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Chairwoman Mace, Ranking Member Brown, and distinguished members of the Subcommittee on Cybersecurity, Information Technology, and Government Innovation: thank you for the invitation to testify on the future of artificial intelligence. I am Nicol Turner Lee, a Senior Fellow in the Governance Studies and Director of the Center for Technology Innovation at the Brookings Institution. With a history of over 100 years, Brookings is committed to evidence-based, nonpartisan research in a range of focus areas. My research expertise encompasses data collection and analysis around regulatory and legislative policies that govern telecommunications and high-tech industries, along with the impacts of innovation, artificial intelligence, and the digital divide on vulnerable populations. I am also the author of *Digitally Invisible: How the Internet is Creating the New Underclass*, which explores the latter point. I am also testifying in my individual capacity.

I. Introduction

Artificial intelligence (AI) is not the future—it is here. AI use has been firmly established in several sectors for years in the United States and globally. As more advanced, capable AI tools, including generative and agentic models, become more accessible and technically mastered, the

technology's promises will also become clearer or realized by individuals, organizations, and communities. Today, several workplaces require use of AI by workers, and one report shows 92% of companies have plans to increase their investment in the technology.[1] Some companies already require employees to use the technology in hopes of benefiting from its promises to improve efficiency.[2] Companies are reporting that they'll spend over $375 billion on technology globally in 2025.[3] In just about every sector, companies are figuring out the role of AI in enhancing their productivity. They are also figuring out the most appropriate investments in talent to support AI innovation.

Beyond enterprise use cases, AI is poised to transform the delivery of critical services in domains, such as government services, health care, and education. In all three domains, the technology can help increase efficiency and personalized access, in some cases benefiting marginalized individuals. For example, AI-powered translation tools allow individuals to seamlessly communicate across languages, general-purpose chatbots provide users with a wealth of information at their fingertips, and personalized tutoring tools can tailor educational content to those with unique learning needs.

Although AI adoption is accelerating, its development is far from over. Frontier labs, firms, and research institutions are building both general-purpose models and domain-specific models, including spatial intelligence tools, legal and finance platforms, and search tools for doctors.[4] Research indicates AI may accelerate some breakthroughs, including in the development of new

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[1] Mayer, Hannah, Lareina Yee, Michael Chui, and Roger Roberts. "Superagency in the Workplace: Empowering People to Unlock AI's Full Potential." McKinsey & Company, January 28, 2025. https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/superagency-in-the-workplace-empowering-people-to-unlock-ais-full-potential-at-work.

[2] Abril, Danielle. "No AI, no job. These companies are requiring workers to use the tech." *The Washington Post*, June 3, 2025. https://www.washingtonpost.com/business/2025/06/03/ai-workplace-duolingo-shopify-employees/.

[3] DePillis, Lydia. "The A.I. Spending Frenzy Is Propping Up the Real Economy, Too." *The New York Times*, August 27, 2025. https://www.nytimes.com/2025/08/27/business/economy/ai-investment-economic-growth.html.

[4] *Forbes*. "Forbes 2025 AI 50 List." April 10, 2025. https://www.forbes.com/lists/ai50/.

drugs.[5] AI tools can also revolutionize weather forecasting and monitoring amid a changing climate.[6] Given this potential, governments across the world are launching billion-dollar initiatives to collect language-specific training data and build sovereign AI infrastructure to support model development and research capacity.[7] The future of AI technology also includes embracing the "physical world" where highly trained robots are entering manufacturing and transportation in ways that may ultimately impact the workforce.

With so much more on the horizon in AI, it is imperative to have the correct balance of innovation and regulation to ensure that consumers, institutions, and critical infrastructure are safeguarded from AI's risks and other potential harms, including workforce displacement, bias and discrimination, or the irreparable errors of machines. In my testimony today, I will offer three points that Congress should be considering as critical tenets around the future of AI: the need for responsible and ethical frameworks in AI design and governance; the importance of a ready and agile talent pipeline and workforce; and the importance of monitoring the unknowns in AI innovation to ensure its safety and security.

II. **The future depends on responsible and ethically designed models and governance**

Responsible AI begins in the early stages of design. Much of the bias and discrimination that is furthered or reflected in AI outputs emerges from the data used to train a model. This data, often

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[5] Fahlis, Yao, Paul Mandel, Charles Crain, Betty Liu, and David Fuller. "Accelerating drug discovery with Artificial: a whole-lab orchestration and scheduling system for self-driving labs." arXiv, April 1, 2025. https://arxiv.org/html/2504.00986#:~:text.

