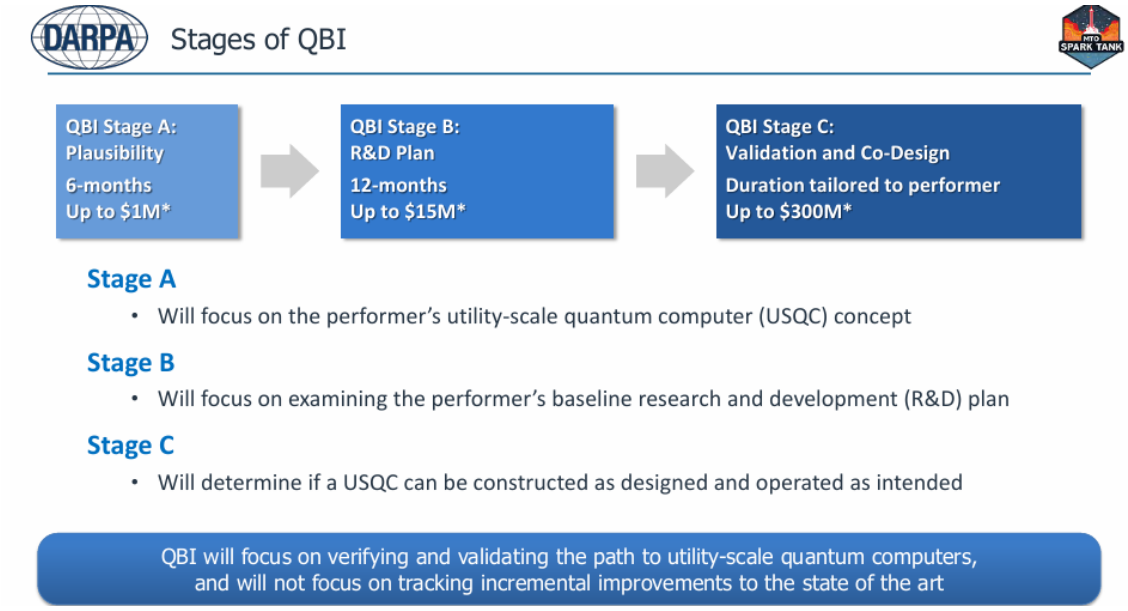
Air Force Research Laboratory (AFRL) and Office of Naval Research (ONR)
The AFRL Information (RI) Directorate's Quantum Information Science Branch focuses on research and development in QIS to support Air Force and Space Force missions. Additionally, AFRL has made recent contract awards to industry (such as Qunnect and Rigetti) to advance new quantum technologies, some awards in partnership with research institutions and universities.

ONR is the military's largest funder of QIS. ONR recently updated their FY 2025 Long Range Broad Agency Announcement (BAA) for Navy and Marine Corps Science and Technology, and is accepting full proposals for basic and applied research in QIS until September 30, 2026. Information on the research concentration areas and submission details can be found here. In addition to ONR, the Navy has designated the Naval Research Laboratory as its QIS Research Center. NRL directs largely intramural research efforts for the Department of the Navy.

Defense Advanced Research Projects Agency (DARPA)
The most recognizable quantum initiative at DARPA, the Quantum Benchmarking Initiative (QBI). QBI expands on efforts made by two DARPA Programs, **Quantum Benchmarking**, which worked to identify the industry uses of a quantum computer, and **Underexplored Systems for Utility Scale Quantum Computing**, which supports efforts to construct a quantum computer in the near future.



In April 2025, 18 quantum computing companies were selected for the first stage of the QBI. On October 2, 2025, DARPA's Microsystems Technology Office (MTO) released a future program announcement outlining DARPA's intent to launch a second round of the QBI solicitation for new, measurable approaches to key quantum capabilities. To support this effort, DARPA plans to seek additional testing and evaluation (T&E) teams with expertise in systems engineering and quantum computing. The initiative is a three-stage process, including technical validation, research plan review, and independent hardware testing by a government team (see graphic below).



