

Policy Update: Early Implementation of a New Golden Age of Science Priorities

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On October 8, the Trump Administration [convened](#) A New Golden Age of Science Summit in Washington, DC, bringing together about 200 representatives from federal science agencies, academia, industry, national laboratories, nonprofit organizations, think tanks, philanthropy, and venture capital. The summit outlined White House Office of Science and Technology Policy (OSTP) Director Michael Kratsios's vision for science policy and the Administration's first steps toward implementing the July 2026 [Science: A New Golden Age](#) report. More than a dozen announcements affecting key federal science agencies advanced four priorities: preparing the scientific workforce for AI-driven science, including autonomous laboratories; strengthening STEM workforce programs, especially for early-career scientists; pursuing ambitious national science and technology missions; and encouraging the creation of new scientific institutions. The sections below summarize the summit's major themes, newly announced initiatives, and implications for the research community.

Major Themes

- **Prioritization of public-private partnerships and industry contributions.** A major focus of the event was industry-led initiatives and contributions to major national challenges such as AI, quantum, and fusion. Industry partners announced \$2.4 billion in contributions for the Genesis Mission, a fusion company received a Phase II Genesis Mission award, and quantum companies are competing to build the first fault-tolerant, scientifically relevant quantum computer. Federal funding for larger-scale centers and hubs increasingly requires a consortium of industry, academia, and national labs. OSTP Director Kratsios emphasized a shift of federal research dollars away from legacy research institutions to new research organizations or industry-led consortia. The summit also served as the stage for President Trump to award the nation's highest technical honors to prominent tech leaders, including the National Medals of Science and the National Medals of Technology and Innovation. A major focus was their involvement in aligning industry resources and capabilities with federal policy goals such as in the Genesis Mission and re-shoring semiconductor manufacturing.
- **Focus on the individual researcher.** Part of the new strategy is to prioritize support for individual scientists including "high-potential American STEM students" at K-12 and early career PhD scientists. This includes increasing investments for existing early-career programs at NSF, DOE, and NIH to new mechanisms such as the Genesis Mission Graduate Fellowship program.
- **Integration of AI or "Super Intelligence" tools to accelerate scientific discovery and application.** The Genesis Mission with a goal of accelerating scientific discovery and changing how the U.S. does science is the highest Administration priority. This summit followed the U.S.-led "[Kyoto Vision](#)," a joint declaration with 15 other countries pledging to embrace AI to accelerate global scientific discovery. Multiple university partnerships were

announced to commit shared resources and build new coalitions for “Super Intelligence” tools and compute power.

- **Focus on ambitious national missions.** The federal government will prioritize resources and attention to centralized, hyper-focused national missions, such as Genesis, quantum computing, fusion, advanced nuclear reactors, and space missions. These national missions should also have specific timeframes and measurable benchmarks, such as delivering a functional quantum computer for scientific research by 2028 and launching NASA’s nuclear-powered spacecraft to Mars also by 2028. New organizational models will be used to drive impact on these missions such as through a new x-labs consortium that will drive additional dollars and resources from industry and philanthropic partners.
- **Metascience implementation.** NSF is taking the lead with a new Office of Metascience to run experiments on how research is funded, reducing administrative burdens and testing alternative grant models like distributed review and “Golden Tickets.” Other agencies are also participating in or launching their own initiatives, including NIH, DOE, NASA, and the Department of Defense. NSF and UKRI announced an agreement to share best practices and build on their joint expertise.

Agency Actions

The event announcements were an opportunity to showcase the implementation of the cross-cutting themes above into programs led primarily by the Department of Energy (DOE), the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), and the National Institutes of Health (NIH). The Department of War (DOW) and the National Institute of Standards and Technology (NIST) also made relevant announcements. Below are highlights for each major agency.

Major Federal Agency Announcements



DOE

- \$100M Genesis graduate fellowship pilot
- \$159M Genesis Phase II awards
- \$96M early-career awards
- \$2.4B private compute contributions
- 190 AI-ready datasets
- quantum applications and \$215M Q Competition



NSF

- Metascience initiative with UKRI
- Quantum + X and Synthetic Multicellularity prizes
- \$75M programmable cloud labs competition
- six-year bachelor’s-to-PhD pathway
- \$30M MathStars



NASA

- DOE partnership on nuclear power and propulsion
- SR-1 Mars mission targeted for 2028
- SMD metascience and dual-anonymous review
- 10 Genesis fellows
- frequent robotic lunar missions beginning in 2027
- proposed U.S. Space Academy