[6] University of Cambridge. "Fully AI driven weather prediction system could start revolution in forecasting." March 20, 2025. https://www.cam.ac.uk/research/news/fully-ai-driven-weather-prediction-system-could-start-revolution-in-forecasting.

[7] The Economist. "Can Nvidia Persuade Governments to Pay for 'Sovereign' AI?," July 13, 2025. https://www.economist.com/business/2025/07/13/can-nvidia-persuade-governments-to-pay-for-sovereign-ai.; Maslej, Nestor, Loredana Fattorini, Raymond Perrault, Yolanda Gil, Vanessa Parli, Njenga Kariuki, Emily Capstick, et al. "Artificial Intelligence Index Report 2025." Stanford, CA: AI Index Steering Committee, Institute for Human-Centered AI, Stanford University, Stanford, CA, April 2025. https://hai.stanford.edu/assets/files/hai_ai_index_report_2025.pdf.

scraped from the public internet, reflects the same biases humans exhibit in the physical world, allowing AI systems to replicate some of the harms that disproportionately impact certain populations. When this is placed into important sectors like education, criminal justice, health care, hiring, and finance, it can be catastrophic for many, but especially for the most marginalized and fragile individuals in our society. For example, research shows that Black patients may be more likely to be misdiagnosed by AI when they are underrepresented in the datasets used to train the model.[8]

The trends are particularly worrisome as some governments and businesses come to rely on more autonomous models for decision-making in these high-impact sectors.[9] In one case, a child welfare screening tool licensed by a local government to reduce calls into non-physical child abuse reports disproportionately flagged Black families for mandatory neglect investigations, and social workers refuted the risk classifications produced by the algorithm a third of the time.[10] Combating these and other biases introduced by AI systems through either underrepresented or inaccurate training data or poor human evaluation of the outcomes justifies the continuing need for more investment in approaches that focus on the responsible and ethical design and deployment of AI systems with guardrails that ensure the safety and security of the subjects.

The rapid advancements of generative AI in video, text, and voice extraction have further contributed to consumer fraud. For example, seniors are increasingly being targeted, and in some cases, falling for financial AI voice-cloning and deepfake scams that ask them to send money to their

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[8] Norori, Natalia, Qiyang Hu, Florence Marcelle Aellen, Francesca Dalia Faraci, and Athina Tzovara. "Addressing Bias in Big Data and AI for Health Care: A Call for Open Science." Patterns 2, no. 10 (October 8, 2021): 100347. https://doi.org/10.1016/j.patter.2021.100347.

[9] Maslej, Nestor, Loredana Fattorini, Raymond Perrault, Yolanda Gil, Vanessa Parli, Njenga Kariuki, Emily Capstick, et al. "Artificial Intelligence Index Report 2025." Stanford, CA: AI Index Steering Committee, Institute for Human-Centered AI, Stanford University, Stanford, CA, April 2025. https://hai.stanford.edu/assets/files/hai_ai_index_report_2025.pdf.

[10] Ho, Sally, and Garance Burke. "An Algorithm That Screens for Child Neglect in Allegheny County Raises Concerns." *90.5 WESA*, April 29, 2022. https://www.wesa.fm/politics-government/2022-04-29/an-algorithm-that-screens-for-child-neglect-in-allegheny-county-raises-concerns.

"relatives."[11] The end result has been an exorbitant amount of older residents having their life savings stolen and their lives completely uprooted.[12] Proper oversight of model deployment requires human-in-the-loop systems that adequately mitigate automation bias, or the tendency of humans to rely too heavily on AI.[13]

Being responsible requires some level of national governance. The U.S. largely depends on existing laws ascribed to highly regulated industries to protect consumers in digital spaces, including the Fair Housing Act, the Equal Credit Opportunity Act, the Fair Credit Reporting Act, and laws enforced by the Equal Employment Opportunity Commission (EEOC).[14] The statutory compliance rules have made it explicitly unlawful for AI to deny opportunities to consumers regardless of who they are, where they live, and their abilities.[15] With some of the recent challenges to the independence of federal agencies tasked with oversight of these key areas, and the potential barriers presented to state legislatures and state attorneys general (AGs) willing to confront these grievances, it will become more difficult to imagine a future of responsible and ethical AI. Without congressional resolution in some of the critical policy areas, including data privacy and consumer protection, everyday people will be exploited by AI systems, and this could have a detrimental impact on their quality of life.