Source: Defense Advanced Research Projects Agency

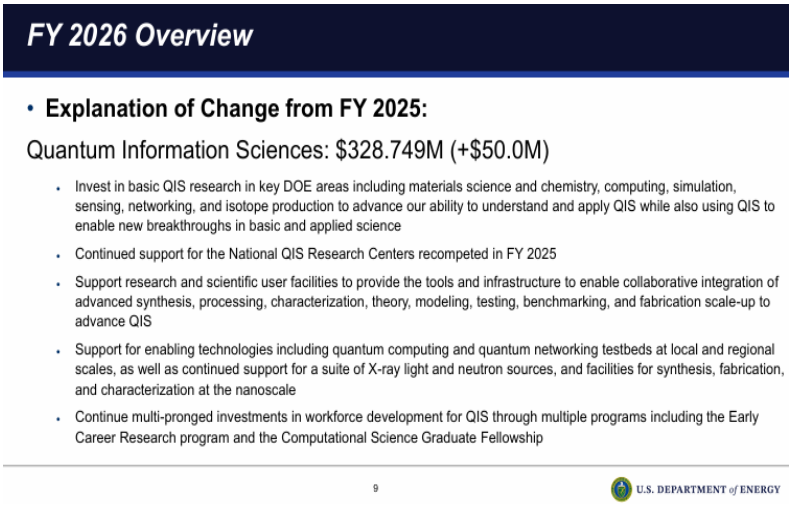
Currently, DARPA supports two quantum programs including:

- **Quantum Benchmarking Initiative:** This post serves as a Future Program Announcement for the Quantum Benchmarking Initiative. Deadline: **November 30, 2025.**
- **Heterogeneous Architectures for Quantum (HARQ):** seeks to transform how quantum computing systems are designed and scaled by moving one qubit to multiple qubit types. Deadline: **November 3, 2025.**
- An archive of DARPA quantum programs can be found here.

Multidisciplinary University Research Initiatives (MURI) Program

DOD's MURI program has increasingly prioritized quantum topics in the FY 2024 and 2025 solicitations. The FY 2026 solicitation included topics such as "Piezoelectric Materials Interfaced with Semiconductors for Integrated Quantum Systems" and "Engineered Quantum Materials Approaches to Room-Temperature Single Photon Detection in Infrared Range." This inclusion along with an increased administrative focus on QIS supports Lewis-Burke's expectation of quantum's inclusion in MURI topics in the FY 2027 solicitation, likely to be released in Fall 2026.

DEPARTMENT OF ENERGY



DOE funds Quantum Information Science (QIS) research and development programs across all Office of Science programs, supporting a combination of fundamental research activities, quantum workforce initiatives, and quantum computing testbeds. The fiscal year (FY) 2026 budget request proposes $329 million for DOE QIS activities, a $50 million boost in funding. The increased funding, if appropriated by Congress, would expand quantum computing and quantum networking testbeds, quantum foundries, and access to scientific user facilities. Funding would also continue support for:

- five large, multi-disciplinary, DOE national lab-led National Quantum Information Science Research Centers (NQISRCs);
- competition of the Energy Frontier Research Centers which currently include seven centers dedicated to researching QIS/Quantum Materials; and
- testbeds and research capabilities at Office of Science user facilities primarily funded by the Advanced Scientific Computing Research Program (ASCR).

FY 2026 Continuation of Solicitation for the Office of Science Financial Assistance Program (Open Call)

On September 30, 2025, DOE released their annual Open Call solicitation, which included several QIS funding solicitations across Office of Science programs. This will be the primary source of funding for research universities and other non-DOE National Lab research organizations in fundamental QIS research in FY 2026, especially for single Principal Investigators and small research groups. Key dates for QIS program areas and pre-application due dates can be found in the graphic below. Lewis-Burke strongly encourages researchers to take advantage of this opportunity and for calls without specific due dates, to apply as soon as possible since funding is contingent on availability of funds.