NIH

- \$1.8B predictive-biology data effort with DOE and Biohub
- R3PEATS replicability program and new metascience office
- NSF X-Labs collaboration
- recruit 100 intramural investigators



Department of War

- \$200M planned for programmable cloud labs in FY2028
- \$350M quantum initiatives
- defense-lab performance framework
- academic research partnerships
- fellowship links
- research security and patent commercialization



NIST

- Joined Genesis Mission Consortium
- contributes data repositories, standards, and physical test beds
- supports X-Labs scaling and AI Forge

Summary of highlighted agency actions

Department of Energy

- **New \$100 million Genesis Mission Graduate Fellowship Pilot Program:** The DOE Office of Science [released](#) a \$100 million solicitation seeking applications from U.S. institutions of higher education to establish a four-year doctoral training pilot for students to develop dual competencies in AI and key scientific disciplines. As part of this accelerated training program, DOE will require pilots to include research experiences at both National Laboratories and with industry partners. DOE aims to produce an initial cohort of 100 Genesis Mission Graduate Fellows in four years. Letters of Intent are due November 9, 2026.
- **\$159 million for Genesis Mission Phase II Awards:** DOE [announced](#) \$159 million to fund 12 new Phase II project awards to advance additional science and technology challenge areas. This included projects led by seven universities, four national labs, and one private company. DOE also announced six new Phase I awards. DOE has now funded 297 Genesis Mission projects, with 14 Phase II and 283 Phase I projects.
- **\$96 million for DOE Early Career Program Awards:** DOE [announced](#) \$96 million to fund 67 early career scientists from 39 universities, 11 DOE National Laboratories and Office of Science User Facilities, and 26 states. This is part of an effort
- **\$2.4 billion for the Genesis Mission Consortium Super Intelligence Frontier Compute:** Eleven industry partners announced \$2.4 billion in private-sector contributions, including AI tools and computing credits, for the Genesis Mission Consortium. The resources provide high-performance computing, AI model access, and technical support to researchers working on DOE Genesis Mission projects and are now expanding to support researchers funded by 15 other agencies involved in the Genesis Mission.
- **Access to 190 Data Sets for AI Applications:** DOE is federating and curating 190 datasets that can then be more easily accessed to train next-generation AI models for the Genesis Mission.
- **Science Applications for Quantum Computing:** DOE [announced](#) Quantum Genesis Priority Applications (QGPA), which are eight key scientific utility problems intended to guide future DOE investments, including the \$215 million Q Competition for industry to deliver fault-tolerant, scientifically relevant quantum computers by 2028, a National Quantum Computing User Facility, and focused research on applications of fault-tolerant quantum computers. The priority domains include chemistry, materials, subatomic physics, and applied mathematics. Within these domains, DOE provides examples of target computations in eight specific applications that will help measure the utility of future quantum computing systems.
- **New Metascience Initiative:** Like other agencies, DOE will be exploring new models and funding mechanisms, including a “Golden Ticket” pilot program to give Office of Science peer reviewers greater flexibility to “support bold, high-risk research ideas that challenge conventional thinking and could unlock entirely new fields of scientific discovery.”

National Science Foundation

- **New NSF Metascience Initiative and Partnership with UKRI:** NSF provided new details about the previously announced metascience initiative which will focus on three key areas:

making merit review work better (distributed and phased peer review, golden tickets, pilots, and scaling what works); showing better evidence on the impact of NSF investments (accelerate understanding and help make better portfolio decisions); and using NSF data to examine and simulate past competitions and how changes would have impacted them. NSF is [working with UKRI](#) to share best practices and wants additional partnerships and engagement. NSF would like to receive ideas, hypotheses, potential approaches, data, or other information from stakeholders.

- **New Prize Challenges:** NSF will be launching two prize challenge competitions addressing grand research challenges (GRC):
 - Quantum + X focused on quantum innovation for addressing a variety of sectors and their relevant problems and
 - Synthetic Multicellularity focused on designing biology with new computational and experimental approaches that build complexity and regulation in multicellular designed systems.
- **Additional Programmable Cloud Labs Competition:** NSF will release a \$75 million PCL competition focused on Super Intelligence-Native Instruments (SINI). These projects will develop instruments to be incorporated in the autonomous labs being developed by the [PCL winners announced earlier this year](#).
- **New NextGen Workforce Program:** NSF will launch a new program that enables a six-year bachelors to doctoral accelerated PhD for enhancing the STEM workforce.
- **MathStars Investment:** NSF is investing \$30 million in [National Math Stars](#) to grow its program finding and matching talented kids with accelerated math learning experiences.