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[11] Napal, Dinesh. "Artificial Intelligence in Financial Scams against Older Adults." American Bar Association, September 6, 2024. https://www.americanbar.org/groups/law_aging/publications/bifocal/vol45/vol45issue6/artificialintelligenceandfinancialscams/.

[12] Flores, Cristina. "FTC Warns of Scammers Cloning Voices with AI Technology during Phone Calls." *CBS Austin*, May 8, 2023. https://cbsaustin.com/news/nation-world/ftc-warns-of-scammers-cloning-voices-with-ai-technology-during-phone-calls-artificial-intelligence-family-emergency-scam-impersonation-senior-citizens-computer-science-social-media-voice-cline-consumer-protection-laws-cyber-security.

[13] Kahn, Lauren, Emelia Probasco, and Ronnie Kinoshita. "AI Safety and Automation Bias." Center for Security and Emerging Technology, November 2024. https://cset.georgetown.edu/publication/ai-safety-and-automation-bias/.

[14] U.S. Equal Employment Opportunity Commission. "What Laws Does EEOC Enforce?," 2BC. https://www.eeoc.gov/youth/what-laws-does-eeoc-enforce.

[15] Federal Deposit Insurance Corporation. "Fair Lending Laws and Regulations." FDIC Consumer Compliance Examination Manual, August 2025. https://www.fdic.gov/resources/supervision-and-examinations/consumer-compliance-examination-manual/documents/4/iv-1-1.pdf.

Regulation is also another avenue to provide more transparency in terms of what is permissible with AI systems. Congress is and will continue to be critical in providing leadership to manage the risks associated with widespread AI deployment. The recent passage of the "TAKE IT DOWN Act," which criminalized the nonconsensual sharing of explicit content and requires platforms to set up a process to remove such content within 48 hours of written notification from a victim, is a formidable example of bipartisanship.[16] Measures that ensure humans have oversight over automated and autonomous decisions, which can be disclosed and audited, are foundational to the future of AI in the U.S. These guardrails are important to ensure safety, security, and fairness in how these systems can impact consumers, businesses, and communities.

The AI Action Plan

It's safe to say that the federal government has recognized the importance of safe and trustworthy AI under the previous and current administrations. However, each administration has approached this goal in different ways. In 2023, former President Biden issued an executive order on safe, secure, and trustworthy development and use of AI, which encouraged "robust, reliable, repeatable, and standardized evaluations of AI systems, as well as policies, institutions, and, as appropriate, other mechanisms to test, understand, and mitigate risks from these systems before they are put to use." The Biden White House also penned an "AI Bill of Rights," providing principles and guidelines around "whenever automated systems can meaningfully impact the public's rights, opportunities, or access to critical needs."[17]

[16] Killion, Victoria. "The TAKE IT DOWN Act: A Federal Law Prohibiting the Nonconsensual Publication of Intimate Images." May 20, 2025. https://www.congress.gov/crs_external_products/LSB/PDF/LSB11314/LSB11314.1.pdf.
[17] Office of Science and Technology Policy. "Blueprint for an AI Bill of Rights." The White House, August 2022. https://bidenwhitehouse.archives.gov/ostp/ai-bill-of-rights/.

President Trump's AI Action Plan is focused on promoting U.S. leadership in the global competition to build advanced AI models. The Plan seeks to accelerate AI innovation by encouraging a coordinated effort at the federal level to establish "a dynamic, 'try-first' culture for AI across American industry."[18] In addition, it prioritizes expansions of AI literacy and skills development programs as well as streamlined permitting for AI infrastructure, including data centers. The current administration also has issued policies focused on promoting innovation within the AI ecosystem, with the AI Action Plan offering policy guidance to build an AI-ready workforce, accelerate AI-enabled scientific breakthroughs, and restore American semiconductor manufacturing. Under "enable AI adoption," the Plan discusses a lack of understanding and distrust hindering efforts to adopt AI across sectors.[19] Trust in AI systems and large-scale AI adoption require robust consumer protection frameworks.