Advanced Scientific Computing Research

Due November 14: Quantum Computing, Error Detection and Correction

Basic Energy Sciences

Due November 30: QIS in Material Science Research

No Date: QIS Research in Chemical Sciences, Geosciences, and Biosciences

High Energy Physics

Due November 15: Quantum Outposts on the Energy and Intensity Frontiers

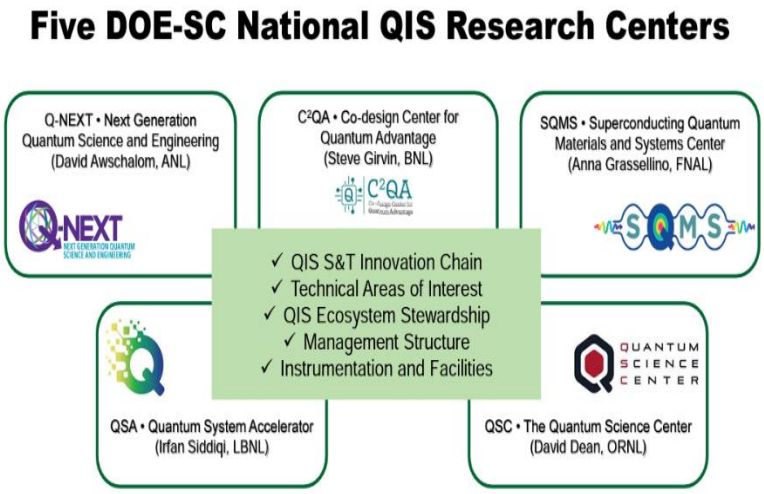
Due July 2026: Basic QIS Research

NEW: QIS enabled discovery (QuantISED)

Nuclear Physics

Due November 28: QIS for Nuclear Physics Research

National Quantum Information Science Research Centers



In January 2025, DOE released a solicitation for national labs to re-compete the **National Quantum Information Science Research Centers** originally awarded in August 2020 (see graphic). Operating at $25 million per year for five years, these multi-institutional, multi-disciplinary centers are funded by all of the Office of Science program offices.

Each center is led by a DOE national lab and incorporates wide-spread research university and industry partnerships. The labs assemble a team of experts across specialties to explore use-inspired basic research, engage in early-stage technology development, and advance early-stage engineering design and prototype development. In the FY 2025 re-compete, each center is expected to simultaneously address aspects of the innovation chain and subtopics from at least two technical areas of interest which include:

- Quantum Communication;
- Quantum Computing and Simulation;
- Quantum Devices and Sensors;
- Materials and Chemistry for QIS Systems and Applications; and
- Quantum Foundries.

The ultimate goal of each center is the production of a "prototype novel-technology platform, capability, or major scientific breakthrough," that can ultimately serve the entire QIS R&D community.

DOE is expected to announce the results of the recompletion in October/November. If Congress can pass a QIS reauthorization bill, the legislation would grow funding for the DOE centers from $25 million to $30 million per year to boost research, technology development, industry partnership and workforce development programs.

Energy Frontier Research Centers

DOE also currently funds seven QIS Energy Frontier Research Centers (EFRCs). Started in 2009, the EFRC program focuses on energy-relevant, basic research with a scope and complexity beyond what is possible in standard single-investigator or small-group awards. EFRC's are typically funded from $2 million to $4 million per year over four years, and the current quantum centers are primarily focused on quantum materials and computing capabilities that intersect with the energy grand challenges that serve as top priorities for the Basic Energy Sciences (BES) Program. The upcoming 2025 EFRC competition, expected in fall 2025-winter 2026, is expected to continue including QIS as a priority topic area.

Nanoscale Science Research Centers Recapitalization

DOE launched a $80 million project to upgrade instrumentation at the five Nanoscale Science Research Centers to continue to perform cutting edge science to support and accelerate advances in the fields of nanoscience, materials, chemistry, and biology. A major focus is to provide new state-of-the-art instrumentation and foundries for quantum information science and systems. The recapitalization started in March 2022 and is expected to finish in 2027.

