CASC | Coalition for Academic Scientific Computation

CASC Response to Office of Science and Technology Policy NITRD NCO Request for Information on the Development of an Artificial Intelligence (AI) Action Plan

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Summary of the RFI

On behalf of the Office of Science and Technology Policy (OSTP), the NITRD NCO requests input from all interested parties on the Development of an Artificial Intelligence (AI) Action
Plan (‘‘Plan’’). This Plan, as directed by a Presidential Executive Order on January 23, 2025, will define the priority policy actions needed to sustain and enhance America’s AI dominance, and to ensure that unnecessarily burdensome requirements do not hamper private sector AI innovation.

Coalition for Academic Scientific Computation (CASC) Response

Investments in national infrastructure

1. **National AI Research Resource (NAIRR).** The National AI Research Resource (NAIRR) was enacted by Congress in 2020 to develop a comprehensive plan for a shared research infrastructure (https://www.congress.gov/bill/116th-congress/senate-bill/3890/all-info). The final NAIRR Report was published in January 2023 (https://www.ai.gov/wp-content/uploads/2023/01/NAIRR-TF-Final-Report-2023.pdf), and while implementation legislation was introduced in 2024 (S.2714), it has not yet been passed (https://www.congress.gov/bill/118th-congress/senate-bill/2714/text). Recognizing the critical need for accessible AI research resources, NSF initiated a pilot program in 2024 using internal funding.

   To maintain U.S. leadership in AI development and deployment, the AI Action Plan must prioritize full funding and implementation of NAIRR. The rapid expansion of AI capabilities – highlighted by the transformative impact of ChatGPT since November 2022 and the emergence of DeepSeek R1 in February 2025 – demonstrates the urgent need for an equitable, national AI research infrastructure. NAIRR will ensure that AI innovation is not restricted to a few dominant players but is accessible to the entire research and education ecosystem. This investment is essential to develop the needed workforce and provide access to the infrastructure needed for all sectors of the economy to contribute their innovation and creativity to keep the United States as the world leader in both development of AI technology and deployment of wide-spread use cases of AI.

2. **Regional resources: hardware, data, and people** Beyond making national resources available as described in the NAIRR, the AI Action Plan should include mechanisms to fund and support regional AI partnerships to build, operate, maintain, and support resources across geographical regions. A model for this approach exists in national-scale regional network providers such as The Quilt, which facilitate connectivity and resource sharing. Key regional investments should include:
   a. **Hardware** Infrastructure for running AI models is expensive and effective training and research will be severely limited if students and researchers have to train and work on inadequate hardware resources. Beyond the national resources with the top-level capabilities, expanding regional AI computing centers will ensure the entire Nation, both public and private

sectors, has the right level of access to high performance computing (HPC) empowered by the opportunities promised by AI development and deployment.

b. **Data** Foundational AI models and Retrieval Augmented Generation (RAG)-based assistants depend on robust, high-quality datasets.. The AI Action Plan should establish frameworks for secure, ethical, and widespread data sharing to support AI research while guaranteeing confidentiality, integrity, availability, and provenance.
c. **People** The AI technology is not at the level of maturity to serve as plug-and-play technology; successful deployment requires expertise. To have an effective approach to support broad deployment for, adoption by, and innovation from a broad section of the population, businesses, and organizations, the AI Action Plan should include funding for the creation of regional service centers to provide consulting, training, and technical support. These service centers, hosted at academic institutions and industry partners, will ensure that businesses, educators, and researchers have the necessary guidance to leverage AI effectively.

3. **Implement further incentives to build computer chip foundries in America** Congress funded the CHIPS Act in 2022 (Creating Helpful Incentives for Producing Semiconductors" for America Act). The AI Action Plan should include doubling down on the act and fund the construction of more advanced chip foundries in the United States under full control of U.S. companies and investors. The foundries should be at least as good and preferably better than the leading foundries in the world (TSMC in Taiwan, Samsung in Korea, and Intel in the United States). The AI Action Plan should include:
    a. Expanding funding for advanced chip foundries that are fully controlled by U.S. companies and investors.
    b. Ensuring that new foundries are capable of producing chips that meet or exceed the capabilities of leading global manufacturers (e.g., TSMC, Samsung, Intel).
    c. Encouraging further public-private partnerships to drive advancements in semiconductor technology specifically tailored to AI workloads.