While the current AI Action Plan recognizes the need to restore the fundamental aspects of a more technically inclusive AI framework, the U.S. must recognize that humans are deserving of transparency and disclosure in how AI systems are gathering and fielding their data, what decisions are being made by machines, and what agency they have over the outcomes. Having such guardrails may require legislation or regulation that would be beneficial to innovation and human safety.

The role of states and independent agencies

That is why AI innovation must be paired with robust consumer protections with proper enforcement mechanisms by Congress, independent federal agencies, and state as well as local leaders whose jobs are to protect their constituents. While there has been a diminished focus on public interest and safety for AI on the federal level, demonstrated by the administration's attempts

[18] Trump, Donald J. "America's AI Action Plan." The White House, July 2025. https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf.
[19] Ibid.

to slow the work of independent agencies responsible for consumer interests, states have stepped in to fill the gap. To date, all 50 states and Washington, D.C. have introduced AI-related legislation in 2025, and since January, over 100 measures across 38 states have been enacted into law.[20]

Multiple state attorneys general have also issued guidance about how existing law applies to AI. In fact, a bipartisan group of over 40 state attorneys general recently sent a letter to major AI companies stating they would use laws already on the books to challenge child exploitation via AI chatbots.[21] Both red and blue states have been successful in their efforts to protect consumers: Texas Attorney General Paxton recently reached a settlement holding hospitals accountable for using AI that made deceptive claims, which had adverse impacts on patient health.[22] Just this summer, the Massachusetts attorney general announced a $2.5 million settlement with a student loan company for allegedly failing to mitigate the risks of the adverse impacts of their automated underwriting models on Black, Hispanic, and noncitizen students.[23]

For many states, their role is quite different from that of the federal government. States are laboratories of democracy. They are working to ensure that everyday people have access to AI and are fairly and ethically treated in their use. As demonstrated, both red and blue states have an interest in advancing legislation and guidance in collaboration with Big Tech companies, which is why a pause on their ability to brainstorm and experiment with legislation that works for their constituents

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[20] National Conference of State Legislatures. "Artificial Intelligence 2025 Legislation," July 10, 2025. https://www.ncsl.org/technology-and-communication/artificial-intelligence-2025-legislation.
[21] National Association of Attorneys General. "Joint Letter to AI Industry Leaders on Child Safety," August 25, 2025. https://www.naag.org/policy-letter/joint-letter-to-ai-industry-leaders-on-child-safety/.
[22] Texas Office of the Attorney General. "Attorney General Ken Paxton Reaches Settlement in First-of-Its-Kind Healthcare Generative AI Investigation," September 18, 2024. https://www.texasattorneygeneral.gov/news/releases/attorney-general-ken-paxton-reaches-settlement-first-its-kind-healthcare-generative-ai-investigation.
[23] Massachusetts Office of the Attorney General. "AG Campbell Announces $2.5 Million Settlement with Student Loan Lender for Unlawful Practices through AI Use, Other Consumer Protection Violations," July 10, 2025. https://www.mass.gov/news/ag-campbell-announces-25-million-settlement-with-student-loan-lender-for-unlawful-practices-through-ai-use-other-consumer-protection-violations.; Bains, Chiraag. "The Legal Doctrine That Will Be Key to Preventing AI Discrimination." Brookings, September 13, 2024. https://www.brookings.edu/articles/the-legal-doctrine-that-will-be-key-to-preventing-ai-discrimination/.

would have had disastrous impacts. Earlier this summer, Congress considered, and ultimately struck down, a 10-year moratorium on states legislating AI, which threatened both states' rights and the public interest, indicating broad support for allowing states to regulate AI.[24] Yet, the AI Action Plan still suggests that AI-related funds should not go to states with "burdensome AI regulations" that are "unduly restrictive to innovation."[25] This vague wording around "burdensome AI regulations" may cause a chilling effect on state-level AI consumer protection frameworks, and I encourage Congress to rethink this invasive form of government control and consider the need for regulatory certainty.