STEM Education and Workforce

DOE does not have a dedicated STEM education or workforce development program for QIS. However, it funds QIS students and early-career researchers through existing education and workforce development programs such as the Office of Science Graduate Student Research Program, the Computational Science Graduate Fellowship Program, Early Career Research Program, and DOE National Lab-sponsored QIS summer school.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

In 2024, the National Center for Advancing Translational Science (NCATS) at NIH announced the Quantum Biomedical Innovations Technologies (Qu-Bit) program. The purpose of the program is to "further the application of innovative novel quantum-enabled sensing technologies and quantum computing approaches for various biomedical and translational use cases." Currently, NCATS is accepting applications for stage 2 of its Quantum Sensing Technology and Quantum Computing Technology Challenges, which solicit proposals that aim to "solve translational biomedical problems with quantum-enabled technologies." The challenges are focused on technology demonstration and hardware, analytics, visualizations, and algorithms. Winners of stage 1 for the Quantum Sensing and Quantum Computing Technology Challenges were announced, with awardees given a small amount of funding and an invitation to participate in stage 2 of the challenge.

Additionally, there is an active working group made up of representatives from across NIH that "explores opportunities for applying emerging quantum sensing and computing technologies to various biomedical fields." The group is chaired by Dr. Susan Gregurick, the Associate Director for Data Science and Director of the Office of Data Science Strategy at NIH, and Joni Rutter, the NCATS Director. It is coordinated by Dr. Geetha Senthil, the Deputy Director of the NCATS Office of Special Initiatives. NCATS also established and leads a QIS and Quantum Sensing in Biology Interest Group, which is comprised of "NIH and non-NIH scientists with shared interests and/or expertise in quantum sciences and technology applications in biomedical sciences." The group "hosts monthly seminars to help researchers share the latest quantum-related science and technology developments and applications. It also organizes workshops by national and international quantum experts to promote knowledge of quantum technology applications."

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The National Aeronautics and Space Administration (NASA) is interested in the potential that quantum technologies, such as quantum computing, mechanics, and sensing, have for facilitating more complex missions across the solar system and expanding Earth science and aeronautics. Potential applications include advancing the accuracy and precision of measurements and enhancing imaging capabilities, among others.

Space Technology Mission Directorate (STMD)
STMD leads the development, demonstration, and infusion of transformational technologies that enhance NASA's efforts to explore the unknown in space, benefit life on Earth, and solve critical stakeholder needs. In 2024, STMD published a document overviewing 187 shortfalls – technology areas requiring further development to meet future exploration, science, and other mission needs – and asked the aerospace community to rate their importance.

The results included prioritizing research into quantum sensors that use atoms, ions, spins, and photons. STMD funds research through the Space Technology Research Grant program, which is expected to release new opportunities in Fall 2025.

Quantum Artificial Intelligence Laboratory
NASA established the Quantum Artificial Intelligence Laboratory (QuAIL) in 2012 at NASA Ames to consider how advancements in quantum computing might influence the safety, success, and efficiency of future, more complex missions. The QuAIL team combines expertise in physics, computer science, mathematics, chemistry, and engineering to provide solutions that impact NASA's aeronautics, Earth and space sciences, and space exploration missions. QuAIL works closely with other agencies and programs, such as DARPA's Quantum Benchmarking and Quantum-Inspired Classical Computing programs and two DOE National Quantum Information Science Research Centers.

Additional Quantum Labs
Several NASA labs maintain teams and facilities dedicated to technology maturation and the research and development of quantum computing, including:

- The Jet Propulsion Laboratory's Cold Atom Lab forms, creates, and studies ultra-cold quantum gases in microgravity through the International Space Station. The Cold Atom Lab is the first multi-user facility for quantum gas research in space.
- Goddard's Quantum Engineering and Sensing Technology (QuEST) Lab which engages in research and development for atom-based quantum sensing.
- The Glenn Research Center's Quantum Information Science (QIS) team which considers communication and remote sensing applications for quantum technologies.

Quantum Technology for Earth Science
NASA's Earth Science Technology Office (ESTO) has made several investments in quantum sensing and computing development. Although NASA labs lead these projects, universities and private industry often serve as partners.

Funding and Engagement Opportunities
NASA has released several opportunities in the past pertaining to quantum computing, including:

- A solicitation released by ESTO for solutions to complex Earth Science problems, such as flood analysis, that use unconventional computing technologies. Awards totaled $300,000, and solicitations closed on July 25, 2025.
- The Science Mission Directorate (SMD) sponsored a Quantum Technology Day on July 9, 2025, to highlight SMD's work in the quantum space.

