ASAP Request for Information

As part of the American Science Acceleration Project (ASAP), Senators Heinrich and Rounds invite interested members of the public to provide information and feedback. ASAP is a national initiative to accelerate the pace of American technical innovation and we are interested in participation from any American individual or organization who shares this goal.

Please answer as many of the following questions as you wish; we welcome any response that answers at least one of these questions. For clarity, please identify which question(s) your comments address. In formulating your responses, we encourage you to consider both opportunities for legislative action as well as opportunities for public and private action that may not require legislation.

We request responses to this RFI by **June 30, 2025**. You are welcome to update your responses after that point.

Please email your responses to ASAP@heinrich.senate.gov and ASAP@rounds.senate.gov.
Your responses will remain private with the offices of Senator Heinrich and Senator Rounds. You may be contacted for additional details or discussion. The questions below come in two parts: cross-cutting questions about the ASAP initiative as a whole, and questions about each of the ASAP pillars. The appendix provides more detail on the motivation behind some of the questions.

Cross-Cutting

1. How should the United States achieve the goal of accelerating the pace of scientific innovation? What roles should be played by Congress, the administration, industry, civil society, and academia?
2. What infrastructure needs to be built to make scientists more productive, and for each type of infrastructure you recommend, what should the funding model be for the construction and operation of that infrastructure?
3. How do we ensure appropriate design of new scientific workflow models that offload certain tasks to AI while keeping human scientists at the center of the discovery process?
4. In order to measure the success of ASAP, we need to have objective metrics that measure the speed of scientific innovation. What metrics already exist and what ones need to be created? What information should the federal government have to understand the health and productivity of our innovation ecosystem, and what tools processes, or institutions should be used to do so?
5. Grand challenge problems can help provide concrete direction for how to implement new innovations. What core innovations does America need that can help guide ASAP? If possible, please provide an objective quantifiable metric, such as decreasing the time it takes to get a new drug to market from 10 years to 1 year.

ASAP Pillars

6. How can America build the world's most powerful scientific **data** ecosystem to accelerate American science?
7. What does the U.S. need to do to ensure its researchers have access to enough **computing** resources to power new breakthroughs?
8. What should America do to take full advantage of **AI** capabilities to dramatically accelerate the pace of science in both the private sector and the public sector, and what innovations should we target in the foundations of AI itself?
9. How can we radically increase the scale, speed, and impact of scientific **collaboration** across disciplines, institutions, and sectors?
10. In order to cut the time from discovery to deployment by a factor of 10, what changes are needed in the **process** of scientific innovation, such as in the regulatory ecosystem, scientific funding models, education and workforce pipelines, and the resources that constitute the scientific supply chain?

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Appendix

For each of the ASAP pillars, we've provided some example questions that may help guide your responses. Your response does not need to specifically address any of these.

Data

- What standards and protocols should be established to ensure interoperability of scientific datasets across disciplines?
- What are the biggest blockers preventing researchers from sharing high-value scientific data today? What technological solutions could allow researchers to analyze sensitive data without compromising privacy?
- What new data infrastructure is needed to handle the scale and complexity of emerging scientific data?
- How can we balance data privacy and security with open access to scientific data?
- How can we create sustainable funding models for data infrastructure and maintenance, and how can we improve academic incentives to reward researchers who contribute to datasets?

Compute

- How should we construct public-private partnerships for public sector computing infrastructure that increase availability and reduce cost for high-performance computing and AI?
- What role should distributed, federated, and decentralized computing models play in the scientific research ecosystem?
- What benchmarking improvements do we need to understand the value provided by computing systems, and how should we best measure the strength of U.S. public sector compute against what is available in other nations?
- What specific breakthroughs in hardware are needed to sustain accelerated scientific progress?
- How can edge computing be integrated into scientific workflows to accelerate data processing?

Artificial Intelligence

- What breakthroughs in modeling could decrease the need for expensive or slow real-world experiments? How should we best combine modeling and experiment to maximize our scientific knowledge?
- How can AI accelerate the generation and testing of new scientific hypotheses? How should we construct scientific research models where AI can be used to iteratively drive simulation or experimentation to achieve a particular research goal?
- What bottlenecks limit development of, or access to, AI-driven research tools?
- What should a democratic AI research ecosystem look like? What lessons can we learn from earlier American-led efforts such as the development of the internet?
- What foundational innovations are needed in AI, such as in areas like interpretability, energy efficiency, and uncertainty quantification?

Collaboration

- How do we break down institutional silos that prevent high-impact interdisciplinary research? What role should emerging technologies play in interdisciplinary collaboration, such as interpretation and large-scale analysis of scientific literature, or providing suggestions about how to match researchers across disciplines to form optimal scientific teams?
- What models of public-private collaboration could best unlock scientific acceleration? While implementing those models, how do we incentivize the private sector and the public sector to share knowledge without compromising competitiveness?
- Should the U.S. government play a more active role in coordinating and funding mid-scale and large-scale scientific collaborations, and if so, how?
- How can citizen science initiatives contribute to the national scientific data ecosystem?
- What institutional and funding structures could better integrate researchers, engineers, and manufacturers into cohesive innovation ecosystems?

Process

- How can the U.S. radically accelerate the introduction of breakthrough technologies to the market without sacrificing safety and public trust?
- What foundational changes should we consider in how funding agencies sponsor research? What already works well that we should double down on?
- In what ways should intellectual property laws evolve to provide greater regulatory clarity and better facilitate AI-accelerated scientific discoveries?
- How can peer review be modernized to encourage faster or more rigorous scientific validation? What role should emerging technologies play in analyzing the quality of new research?
- What new institutional structures should we experiment with to accelerate innovation?
- In the healthcare domain, how can artificial intelligence be strategically leveraged to accelerate processes within federal agencies? Conversely, how might these agencies deploy AI-driven solutions to streamline operations in order to support a research community that increasingly depends on rapid technological advancements?