Investments in workforce development and education

Training the U.S. workforce on AI is critically important to maintain national security, economic competitiveness and leadership in technological innovation. AI continues to evolve and transform our future economy and society, ensuring access to AI education and workforce training across all regions of the nation, whether urban, suburban or rural areas, to gain skills that will keep workers highly competitive in the marketplace. The

more workers are well-trained on AI, including on technical formulations, computation and data needs, and on inherent challenges with using AI enabled platforms, the more the U.S. will thrive.

To achieve this, the AI Action Plan should prioritize investments in AI education across multiple levels, from K-12 initiatives to higher education and workforce reskilling programs. AI education must encompass technical foundations, computational infrastructure, data ethics, and responsible AI use. Collaboration between higher education institutions and industry partners—such as those supported by the National Artificial Intelligence Research Resource (NAIRR) Pilot—will ensure that AI training aligns with workforce needs. By leveraging the scale and expertise of universities and the strategic direction of industry partners, the U.S. can build a dynamic and adaptable AI-ready workforce that meets the demands of a rapidly evolving technological landscape.

Investments in research and development

1. **AI safety and ethics assessment** Market-driven AI development often prioritizes performance and deployment speed over safety, ethics, and regulatory compliance. Historically, cybersecurity and software safety have lagged behind product innovation, leaving vulnerabilities unaddressed. Even though Executive Order 14110 “Safe, Secure, and Trustworthy Artificial Intelligence” was rescinded on January 20, 2025, the AI Action Plan should include explicit funding for independent public and private research organizations to develop robust safety, legal, and ethical assessment tools that will allow reliable assessment of software and hardware incorporating AI capabilities. The results of this research should be commercialized through companies committed to ongoing support and development, ensuring that both public and private sector entities can validate the trustworthiness of AI-enabled systems. These tools can then be used by the public and private sector organizations who want to validate the quality of the AI-enabled systems they seek to purchase and deploy to advance their respective missions and goals. These tools will help evaluate compliance with existing regulations, industry standards, and societal norms. Establishing and maintaining strong AI governance mechanisms will be crucial for fostering public trust and mitigating risks associated with AI deployment.
2. **Human-AI collaboration** Decades of research on human-computer interaction (HCI) and robotics provide a foundation for active research in understanding AI integration in the workplace and everyday life. The explosive deployment and incorporation of AI into various software tools, accelerated since the announcement of ChatGPT in November 2022, highlighted the urgent need for deeper exploration into human-AI collaboration.

The AI Action Plan should support a dedicated research program focused on optimizing how humans interact with AI systems across domains. This includes enhancing "prompt engineering" skills as an important new skill to get the full value out of any interaction with AI and certainly out of any collaboration with AI. Research should also explore structured collaboration models that maximize AI's capabilities while ensuring human oversight, accountability, and productivity. The research should include a focus on exploring and developing effective and efficient workflows for collaboration between humans and AI. Some basic workflows are obvious and easy to teach and implement, but to get the full use of AI deployments, collaborative workflows need to be investigated and optimized.

In summary, the AI Action Plan must recognize that AI research and development are not solely the domain of the private sector. A robust national strategy requires sustained investments in public-sector AI infrastructure, regional research capabilities, and domestic semiconductor manufacturing. By fully implementing NAIRR, expanding regional AI resources, investing in a highly skilled workforce and securing the semiconductor supply chain, the United States can ensure that AI innovation benefits all sectors of society, maintaining its position as the global leader in AI development and deployment. By investing in AI-human interaction research, the U.S. can establish best practices for integrating AI into various industries, enhancing workforce efficiency, and ensuring that AI remains a tool that augments human expertise rather than replacing it. These efforts will be vital to fostering AI literacy and adoption across all sectors of the economy.