NATIONAL INSTITUE OF STANDARDS AND TECHNOLOGY

NIST is interested the "potential for quantum-based technology to transform security, computing and communications, and to develop the measurement and standards infrastructure necessary to exploit this potential." NIST is also interested in continuing to support quantum-based technology to increase the commercialization use of quantum and use associated with supply chains. This includes engaging in strategic collaborations with U.S. quantum industries and conducting research and development to increase U.S quantum leadership globally. Ongoing NIST projects and programs in these quantum areas can be found here.

Quantum Economic Development Consortium (QED-C)
The Quantum Economic Development Consortium (QED-C) was established by NIST as part of a federal strategy for advancing quantum information science, which was called for in the NQI Act. QED-C is managed by SRI International and has support across federal agencies to address quantum technology and workforce gaps. Members of QEDC (more information here) participate in meetings, workshops, and other quantum technology needs and roadmaps.

Post-Quantum Cryptography (PQC)
NIST's National Cybersecurity Center is home to post-quantum cryptography standardization research efforts. In 2022, NIST concluded a six-year effort to select encryption algorithms to become part of NIST's post-quantum cryptographic standard. In March 2025 PQC released its Fourth Round of the NIST Post-Quantum Cryptography Standardization Process. More information can be found here.

NIST on a CHIP (NOAC)
The NIST on a CHIP (NOAC) technology is a program that brings expertise from NIST labs to users in "commerce, medicine, defense, and academia." The goal of this program is to deploy NOAC technology anywhere and anytime without NIST's traditional measurement services, including developing quantum-based standards and sensors. Additionally, Quantum Optics and Radiometry is one of the nine NIST laboratories technology areas. More information can be found here.

University Partnerships
NIST partners with multiple universities to advance quantum research and workforce efforts:

- Joint Institute for Laboratory Astrophysics (JILA): In partnership with the University of Colorado Boulder, JILA aims to explore the "limits of quantum measurements and technologies, the design of precision optical and X-ray lasers, the fundamental principles underlying the interaction of light and matter, the role of quantum physics in chemistry and biology."

- Joint Quantum Institute (JQI) and Joint Center for Quantum Information and Computer Science (QuICS): In partnership with the University of Maryland (UMD), these institutes aim to explore the "foundation for engineering and controlling complex quantum systems capable of using the coherence and entanglement of quantum mechanics" and "quantum computer science and quantum information theory," respectively.

NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is a leading agency within the National Quantum Initiative. NSF views its role as supporting foundational research efforts, interdisciplinary collaborations, workforce development and education, and research infrastructure. Signature efforts were begun and continue from the first Trump Administration, and recently NSF is also investing in new infrastructure concepts and doing major visioning work around a potential future education and workforce hub as would be authorized in House and Senate draft quantum initiative reauthorization as well as directorate-specific quantum activities. These visioning exercises and convenings give insight into future programs and opportunities. For example, the Engineering Research Visioning Alliance held a 2024 workshop on Quantum-Enabled Technologies, the Division of Mathematical Sciences supported a 2024 Quantum Intersections Convening, and the Computing Community Consortium held a 2023 "5 Year Update to the Next Steps in Quantum Computing Workshop," New opportunities are expected on the horizon, such as a partnership with the National Institutes of Health on quantum applications for biomedical research.

Quantum Leap Challenge Institutes

These large-scale centers bring together interdisciplinary groups of researchers to tackle different quantum related focus areas. NSF selected five Quantum Leap Challenge Institutes in September 2020 and 2021. The five centers focus on various areas of quantum such as sensing, computing, and simulation. Initially envisioned as part of NSF's Big Ideas, the QLCIs now form the backbone of NSF's QIS inquiry. NSF has since rerun the competition, preliminary proposals were due in March 2025, and full proposals were due September 17, 2025, for invited applicants only. More information on each institute can be found here.

