

**Written statement
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Subcommittee on Science, Manufacturing, and Competitiveness

“Less Hype, More Help: AI That Improves Safety, Productivity, and Care”
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Introduction

Chairman Cruz, Ranking Member Cantwell, and distinguished members of the committee, I want to thank you for the opportunity to testify today on how we can maximize and sustain the value for human flourishing of America’s extraordinary artificial intelligence (AI) sector.

My name is Mark Muro and I’m a senior fellow at the Brookings Institution. Acknowledging that affiliation, I should note here at the top that these remarks and anything I say today are my personal views and do not reflect the views of the institution or its other scholars, employees, officers, or trustees. These are my own thoughts about a timely topic.

Nearly every week, America’s AI innovators are introducing incredible new tools and solutions that are allowing more and more people, firms, entrepreneurs, and communities to expand the reach and achievement of human skills and expertise. This progress has generated significant cause for optimism. In recent years, most notably, AI’s capacity to drive productivity, advance science, promote health, and magnify what humans can do has been demonstrated time and again. These achievements reflect the power of AI’s special ability to weave digital innovations and human skills into a transformative collaboration.

And yet, for all that, significant pessimism has begun to complicate the moment. Some fear what has been deemed the greatest automation technology in human history.ⁱ Others worry about how they will weather likely employment disruptions and about the uncertainty of what skills will serve them in the future. Still others worry about the impacts of data center developmentⁱⁱ on local communities, and the potential for highly uneven geographic build-out of the AI economy.ⁱⁱⁱ

In view of that, I want to say a few words about areas where federal support can help maintain the sector’s momentum, reinforce its value, and promote optimism about its possibilities. Above all we should ensure that AI is pro-human and pro-community. In this direction, my fellow panelists have done an excellent job of inspiring optimism by detailing some of the possibilities. Now I’d like to follow them by noting a few areas of policy that have helped businesses like those we’ve just heard about innovate and that will now be needed to sustain more of such innovation.

The nation should build a strong AI-support platform.

To speak about what it will take to sustain AI innovation to support human flourishing, I want to draw on my work at Brookings on “AI readiness” to suggest that the nation needs to build a strong AI-adoption platform.^{iv} To that end, I would encourage the committee and

Congress coalesce around a core set of AI-adoption readiness priorities. I'll touch on **five areas** of needed attention:

Research

First, broader AI innovation and adoption requires maintaining a dominant AI research base. Abundant research flows generate talent, but also ideas, intellectual property, innovation, and start-ups. Given that, there is work to be done.

To be sure, the United States maintains clear leadership in AI R&D and consistently outperforms other countries on innovation and investment. In 2024, for example, the U.S. developed 40 AI models while the second-best performer, China, produced 15. As to private investment, U.S. companies invested \$109.1 billion in AI research in 2024, vastly outpacing China's \$9.3 billion.^{xiii}

Yet recent developments suggest these figures won't be enough for the U.S. to maintain dominance. According to the International Data Corporation's (IDC) spending report, China is expected to see an 86% compound annual growth rate in generative AI investments from 2022 to 2027, meaning the country's generative AI spending could grow to represent 33% of the world's AI investment—up from less than 5% in 2022.^{xiv}

Against this backdrop, federal AI research funding trends are concerning. To be sure, U.S. government investment in AI research did increase from \$2.98 billion in 2024 to \$3.32 billion in 2025^v. However, this came at a moment when the authoritative National Security Commission on Artificial Intelligence (NSCAI) had advised doubling non-defense AI R&D investments annually to reach \$32 billion by 2026.^{xvi}

The nation's current mix of research activities also falls short on several areas of potential opportunity. First, U.S. private sector investments dwarf government outlays for basic (mostly academic) research. This may limit creative leaps forward and progress on novel use cases in underinvested sectors. Dwindling support for the NSF-led National AI Research Institutes—launched during the first Trump administration—is a case in point. Another missed opportunity is the thinness of AI research and computing flows into high-quality but farther-flung universities. As of now, the nation's Bay Area Superstars and Star Hubs account for about 60% of the nation's R&D flows, leaving institutions in many regions underserved.^{vi} Likewise, computational support for basic research in academia too often remains spotty, likely limiting the nation's innovation potential.