Further, independent federal agencies, such as the Federal Trade Commission (FTC) and the Consumer Financial Protection Bureau (CFPB) play major roles in protecting regular Americans against adverse impacts from AI, from privacy violations to deceptive and discriminatory practices. Under the previous administration, the CFPB issued guidance on automated credit denials, asserting that firms cannot hide behind the complexity of black-box models to flout consumer finance laws, such as the Equal Credit Opportunity Act, that guarantee consumers transparent and accurate decisions.[26] The FTC has also pursued enforcement actions to hold AI systems accountable: The FTC launched an inquiry into AI companions just a few weeks ago, and it previously announced actions against operations that make deceptive claims about AI.[27] These agencies serve as a bulwark against deceptive and unfair consumer-facing AI applications, but the effectiveness of some

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[24] Morgan, David, and David Shepardson. "US Senate Strikes AI Regulation Ban from Trump Megabill." *Reuters*, July 1, 2025. https://www.reuters.com/legal/government/us-senate-strikes-ai-regulation-ban-trump-megabill-2025-07-01/.
[25] Trump, Donald J. "America's AI Action Plan." The White House Office of Science and Technology Policy, July 2025. https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf.
[26] Consumer Financial Protection Bureau. "CFPB Issues Guidance on Credit Denials by Lenders Using Artificial Intelligence," September 19, 2023. https://www.consumerfinance.gov/about-us/newsroom/cfpb-issues-guidance-on-credit-denials-by-lenders-using-artificial-intelligence/.
[27] Federal Trade Commission. "FTC Launches Inquiry into AI Chatbots Acting as Companions," September 11, 2025. https://www.ftc.gov/news-events/news/press-releases/2025/09/ftc-launches-inquiry-ai-chatbots-acting-companions.; Federal Trade Commission. "FTC Announces Crackdown on Deceptive AI Claims and Schemes," September 25, 2024. https://www.ftc.gov/news-events/news/press-releases/2024/09/ftc-announces-crackdown-deceptive-ai-claims-schemes.

operations is at risk, given the recent defunding.[28] Congress must ensure that these agencies are fully equipped with experts who understand the role that AI plays in protecting the public interest and have sufficient funding to do so.

This brings me to my second point that the future of AI must be about the fostering of talent and institutions, which enables our ability to compete globally when it comes to inventions, model testing, evaluation, and accountability.

III. **The future depends on a ready and agile talent pipeline and workforce**

Having robust talent pipelines that incorporate diverse viewpoints in the design, development, and deployment of AI are crucial to maintaining the U.S.'s competitive edge in this space. The current version of the administration's AI Action Plan fails to mention how the U.S. will attract the world's AI talent to our AI projects, and how we intend to cultivate a home-grown workforce. Further, technology companies are fueled by world-class talent, with technology executives such as Jensen Huang and Elon Musk being first-generation immigrants themselves. In fact, 77% of the top AI companies in the U.S. were founded or co-founded by first or second-generation immigrants, and 42% of them were founded by someone who originally came to the country as an international student.[29]

Instead of liberalizing our immigration policies to encourage highly skilled foreign internationals to enter our country and innovate, the current administration has instead threatened immigrants, revoked visas, and defunded research at world-class universities and scientific

[28] Consumer Reports Advocacy. "Senate Passes Budget Bill with Devastating Cut to CFPB's Funding," July 1, 2025. https://advocacy.consumerreports.org/press_release/senate-passes-budget-bill-with-devastating-cut-to-cfpbs-funding/.
[29] Wang, Judy, and Nicol Turner Lee. "Trump's Immigration Policies May Threaten American AI Leadership." Brookings, July 21, 2025. https://www.brookings.edu/articles/trumps-immigration-policies-may-threaten-american-ai-leadership/.

institutions.[30] Universities in other countries have taken advantage of the uncertainty that many international students face under this administration: Spain opened its doors to students subject to the U.S.'s restrictions, and European universities are offering "scientific asylum" to scientists affected by the administration's funding cuts.[31] Countries that the U.S. is competing with, such as China, are also using the "reverse brain drain" to attract top scientific and technological talent.[32] Chinese immigrants have founded eight of the top 48 U.S.-based technology companies,[33] but Chinese-born scientists have faced increased scrutiny under the guise of national security, with the White House and U.S. State Department saying it would "aggressively revoke" the visas of Chinese internationals working in "critical fields."[34] As other countries race to develop immigration policies that encourage researchers and scientists to come to their shores, the U.S. risks lagging in the AI race.

