

# PUBLIC SUBMISSION

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**Comment On:** NSF-2025-OGC-0001-0001  
Request for Information: Development of a 2025 National Artificial Intelligence Research and Development Strategic Plan

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## Submitter Information

**Organization:** Association for Computing Machinery- US Technology Policy Committee

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## General Comment

See attached file(s)

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## Attachments

ACM Comments AI Reseach Strategic Plan

## **COMMENTS IN RESPONSE TO RFI ON THE UPDATE OF THE NATIONAL ARTIFICIAL INTELLIGENCE RESEARCH AND DEVELOPMENT STRATEGIC PLAN**

The Association for Computing Machinery (ACM), with more than 50,000 U.S. members and over 100,000 worldwide, is the world's largest educational and scientific computing society. ACM's US Technology Policy Committee (USTPC) welcomes the opportunity to comment on the 2025 National AI R&D Strategic Plan. As a nonpartisan body of over 170 computing experts from academia, industry, and government, USTPC provides authoritative, technically grounded policy guidance on issues at the intersection of computing and public policy. USTPC serves as the focal point for ACM's interaction with all branches of the US government, the computing community, and the public on policy matters related to information technology.

In response to the Office of Science and Technology Policy's Request for Information to the Update on the National Artificial Intelligence Research and Development Strategic Plan of April 24, 2025 (RFI), USTPC is pleased to submit the following comments. Tom Romanoff (Director of Policy) is submitting these on behalf of the committee. This document is approved for public dissemination. The document contains no business-proprietary or confidential information. Document contents may be reused by the government in developing the 2025 National AI R&D Strategic Plan and associated documents without attribution.

### **Key Recommendations**

- 1. Promote Algorithmic Accountability and Transparency:** AI R&D should prioritize mechanisms for algorithmic transparency, explainability, and accountability to ensure public trust and mitigate risks of bias and unintended consequences. Promote the use of audit trails, incident reporting systems, and independent auditing approaches.
- 2. Strengthen AI Security:** Invest in scientific understandings of AI's capabilities, limitations, and emerging risks to better assess potential national security impacts and counter adversarial threats. AI systems must be designed with robust cybersecurity measures to protect critical applications and infrastructure from misuse and malicious attacks. Research should include:
  - a. Fast development of adaptable systems, including in data-poor environments
  - b. Research privacy for AI applications that involve people's data. This includes research into 1) data collected without consent, 2) repurposed data (e.g., collected for A and used for B) 3) loss of where data was sourced, downstream manifestations, data ownership, 4) data accuracy issues exacerbated, 5) government overreach using personal data, and 6) impact to existing privacy law (e.g., GDPR and CCPA require transparency, but AI complexities could lose visibility and transparency, the right to be forgotten)
  - c. Emphasize techniques that make AI components (and systems that include them) capable of rapid change and incremental deployment.

**3. Invest in AI National Security:**

- a. Counter-AI Defense Initiative: Establish a comprehensive national Counter-AI Defense Program that combines threat intelligence, defensive capabilities, and technological safeguards to protect critical infrastructure from increasingly sophisticated AI-enabled threats, including deepfakes and adversarial attacks that can bypass traditional security measures.
- b. Assurance: AI security, reliability, and standards to determine conditions under which systems are reliably secure, resilient, and safe, particularly for critical infrastructure and national defense.

**4. Prioritize Foundational and Long-Term AI Research:** The federal government must prioritize funding for high-risk, long-term AI research that is essential for national interests and the public good, which may be less likely to attract commercial investment. This includes fundamental theory and algorithms for AI, next-generation AI hardware, and new architectures beyond deep learning (e.g., reasoning, Retrieval-Augmented Generation to combine with database knowledge, scalable AI verification, and normatively constrained AI) as well as AI for public sector services, education, and cybersecurity. A critical component of this research will be investing in AI testbeds to enable experimentation with novel AI approaches.

**5. Support Interdisciplinary and Collaborative Research:** The Plan should encourage collaboration between technologists, social scientists, ethicists, and affected communities to address broad societal impacts and benefits.

**6. Advance Human-AI Collaboration and Explainability:** Prioritize research into agentic AI, human-machine teaming, explainability, and accountability mechanisms. This will help ensure AI systems are understandable, controllable, and aligned with human capabilities and values.

**7. Promote Open-Source AI and Public Datasets:** Support the development and maintenance of open-source AI tools and shared public datasets to promote open access to AI research, models, datasets, and benchmarks while respecting privacy and intellectual property. This will enhance transparency and reproducibility, accelerating innovation and competitiveness by reducing barriers for academic and small businesses.

**8. Invest in Education and Workforce Development:** Federal R&D should include programs to expand AI literacy, train a diverse workforce, and address the ethical and social implications of AI technologies. Encourage innovative research partnerships with industry and academia, and invest in AI workforce training to maintain U.S. leadership and competitiveness.

**9. Ongoing Public Feedback and Independent Oversight:** Provide channels for public feedback, transparency in decision-making, and independent oversight of applications of results from federally funded AI R&D initiatives.

**10. Foster International Collaboration:** Establish a principled, coordinated approach to international AI research collaboration (e.g., through existing NSF programs such as PIRE) by

supporting bodies that foster international research and the development of international or sectoral standards and interoperability.

- 11. AI Equity Action Plan:** Launch an AI Equity Action Plan that strategically invests in technologies designed to bridge the digital divide, delivering personalized learning solutions and essential service access to underserved communities while requiring diverse representation in all stages of AI development and deployment. This includes leveraging AI technologies to enhance the independence of people with disabilities through applications such as real-time visual assistance, sign language translation, and speech-to-text conversion.
- 12. Develop a Sustainable AI Governance Framework:** Implement a binding framework that establishes maximum energy consumption thresholds for AI systems, directs research funding toward developing sustainability programs, and requires environmental impact assessments for large-scale AI deployments to mitigate the growing ecological footprint of advanced AI technologies.

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