National Quantum Virtual Laboratory – Quantum Testbeds (NQVL)

These test beds support the design and implementation of quantum technology projects. The goal is to enable translation of basic research into deployable technologies. NSF announced in September 2025 that the first four teams are to receive funding to lay the foundation of a shared national resource for quantum development for the NQVL program. These teams include: Quantum Advantage-Class Trapped Ions System, Quantum Computing Applications of Photonics, Wide-Area Quantum Network to Demonstrate Quantum Advantage, and Open Stack Rydberg Atom Quantum Computing Laboratory.

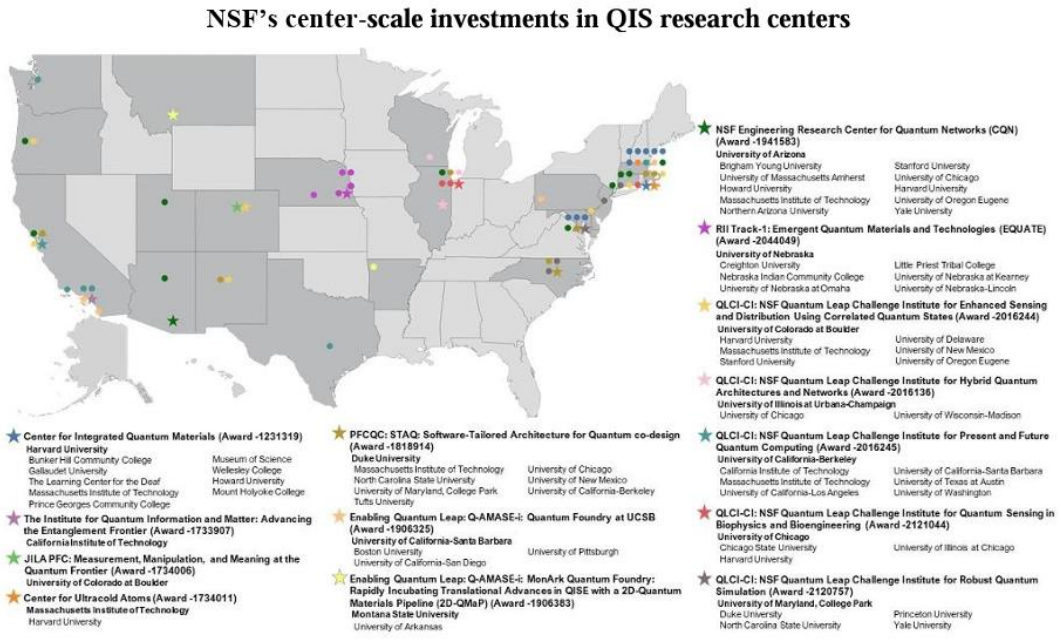
The next deadline for NQVL is April 7, 2026. More information on this program can be found here.

Other Centers

NSF has also supported major quantum-focused centers through other programs, such as the Center for Quantum Networks, an Engineering Research Center; the Institute for Quantum Information and Matter and the JILA Physics Frontiers Center, both Physics Frontier Centers; as well as the Center for Integrated Quantum Materials and the Center for Integration of Modern Optoelectronic Materials on Demand, both Science and Technology Centers. Currently, there are no NSF Regional Innovation Engines that are quantum focused; however, the finalists for the next NSF Engines competition announced in September 2025 have a few that are quantum focused. These include Chicago Quantum Exchange and QuantumCT.

Smaller Scale Programs

NSF has several other quantum programs that fund smaller scale efforts. The Expanding Capacity in Quantum Information Science and Engineering (ExpandQISE) program, which is currently archived, was launched in 2022 and includes a partnership with DOE. The program aims to connect emerging research institutions with the QLCIs and other experienced quantum researchers to build quantum research capacity at non-R1 institutions. It is unclear whether the program will be reposted or not. Many other NSF opportunities across directorates also have quantum focuses within their programs.



Other current NSF quantum opportunities include:

- Connections in Quantum Information Science (CQIS); and
- DCLs:
    - U.S.-UK Center-to-Centre Collaboration Opportunities for Artificial Intelligence and Quantum Information Science and Technology;
    - Advancing Quantum Education and Workforce Development;
    - Enabling Quantum Computing Platform Access for National Science Foundation Researchers; and
    - Advancing Educational Innovations that Motivate and Prepare PreK-12 Learners for Computationally-Intensive Industries of the Future