

Ten times faster is not 10 times better

Alondra Nelson

As the Trump administration systematically defunds the American research ecosystem, while disingenuously promising a return to so-called “gold standard science,” hope can be drawn from the new bipartisan initiative from Senators Martin Heinrich (Democrat, New Mexico) and Michael Rounds (Republican, South Dakota). Their American Science Acceleration Project (ASAP) seeks to make science in the United States “ten times faster by 2030” through five pillars: data, computing, artificial intelligence (AI), collaboration, and process improvement. But simply accelerating will exacerbate historical weaknesses in our innovation system and reproduce the damaging Silicon Valley ethos of “move fast and break things.” Faster is not necessarily better when it comes to innovation and discovery. Supercharging a research ecosystem that already struggles with accessibility and public trust risks more than it achieves.

The initiative, now open for public comment (until 30 June), presents an opportunity to examine, restore, and improve publicly funded research as well as redefine what acceleration should mean in 21st-century science amid current political realities. Unfortunately, the proposal offers a narrowly technocratic interpretation of acceleration, mainly emphasizing an ever-greater role for AI, without critical analysis of where and how these tools are helpful or harmful. If the United States seeks faster breakthroughs, it must simultaneously consider ways to open the system to wider participation while ensuring that the public—as providers of research funding and data—benefits from research.

Consider ASAP’s vision for democratizing access to “AI-ready” data that individuals provide with permission. When human genomic data became available, it indeed accelerated discoveries worldwide, expanding understanding of disease-causing mutations and human evolution. However, endeavors like the Human Genome Project have also shown that more care is necessary to respect refusal, protect privacy, and compensate data sharing.

ASAP’s commitment to provide access to advanced computing does not go far enough. Current systems continue to favor established researchers at elite institutions. If “AI-ready” data—information that is provided with consent and is accessible for training machine learning models—require sophisticated pre-processing, then under-resourced institutions will be left out. A truly accelerated discovery ecosystem would prioritize distributing these capabilities as a first step.

ASAP also envisions scientists as “copilots” for AI, with computational approaches operating under human direction and oversight. This sounds reassuring, but implementation will be complex. Research often requires challenging fundamental assumptions in uncharted territory where no “correct” course exists.

When researchers use similar AI models trained on historical literature, they may be pushed toward incremental advances while missing paradigm-shifting discoveries. Take, for example, Barbara McClintock’s work on DNA transposons, which was initially rejected because it challenged prevailing assumptions—assumptions that would be encoded into any AI system trained on existing science literature. Then there is the issue of who will have control over scientific results. Innovations, including the internet precursor Advanced Research Projects Agency Network, Global Positioning System technology, and many life-saving diagnostics, emerged from public investments that ultimately succeeded in offering benefits to a wide market over gains for a small group. When the originators of the Human Genome Project and AlphaFold (an AI system that predicts protein structures) chose open sharing over proprietary control, they enabled researchers and companies to build on this widely available information.

Accelerated science must also be regulated science. American pharmaceutical companies succeed not despite rigorous safety standards but because of them. Approval by the US Food and Drug Administration has been a benchmark precisely because it endeavors to balance innovation with accountability. Speed without legitimacy is self-defeating in a world where scientific credibility determines adoption.

ASAP’s emphasis on cross-disciplinary teamwork addresses genuine limitations to the current system but needs to be broader. Challenges—from responsible AI development to climate adaptation—require expertise spanning multiple fields. Yet academic incentives still reward narrow specialization over collaborative breadth. The initiative’s vision of attracting talent across the nation raises questions about whose talents count. Scientific collaboration has historically excluded knowledgeable community members who lack advanced degrees. Traditional fire management practices, community health insights, and enduring ecological knowledge might complement formal scientific research. Farmers working with climate scientists through systems that integrate remote-sensing data with traditional weather prediction methods might come up with better solutions—and a wider acceptance from the farmers themselves. There may be differences, but innovation accelerates through creative friction.

What should emerge from an effort like ASAP is an ecosystem that eliminates barriers to participation rather than one that accelerates inequities. The United States can either succumb to existing research patterns or fundamentally reshape them to address persistent hurdles. Only one of these paths leads to true innovation. □

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