

# PUBLIC SUBMISSION

<b>Received:</b> May 29, 2025 <b>Tracking No.</b> mb9-ue6s-jq5i <b>Comments Due:</b> May 28, 2025 <b>Submission Type:</b> Web
--

**Docket:** NSF-2025-OGC-0001  
NITRD\_FRDOC\_0001

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

**Document:** NSF-2025-OGC-0001-DRAFT-0259  
Comment on FR Doc # 2025-07332

---

## Submitter Information

**Organization:** University of Notre Dame

---

## General Comment

See attached file(s)

---

## Attachments

University of Notre Dame Strategic AI Plan

# **Request for Information on the Development of a 2025 National Artificial Intelligence (AI) Research and Development (R&D) Strategic Plan**

## **Submitted by the University of Notre Dame**

*“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.”*

### **Introduction:**

As the United States looks toward the future and determines the means by which it will secure its spot as the world leader in innovation, employing a comprehensive plan to leverage artificial intelligence (AI) for societal advancement is chief among all priorities. While AI has the capability to accelerate innovation, secure economic growth, enhance the United States’ security landscape, and improve the human condition, these benefits can only be achieved with a dedicated, whole-of-government investment in research and development, workforce infrastructure, and the articulation of relevant ethical parameters.

The AI Research & Development (R&D) Strategic Plan has the opportunity to shape the nation’s posture toward next-generation artificial intelligence at a critical juncture in the global innovation landscape. Through directed investments in domestic research, a focus on AI education and workforce development, and a commitment to safe and ethical AI, the United States can secure its position as the leader in this critical field.

### **Investments in domestic research capabilities**

The federal government must leverage the existing domestic research landscape, bolstering the academic research ecosystem and providing support for public-private partnerships that drive innovation. Through a concerted effort from government, industry, and academia, the United States can maintain its leadership in advancing both fundamental and applied AI research.

We recommend that the AI R&D Strategic Plan include a framework for significant investments in fundamental research. The federal government has an opportunity to shape the United States’ AI future in a way that is distinct from industry. Most notably, the government has the ability to support fundamental research in a way that the private sector does not. Rather than being driven by near-term returns, the federal government can prioritize investment in areas that serve national interests or promote the public good. By utilizing its existing and time-tested relationship with the university research establishment, the government can leverage extant technologies and infrastructure in a manner that fosters innovation through collaboration, and ensures the nation’s brightest minds are engaged in cooperative work.

Beyond investments in university-based research, we urge the government to include a framework for the promotion of public-private partnerships that allow dedicated compute and data sandboxes for co-innovation. The United States research ecosystem has excelled due to the

academia-industry-government co-innovation ecosystems. It is critical to double down on such existing frameworks to accelerate research progress and create pathways for fundamental research to innovation to translation in AI.

As an example of how these partnerships can drive innovation, the University of Notre Dame's [Lucy Family Institute for Data and Society](#) is dedicated to advancing data-driven and AI convergence research, translational solutions, and education to ethically address society's problems. As an innovative nexus of academia, industry, and the public, the Institute also fosters data science and AI access to strengthen capacity building within communities. The Lucy Institute's strength comes from its dedication to cross-industry partnerships, demonstrating the material benefits of collaboration and co-innovation relationships between academia and industry.

Increased investments in research at all stages will allow the country to effectively bridge the gap between resource-rich corporations and academic research entities that would otherwise hinder innovation and equitable access to AI advancements. We strongly urge the government to prioritize and substantially increase funding for the AI R&D Strategic plan and related AI infrastructure projects to ensure that AI advancements are not monopolized by a select few but are accessible to a broad spectrum of researchers and institutions.

The University of Notre Dame's [Center for Research Computing](#) (CRC) is a prime example of an existing element of the university research ecosystem working to leverage AI for real-life applications. Composed of multidisciplinary science faculty with expertise spanning the layers of global security and cyberinfrastructure, faculty within the CRC are tackling issues of global security by developing cutting edge techniques, utilizing AI to develop early warning systems that will identify manipulated images, deepfake videos and disinformation online.

## **Workforce development**

New AI technologies are expected to have a significant impact on future manufacturing operations, workers, and jobs. While most people believe AI technologies will naturally displace these jobs, we believe AI technologies should be viewed as another tool available to the worker. Industry is rapidly evolving with the adoption of AI and emerging technologies. In order to ensure a pipeline of workers to maintain America's AI dominance, we must create workforce development programs that merge hands-on learning with theoretical knowledge and practical skills, including proficiency in AI tools. We must seek to address the widening skills gap by cultivating a workforce capable of interdisciplinary, creative problem-solving, ensuring that both emerging professionals and current practitioners are well-equipped to drive societal transformation in an era of rapid technological change.