And so, the nation should build out its platform for broader AI adoption by expanding the scale of AI R&D and improving its character. To address the scale issue, the nation should prioritize a step change in total AI R&D outlays in the next decade. Rather than cut research outlays, Congress needs to “run faster” if it wants to outpace China, because R&D is a critical accelerant.

At the same time, to improve the composition of overall AI research, the nation should expand investments in basic R&D research and in mechanisms for broadening access to essential computational and data resources. On this front, increased basic research expenditure into universities appears critical. But so does rejuvenation of the AI Research Institutes program for accelerating research on new topics in new universities and locations. Additionally the build out of something like the National AI Research Resource (NAIRR) pilot program could provide a mechanism for increasing more and different researchers' gaining access to high-speed computing resources and datasets, including in more and different

locations.^{vii} Related to all of this, it would be valuable if some federal research grant-making was directed towards investments in “pro-worker AI” that supports such values as education, human learning, and human decision making.^{viii}

In a word, an expanded and enhanced research agenda is critical for creating a national platform capable of bolstering AI innovation, entrepreneurship, and adoption in the country.

Regional innovation clusters

Accelerating AI adoption also requires promoting the growth of emerging AI clusters in geographic regions. Dense, vibrant AI clusters are national assets that contribute to national progress. Neglecting such clusters is a missed opportunity that leaves innovation and adoption potential untapped.

With that in mind, the nation’s overall AI platform should promote broad AI adoption through region-focused industrial development. Nvidia, OpenAI, and Anthropic have all advocated for this kind of development, sometimes using the term “economic zones” to envision regional investment areas that fuse permit and energy solutions with federal and state job-creation, small-business empowerment, and community-level prosperity. Such regional development work could foment a powerful surge of optimism in communities.

Given that, the federal government should draw on its recent experience with “place-based” industrial investment to accelerate AI cluster scale-up in promising regions and sectors across the country.

What might this look like? Some of this region-catalyzing work could leverage the National AI Research Institutes from the previous Trump administration, as well as the NAIRR program, by orienting their research and computational supports toward the needs of promising local clusters. These steps would support early-stage activities in key clusters. More boldly, Congress and the Trump administration could revamp recent challenge grant efforts—such as the Commerce Department’s Regional Technology and Innovation Hubs program and the NSF’s Regional Innovation Engines—to focus new hubs and engines specifically for AI.^{ix} A number of the current hubs and engines are leveraging AI technologies already. Why not develop new centers fully focused on compelling AI verticals grounded in dynamic regional ecosystems?

Taken together, approaches like these will help ensure the national AI adoption platform promotes new expansion across the nation’s regions. They will also foster optimism and counter concerns that AI is somehow an industry working exclusively for others somewhere else.

Talent

AI adoption leadership will further hinge on ensuring that adequate pools of high-quality AI talent exist all across the economy, available to every sector and every region. The challenge is both narrow and wide.

The narrow part of the challenge is the nation’s diminishing home-grown share of the world’s elite AI talent. Speaking to this, the Information Technology and Innovation Foundation (ITIF) has shown that while the U.S. attracts and employs a high share of elite talent its domestic production of such talent has slowed.^x That’s a worry.

At the same time, there are also concerns about the broad degree of AI-readiness needed

across the nation’s workforce. Starting now, virtually all workers will need to understand AI principles; be able to understand and direct AI effectively; and be able to evaluate AI’s outputs, as notes the Department of Labor’s new Artificial Intelligence Literacy Framework.^{xi} In addition, such “AI-literacy” instruction—as continues the DOL—will need to cultivate agility at scale and instill such “human” skills as judgement, teamwork, creativity, and problem-solving. If that is widely achieved, workers will feel optimistic and engaged about AI. If not, they won’t.