Cultivating talent also requires institutional assets. The current administration has cut more than $1 billion in research investments, claiming to realign research priorities to center AI-related research.[35] However, within computer science funding, cyberinfrastructure research is the only area

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[30] Turner Lee, Nicol, and Josie Stewart. "Attacks on Research and Development Could Hamper Technological Innovation." Brookings, June 23, 2025. https://www.brookings.edu/articles/attacks-on-research-and-development-could-hamper-technological-innovation/.

[31] Reuters. "Spain Eases Visa Rules to Draw Foreign Students Barred from US by Trump," June 24, 2025. https://www.reuters.com/world/spain-eases-visa-rules-draw-foreign-students-barred-us-by-trump-2025-06-24/.; Kassam, Ashifa. "European Universities Offer 'Scientific Asylum' to US Researchers Fleeing Trump's Cuts." *The Guardian*, March 25, 2025. https://www.theguardian.com/us-news/2025/mar/25/europe-universities-us-researchers-trump-administration-science.; Jett, Jennifer, and Peter Guo. "Blocked from Harvard, the World's Star Students Weigh Staying in Asia and Europe." *NBC News*, May 27, 2025. https://www.nbcnews.com/world/asia/harvard-international-student-ban-trump-china-europe-rcna209044.

[32] Wang, Vivian. "China Really Wants to Attract Talented Scientists. Trump Just Helped." *The New York Times*, June 4, 2025. https://www.nytimes.com/2025/06/04/world/asia/trump-science-visa-china.html.

[33] Neufeld, Jeremy, and Lindsay Milliken. "Most of America's Top AI Companies Were Founded by Immigrants." Institute for Progress, April 16, 2025. https://ifp.org/most-of-americas-top-ai-companies-were-founded-by-immigrants/.

[34] Wang, Vivian. "China Really Wants to Attract Talented Scientists. Trump Just Helped." *The New York Times*, June 4, 2025. https://www.nytimes.com/2025/06/04/world/asia/trump-science-visa-china.html.

[35] Lakhani, Nina. "Judge Allows Trump to Cut More than $1bn in National Science Foundation Grants." *The Guardian*, September 11, 2025. https://www.theguardian.com/us-news/2025/sep/11/trump-national-science-foundation-grants-ruling.; Duffy, Kat, and Sebastian Elbaum. "Trump's 'Big, Beautiful' Blunder on AI: Starving Science." Tech Policy Press, May 30, 2025. https://www.techpolicy.press/trumps-big-beautiful-blunder-on-ai-starving-science/.

slated for an increase, while research on emerging technologies, human-computer interaction (HCI), and security still face steep cuts—a 31% overall reduction.[36] AI and quantum science are exempt from National Science Foundation (NSF) cuts and might see modest funding increases, but researchers argue that the gains are minimal, especially when the broader AI research ecosystem is in danger.[37] Recent reporting also indicates that funding cuts to the Advanced Research Projects Agency for Health (ARPA-H) will affect contracts slated for preventing cyberattacks on hospitals and developing AI for medical imaging.[38] The ripple effects of defunding scientific research and capacity will be felt in the AI field and will have an impact on the talent pipeline not just now, but into the future. Further, efforts to scrub information from government websites that were relevant to research grants and projects or dictate the focus of that research will be consequential for current and future scholars interested in exploring numerous topics pertinent to AI.[39]

Policies and cuts to federal science funding will not only detract from the talent in the U.S. but will also compromise our ability to design inclusive AI systems that work across different sectors and populations. Beyond foundational AI research, research on AI's impact across sectors must be conducted to understand how AI is affecting different communities and sectors. This form of research is of particular importance, given that models often underperform when analyzing non-

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[36] Bhatia, Aatish, Irineo Cabreros, Asmaa Elkeurti, and Ethan Singer. "Trump Has Cut Science Funding to Its Lowest Level in Decades." *The New York Times*, May 22, 2025. https://www.nytimes.com/interactive/2025/05/22/upshot/nsf-grants-trump-cuts.html.

[37] Garisto, Dan. "Trump Moves to Slash NSF: Why Are the Proposed Budget Cuts so Big?" *Nature*, June 5, 2025. https://doi.org/10.1038/d41586-025-01749-x.; Turner Lee, Nicol, and Josie Stewart. "Attacks on Research and Development Could Hamper Technological Innovation." Brookings, June 23, 2025. https://www.brookings.edu/articles/attacks-on-research-and-development-could-hamper-technological-innovation/.