National Aeronautics and Space Administration

- **New NASA-DOE partnership for space nuclear power and propulsion:** NASA Administrator Jared Isaacman and Energy Secretary Chris Wright [signed](#) a Memorandum of Understanding, “Accelerating American Leadership in Space Nuclear Power and Propulsion,” covering joint work from research and fuel production through launch and operations. The agreement takes effect November 1, 2026. It supports NASA’s Space Reactor-1 (SR-1) Freedom, a nuclear electric propulsion spacecraft planned to launch to Mars in 2028, and Lunar Reactor-1, a fission surface power system for a future Moon base. A December 2025 Executive Order directs NASA to have a launch-ready lunar surface reactor by 2030.
- **SR-1 design and a shift in NASA’s role:** In a fireside chat with OSTP Director Kratsios, NASA Administrator Isaacman explained that SR-1 will pair the Power and Propulsion Element that NASA has already paid for, which has integrated electric thrusters, with a reactor design that has been in development for decades. NASA will challenge industry to advance high-temperature materials and power conversion for later missions. SR-1 will carry three Ingenuity-class helicopters to Mars to scout for subsurface water ice and future landing sites for astronauts. NASA Administrator Isaacman described SR-1 as the first of a series of reactor-powered missions, with later missions to moons such as Europa and Enceladus and, eventually, crewed trips to Mars. He also estimated that about 40 percent of NASA’s resources and personnel are deployed for activities that industry can also do and would like to shift those resources to work NASA should be doing that doesn’t have a commercial business case, such as fission-powered spacecraft.

- **New Science Mission Directorate metascience initiative:** NASA [announced](#) a coordinated metascience initiative within its Science Mission Directorate (SMD) to improve the reliability and productivity of NASA science. As a first step, NASA is expanding dual-anonymous peer review in SMD research merit review, so reviewers evaluate proposals without knowing who submitted them. NASA began piloting dual-anonymous review during the first Trump Administration.
- **New NASA Genesis Mission Fellows:** NASA will support 10 Genesis Mission Fellows—accelerated doctoral students with expertise in both super intelligence and a science or engineering field and who will conduct research on NASA mission areas at NASA laboratories. The fellowships build on NASA’s Future Investigators in NASA Earth and Space Science and Technology (FINESST) program. NASA has not yet provided more specific information on funding or application timing.
- **Moon base timeline and payload opportunities:** Isaacman said NASA expects to be ahead of schedule on the first elements of a permanent Moon base, currently scheduled for 2030. Starting around the end of the first quarter of 2027, NASA hopes to launch robotic lunar missions on a near-monthly basis to test the technologies astronauts will need on the surface. He said these missions will carry scientific payloads, that payload opportunities will be open to Artemis Accords signatories, and that university students will be able to build hardware that flies to the Moon. NASA is also creating a lunar orbital constellation for commercial communications relay and observation.
- **United States Space Academy:** OSTP Director Kratsios said a report to the President on the proposed United States Space Academy is due 180 days after the directive was signed. Isaacman said NASA issued a request for information on the academy and has received many responses, that states are competing to host it, and that the President will decide the location. He tied the academy to the national space transportation policy goal of 1,000 launches per year by 2030.

[National Institutes of Health](#)

- **\$1.8 billion for Foundational Data for Predictive Biology:** NIH, DOE, and Biohub [signed](#) a Memorandum of Understanding and committed \$1.8 billion in existing capabilities to advance an open biological data foundation for predictive models of living systems with the goal of deepening understanding of biology, human health, and disease, and accelerate breakthroughs in medicine and biotechnology. NIH, through Bio Genesis, will coordinate the contribution of health data, imaging resources, and knowledge bases developed through prior federal investments. This joint effort aligns with the *Predicting Living Systems* S&T Challenge under the Genesis Mission.
- **New Replicability Program and New Metascience Office:** NIH is creating a new NIH-wide program called Rigor, Replicability, and Reproducibility to Promote Excellence, Accuracy, and Translation in Science (R3PEATS) to support research, partnerships, infrastructure, and training towards these goals. Like NSF, NIH will also establish a metascience office with a focus on ensuring NIH funds rigorous, reproducible research.
- **NIH X-Labs Commitment:** NIH will work with NSF to identify x-lab topics that could be jointly supported to tackle biomedical research challenges.
- **Generation Discovery:** NIH will recruit 100 new investigators to work in the NIH intramural research program. Additionally, NIH is emphasizing funding for early-stage investigators in its extramural program and broadening the use of R35 Investigator-Focused awards.