And so, a supportive federal policy platform for AI needs to foster AI readiness among both top scholar echelons and everyone. Fortunately, U.S. immigrants and higher education stand out as proven sources of talent. Given that, thoughtful visa reforms will help the nation retain its talent lead. But even more important is the need to prioritize broad AI education and workforce literacy at higher education institutions and all across the workforce system, not only in the usual elite locations. Likewise, Congress should support the creation of regional AI learning networks, with employer-led, cross-sector partnerships that serve as training and innovation centers for the AI economy. Aligned to industry demand, all of this training will go a long way toward ensuring AI unleashes creativity and optimism among American workers. Connecting all of this to the emergence of AI industry clusters near universities and community colleges will help educate, engage, employ, and retain critical technical talent.

Infrastructure

Boosting regional AI adoption will further depend on the delivery of key infrastructure that is not now solidly in place, but on which national leadership depends.

On this front, the AI era is elevating the need for large-scale chip production, vast data and computational resources, new energy sources, and the build out of huge data centers in accordance with important electricity, water, and other permitting issues.^{xii} To be sure, work has begun on some of these issues, such as through the CHIPS and Science Act’s subsidies for semiconductor plant construction and the launch of the NAIRR pilot for giving more scientists, innovators, and educators access to the computing and data resources necessary for game-changing research.

With that said, AI-related infrastructure gaps stand as major impediments to regional and national scale-up. The demand for computing resources and energy is projected to challenge available supplies. Permitting and grid hurdles exacerbate the delivery problem. And to many communities, data center siting decisions seem secretive and disruptive—divorced from regional economic planning.^{xiii}

In light of these challenges, the federal government should work to facilitate timely, carefully planned, and environmentally sound data center and power development. A portion of that work must clearly involve policy and regulatory efforts to bring new clean energy generation sources and grid links online. Some of this will involve speeding up the complicated federal, state, and local siting and permitting process for conventional or nuclear power plants, including by leveraging suitable public lands or replacing coal plants. But it will also be important to streamline the permitting processes for clean energy generation and related transmission capacity.

Otherwise, the federal government should do what it can to facilitate strategic data center development. With data center development at times disruptive and localities increasingly wary of it, federal and other stakeholders should work with industry to optimize the process so that it supports AI build-out that maximizes local AI gains.

Development could be streamlined and rationalized through the establishment of AI economic zones within states or through the release of suitable public lands. Likewise, the government could encourage data center developers to negotiate beneficial partnerships with local stakeholders, which would complement construction with community AI development. In this vein, Brookings has suggested how regions might trade expedited data center regulatory approvals for shared computing resources, research collaborations, and talent initiatives.^{xiv} The federal government could aid in that. Federal agencies could create and fund an AI tech hubs program, where data center developers and the federal government are co-investors in region-level tech ecosystems along with universities and regional firms. Alternatively, Congress could approve funding for AI test-bed collaborations involving the co-location of national labs, data centers, universities, and startups on federal land. The Department of Energy has already moved in this direction with its plan to leverage 16 federal land parcels for rapid data center construction on sites that have in-place energy infrastructure and fast-track-permitting.^{xv} Some of these sites could be managed to create community economic development as part of the build out.

Worker security

Finally, any national platform for regional AI scale-up needs to include strategies to provide basic worker security. Such provisions are necessary because successful AI adoption will involve both gains for many workers and dislocation for others. Minimizing worker dislocation will smooth adoption, keep talent engaged, and maintain morale.

Recent work from Brookings shows that higher-tech, higher-value, information-based industries—especially in cities—are likely to see elevated levels of AI impact.^{xvi} Specifically, Brookings analysis suggests 30% of all workers could see at least 50% of their occupation’s tasks disrupted by generative AI in the coming years, with higher “exposure“ levels for higher-skill computer and office activities.^{xvii} While some of those impacts will enhance worker well-being and create new jobs, others could bring about sudden task shifts, depressed work demand, or even chronic under- or unemployment. Others may shred long-reliable pathways for worker mobility.^{xviii} This matters because such disruption could produce “adjustment” challenges for local labor markets, weaken confidence in the AI revolution, and undermine support for regional AI scale-up.