[38] Gardner, Sophie, Erin Schumaker, and Ruth Reader. "Trump Administration Cuts ARPA-H Funding for AI, Preventive Care, Cybersecurity," August 22, 2025. https://subscriber.politicopro.com/article/2025/08/trump-administration-cuts-arpa-h-funding-for-ai-preventive-care-cybersecurity-00521446.

[39] Keller, Jared. "The US Army Is Using 'CamoGPT' to Purge DEI from Training Materials." *WIRED*, March 6, 2025. https://www.wired.com/story/the-us-army-is-using-camogpt-to-purge-dei-from-training-materials/.; Ulmer, Alexandra, Marisa Taylor, Jeffrey Dastin, and Alexandra Alper. "Musk's DOGE Using AI to Snoop on U.S. Federal Workers, Sources Say." Reuters, April 8, 2025. https://www.reuters.com/technology/artificial-intelligence/musks-doge-using-ai-snoop-us-federal-workers-sources-say-2025-04-08/.

English text and exhibit intersectional biases based on protected characteristics, such as race and gender.[40] Further, grants dedicated to building pipelines to support diverse early career STEM researchers have also been terminated.[41] Efforts to build strong talent pipelines start in K-12 grades with providing all students with high-quality STEM education. Recent data from the U.S. Department of Education found that math scores for many of these students have dropped, including by three points lower than they were in 2005 for twelfth graders.[42] Science scores were reported to see similar declines.[43] While the AI Action Plan does recommend the development of workforce programs, career and technical education (CTE) programs, and apprenticeship pipelines, it is imperative to start in early education to ensure that the workforce is ready and agile enough to future proof innovation. It is also necessary to restore funding to research institutions that will, by far, lead the nation's AI race with future innovations.

Overall, the U.S. does not need to have "blind spots" or "talent vacancies," which will ultimately cost us our ability to grasp and maintain the next big idea. The field requires capable and agile experts across academic disciplines, industry sectors, civil society, and government who can ensure that the nation maintains its AI competitiveness.

V. While the future of AI is largely unknown, we still need 'common sense' approaches

[40] Nicholas, Gabriel, and Aliya Bhatia. "Lost in Translation: Large Language Models in Non-English Content Analysis." Center for Democracy and Technology, May 2023. https://cdt.org/wp-content/uploads/2023/05/non-en-content-analysis-primer-051223-1203.pdf.; Wilson, Kyra, and Aylin Caliskan. "Gender, Race, and Intersectional Bias in AI Resume Screening via Language Model Retrieval." Brookings, April 25, 2025. https://www.brookings.edu/articles/gender-race-and-intersectional-bias-in-ai-resume-screening-via-language-model-retrieval/.

[41] Flannery, Mary Ellen. "Trump Cancels Federal Research Grants. What Are the Consequences?" National Education Association, May 27, 2025. https://www.nea.org/nea-today/all-news-articles/trump-cancels-federal-research-grants-what-are-consequences.

[42] Carrillo, Sequoia. "A New Nation's Report Card Shows Drops in Science, Math and Reading Scores." *NPR*, September 9, 2025. https://www.npr.org/2025/09/09/nx-s1-5526918/nations-report-card-scores-reading-math-science-education-cuts.

[43] Ibid.

Amid increasing adoption, AI companies continue to innovate with promising breakthroughs in agentic models that are poised to handle more complex tasks. Yet, many have also spoken about ushering in superintelligence or artificial general intelligence (AGI) that will match or surpass human capabilities.[44] Proponents of AGI and superintelligence believe models' self-improvement will usher in an "intelligence explosion," touting their hypothetical use to solve society's most pressing issues across domains like medicine, global warming, and quantum physics.[45] Some company leaders have estimated we will reach such breakthroughs in the next decade, with the CEOs of OpenAI, Anthropic, and xAI remarking that AGI would come within a few years, if not sooner. [46]

Many external researchers are far more skeptical of AGI, and generally, AI's existential threats, at least for the foreseeable future.[47] Some technical experts say AGI is unlikely to be developed very quickly, if at all.[48] A survey of Association for the Advancement of Artificial Intelligence members demonstrated that over three quarters of respondents do not believe current AI development methods are likely to lead to AGI.[49] AI firms also define the term differently, as there is no singular measure or benchmark for human intelligence that a model could surpass. Similarly, it is unclear what the specific benefits such technology could offer, while use cases for