Department of War

- **New DOW-NSF partnership and \$200 million for Programmable Cloud Labs:** DOW [announced](#) that it signed a Memorandum of Understanding with NSF for collaboration in science, technology, and innovation. Initial joint areas include NSF X-Labs, the Programmable Cloud Laboratories Network, and AI Forge, a \$40 million DARPA-NSF program on AI interpretability, control, and robustness that launched in June. DOW plans to dedicate \$200 million to Programmable Cloud Labs in FY 2028 as part of its Future Years Defense Program. Possible joint activities include workshops and pilot projects, subject to each agency's authorities and resources.
- **New \$350 million in quantum computing initiatives:** DOW [announced](#) about \$350 million for quantum computing. DARPA advanced four companies (Atom Computing, Diraq, IBM, and IonQ) to Stage C of its Quantum Benchmarking Initiative (QBI) with about \$200 million in new funding. In Stage C, each company works with DARPA to verify that its proposed utility-scale quantum computer can be built and operated as designed. QBI aims to determine whether any approach can reach utility-scale operation by 2033. The DOW Office of Strategic Capital also extended an approximately \$150 million conditional loan commitment to PsiQuantum for domestic manufacturing and prototyping. Before January 2027, DARPA will hold application workshops with the DOE Office of Science, the National Nuclear Security Administration, and the Laboratory for Physical Sciences to identify national security uses in areas such as chemistry and materials science.
- **New performance framework for defense laboratories:** As part of its metascience initiative, DOW is building an enterprise-wide framework to measure the performance of its in-house laboratories, federally funded research and development centers (FFRDCs), and university affiliated research centers (UARCs), implementing a recommendation of the Defense Research Enterprise Review. The framework will use measures tied to each institution's mission instead of a single scorecard and will add to existing financial metrics such as obligation rates. DOW will start with a limited pilot before a broader rollout.
- **Academic research partnerships:** DOW described two efforts run by its Center for Defense Academic Research (CeDAR):
 - The Problem-Based Basic Research Consortium brings multidisciplinary university teams together with foundations and selected international partners, with industry and venture capital firms as observers.
 - The Translational Research Initiative for Academia and Defense (TRIAD) pairs academic teams with Service laboratories to work on Combatant Command and Joint Interagency Task Force priorities.
- **New link to the DOE Genesis Mission Fellowship:** Starting this fiscal year, DOW will explore linking DOE's Genesis Mission Graduate Fellowship with its SMART Scholarship-for-Service program and the National Defense Science and Engineering Graduate (NDSEG) Fellowship, so fellows could intern at each other's laboratories and industry partners. SMART, in its 20th year, welcomed its largest cohort this year with more than 750 scholars. DOW also named 19 FY 2026 SMART SEED Innovation Award recipients; the award provides up to \$155,000 per year for up to three years to SMART scholars starting DOW research careers after their doctorates.
- **Research security and technology transfer:** DOW said it has strengthened its science and technology program protection policies to implement National Security Presidential Memorandum 33 (NSPM-33), including risk-based reviews of fundamental research and

screening against Section 1286 foreign-risk entity lists. DOW also cited its Defense Patent Holiday, launched earlier this year, which offers royalty-free licensing windows on DOW-developed patents to speed commercialization.

National Institute of Standards and Technology

- **NIST joins the Genesis Mission Consortium:** NIST [announced](#) it will participate as a federal agency partner in the Genesis Mission Consortium, focusing on biotechnology, quantum science, and materials design and discovery. DOE's summit [fact sheet](#) lists NIST, NIH, and DOW as new agency members of the expanded consortium. NIST first joined the Genesis Mission in August 2026.
- **Data repositories and test beds:** NIST is contributing its data repositories and physical test beds, along with its expertise in data standards for interoperability. Resources it named include the JARVIS computational materials database, the NIST Materials Data Repository, the NIST Public Data Repository, the Additive Manufacturing Benchmark Test Series (AM-Bench), and the National Technical Reports Library.
- **X-Labs and AI Forge:** During the summit's X-Labs panel, organizers said DARPA, NIST, NIH, and other agencies have committed to supporting and scaling the X-Labs model beyond NSF. No agency has released details. NIST's Center for AI Standards and Innovation (CAISI) also helped develop AI Forge, the DARPA-NSF program included in the new DOW-NSF agreement.