Given that, the nation’s federal AI platform needs to provide elements of a worker-adjustment strategy that helps regions deliver on Vice President JD Vance’s promise that AI adoption will bring workers “higher wages, better benefits, and safer and more prosperous communities.”^{xix}

Much remains to be worked out on how to deliver this. But for sure, the nation will want to invest more in “active labor market policies” that help people shift into new jobs. These policies may involve rapid retraining programs for individuals impacted by AI-related job displacement, such as the pilot efforts the Trump administration has advanced.^{xx} Relatedly, these policies may entail flexible benefits, including for wage insurance, and health care that is not tied to one employer. Other supports may include policies that give a measure of economic security to workers who want to be retrained and learn new careers. For example, Brookings has described the idea of a “Universal Basic Adjustment Benefit” that would help displaced workers transition to new work with the help of temporary income support that allows for intensified training access.^{xxi} Such provisions can provide a measure of stability as the nature of work evolves while also kindling optimism among workers who may currently be discouraged due to their fears of displacement costs.

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In sum, innovative firms of all kinds—whether AI developers themselves, the increasing millions of AI-adopting firms, or the thousands of AI start ups entering the space—are providing abundant grounds for excitement about AI’s future potential. Their entrepreneurship gives much cause for optimism. And yet, sustaining that optimism requires sustaining those firms’ growth and Americans’ confidence in the future—and that means reinvesting in the fundamentals of American AI strength and vibrancy.

Which is why Congress should build a strong AI-support platform, one that begins with robust investments in R&D and regional innovation clusters, and that leans in on talent, infrastructure, and worker security. Implemented well, such a platform will foster both continued growth and a broader, more widely shared confidence in the AI future.

ⁱ Daron Acemoglu, David Autor, and Simon Johnson, “Building pro-worker artificial intelligence.” Working paper 34854. (Cambridge: National Bureau of Economic Research. 2026).

ⁱⁱ Daniel Goetzl, Mark Muro, and Shriya Methkuppally, “Turning the data center boom into long-term local prosperity.” (Washington: Brookings Institution, 2026).

ⁱⁱⁱ Mark Muro, Shriya Methkuppally, and Molly Kinder, “The geography of generative AI’s workforce impacts will likely differ from those of previous technologies.” (Washington: Brookings Institution, 2025).

^{iv} Mark Muro and Shriya Methkuppally, “Mapping the AI economy: Which regions are ready for the next technology leap.” (Washington: Brookings Institution, 2025).

^v NITRD, “Artificial intelligence R&D investments—FY 2019 to FY 2025.”

^{vi} Muro and Methkuppally, “Mapping the AI economy.”

^{vii} Mark Muro and Julian Jacobs, “The case for promoting the geographic and social diffusion of AI development.” Washington: Brookings Institution, 2024.

^{viii} Daron Acemoglu, David Autor, and Simon Johnson, “Building pro-worker artificial intelligence.” Working paper 34854. (Cambridge: National Bureau of Economic Research. 2026).

^{ix} Muro and Methkuppally, “Mapping the AI economy.”

^x Trelysa Long, “AI is powering the U.S. economy, but who’s powering AI?” (Washington: ITIF, 2025).

^{xi} Employment and Training Administration, “Training and Employment Notice No. 07-25.” Washington, 2026.

^{xii} Muro and Methkuppally, “Mapping the AI economy.”

^{xiii} Goetzl, Muro, and Methkuppally, “Turning the data center boom into long-term local prosperity.”

^{xiv} Ibid.

^{xv} Office of Policy--Department of Energy, “Request for information on artificial intelligence infrastructure of DOE lands.” Request for information.

^{xvi} Mark Muro, Shriya Methkuppally, and Molly Kinder, “The geography of generative AI’s workforce

impacts will likely differ from those of previous technologies.”

^{xvii} Mark Muro, Shriya Methkupally, and Molly Kinder, “The geography of generative AI’s workforce impacts will likely differ from those of previous technologies.”

^{xviii} Forthcoming research from the Brookings Institution and Opportunity@Work.

^{xix} Reuters., “Quotes from US Vice President JD Vance’s AI speech in Paris.” February 11, 2025.

^{xx} U.S. Departments of Labor, Commerce, and Education. “America’s talent strategy: Building the workforce for the golden age.” (Washington, 2025).

^{xxi} Mark Muro and Joseph Parilla, “Maladjusted: It’s time to reimagine economic `adjustment” programs.” (Washington, Brookings Institution, 2017).