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[44] Tan, Eli. "'Superintelligence' Will Create a New Era of Empowerment, Mark Zuckerberg Says." *The New York Times*, July 30, 2025. https://www.nytimes.com/2025/07/30/technology/meta-earnings-ai-spending.html.
[45] Marr, Bernard. "Why Artificial Superintelligence Could Be Humanity's Final Invention." *Forbes*, October 31, 2024. https://www.forbes.com/sites/bernardmarr/2024/10/31/why-artificial-superintelligence-could-be-humanitys-final-invention/.
[46] Metz, Cade. "Why We're Unlikely to Get Artificial General Intelligence Anytime Soon." *The New York Times*, May 16, 2025. https://www.nytimes.com/2025/05/16/technology/what-is-agi.html.
[47] Rosenberg, Scott. "AI's Promised Nirvana Is Always a Few Years Off." *Axios*, February 20, 2025. https://www.axios.com/2025/02/20/ai-agi-timeline-promises-openai-anthropic-deepmind.
[48] Metz, Cade. "Why We're Unlikely to Get Artificial General Intelligence Anytime Soon." *The New York Times*, May 16, 2025. https://www.nytimes.com/2025/05/16/technology/what-is-agi.html.
[49] Jones, Nicola. "How AI Can Achieve Human-Level Intelligence: Researchers Call for Change in Tack." *Nature*, March 4, 2025. https://doi.org/10.1038/d41586-025-00649-4.

smaller or domain-specific models are abundant. Thus, it is important that we do not ignore the present uses and challenges they bring in the race toward AGI and superintelligence.

The possibility of AGI does not force the U.S. to choose between regulation and innovation; rather, the two can work in tandem to maintain U.S. leadership in providing space to innovate while ensuring trust and adoption in its current state. The AI Action Plan offers a starting line for this relationship, but greater enforcement power and protections will be needed to ensure regulatory compliance and safeguard the civil rights of consumers. The rights and safety of Americans should be central to AI development, rather than abandoned in the rush to innovate. In fact, this will remain especially important as frontier labs continue to experiment in areas that could introduce greater and/or unique risks as AI is designed to operate more autonomously.

These more autonomous models will also require that machines know more about impacted users to ensure a seamless experience. For instance, while a traditional AI system might be trained on domain-specific datasets, agentic health care AI often requires large-scale pretraining over a vast corpus of data, to make both generalized and specific decisions.[50] Personal data used for AI training and inference must also come with robust privacy protections, civil and human rights compliance, transparency, and accountability through the continued auditing of foundational models. In the end, even with the potential advances in AI, having responsible frameworks and governance that involve all governing bodies from the federal government to states, and centering humans and/or consumers in the conversation, will be necessary to ensure a more promising future.

VI. Conclusion

[50] Karunanayake, Nalan. "Next-Generation Agentic AI for Transforming Healthcare." *Informatics and Health* 2, no. 2 (September 2025): 73–83. https://doi.org/10.1016/j.infoh.2025.03.001.

In closing, Congress must play a significant role in the future of AI by advancing AI policies that simultaneously cement the U.S.'s leadership in AI, while protecting the public and ensuring that the benefits of AI are felt by all Americans. Specifically, Congress can encourage inclusive and responsible design by supporting regulatory agencies and consumer protection. It can similarly invest in the talent pipeline by creating programs and supporting immigration policies that can help attract top talent from across the world. Lastly, Congress should embrace the fact that the unknown will have consequences for constituents. Regulatory guidance for existing and emerging models can help clarify expectations for AI firms and provide necessary safeguards now and into the future.

The future of AI will not be determined in a vacuum, and the U.S. is at a critical moment in its development. How we proceed will determine whether the technology will be curated solely by the labs at the forefront of development or in partnership with the end users and leaders who wish to support responsible American innovation. Maintaining the nation's competitive edge will not only require an investment in expanded infrastructure, but a focus on the people who help shape and build the technology in addition to those who will use it.

Thank you again to the Members of the Subcommittee on Cybersecurity, Information Technology, and Government Innovation for the opportunity to testify. I also want to thank Brookings researchers Josie Stewart and Michelle Du for their assistance in preparing my statement. I look forward to your questions.