Where gaps in the labor force emerge as a result of the integration of AI, we must ensure that there is wholehearted commitment to programs that promote upskilling, or opportunities to increase and advance skills in a targeted area. In focusing on ameliorating skill gaps among existing workers, the United States can remain dominant in the field of AI, while ensuring that the nation's workforce is strong and well-equipped to adopt technological advances.

Finally, when considering a longitudinal view of the nation's workforce abilities, it becomes clear that, in order to responsibly cultivate the next generation of workers, it is our responsibility to prepare students for a future where AI becomes increasingly powerful and plays important roles in productivity tasks and in our daily lives, not least by cultivating in them the skills necessary for effective and ethical human-AI collaboration. We advocate for the articulation of a curriculum that not only incorporates AI tools, but also critically examines their limitations and potential affordances. This approach has the potential to cultivate a new generation of workers who are not only precise and proficient in their use of generative AI, but also conscientious about the ethical dimensions of these technologies.

The University of Notre Dame's [McKenna Center for Human Development and Global Business](#) is committed to studying the future of work and workers as AI and automation technologies unfold at warp speed. Understanding how to manage the transition to this new age and ensuring that the global workforce—and the workers that support it—flourish, is of the utmost importance. The McKenna Center is dedicated to providing the visionary research and foresight required to guide this transition over the coming decades.

## **Ethical AI**

Given the rapidly emerging nature of AI, stakeholders across all sectors have expressed significant concerns about bias, inequitable access, safety vulnerabilities, and ethical uncertainties of AI. Not to be interpreted as opposition to the integration of AI, rather, the concern for responsible deployment of a technology as expansive and with as much potential as AI demonstrates an understanding of its power and a sense of responsibility to ensure it is deployed thoughtfully. This highlights the urgent need within the R&D Strategic Plan for the inclusion of a guiding framework for the role of AI at the interface of different domains and disciplines while ensuring that AI technologies are developed and applied with consideration for their potential impacts.

When considering necessary guardrails for the promotion of AI safety, we believe that there are four aspects that should be considered—AI as Responsible, Inclusive, Safe, and Ethical (RISE).

We see the following research and training areas as key priorities for sustaining AI dominance in the United States while prioritizing safety and responsibility.

- Responsible:
  - Designing, developing, deploying, and studying interactive AI systems to enhance human-AI collaboration, augment human intelligence, and democratize access to AI empowerment technologies in a responsible way.
  - Mechanisms for measuring, evaluating, and informing users of the potential privacy and safety risks associated with the use of Large Language Models

(LLMs) and LLM-powered agents, especially in critical domains e.g., health care, social services.

- AI Tools that improve AI literacy of end users and help them make informed decisions aligned with their own values and long-term interests.
- Policies to standardize data sharing formats and practices for pharmaceutical companies and organic chemists more broadly.
- Inclusive
  - Designing, developing, and deploying AI systems that bridge instead of widen the existing economic disparities in the US.
- Safe:
  - Interdisciplinary research to advance the trust and reliability of AI when applied to systems involving humans (such as biometric recognition) and serving humans (such as AI-assisted systems aiding human experts).
  - Testbeds and sandboxes for assessing and benchmarking the safety and trustworthiness of AI models/agents.
- Ethical
  - Systems for the measurement, evaluation, and alignment of model and agent behaviors to human values.
  - Creating interpretable, advanced AI-driven models must foster rational, proactive, and ideology-free policy-making across multiple governance domains, including public policy, corporate governance, and regulatory frameworks. By embedding ethical safeguards, rigorous validation, and continuous oversight, these models can enhance decision-making processes, mitigate systemic risks, and ensure equitable and accountable outcomes in an increasingly data-driven world.

We believe that Notre Dame has a unique role to play in convening, leading, and amplifying the voices of leaders in higher education, technology, and faith-based communities who are invested in developing ethical frameworks and applying them to emerging debates around AI. Furthermore, the University of Notre Dame is dedicated to ensuring that AI deployment aligns with global human rights norms and democratic principles.

At this time, the University is creating a powerful network of innovative, influential leaders who will be actively immersed in this work through the [The Institute for Ethics and the Common Good](#). The University is also a member of the [U.S. AI Safety Institute Consortium \(AISIC\)](#), a group established by the National Institute of Standards and Technology, to bring together more than 280 organizations to develop science-based and empirically backed guidelines and standards for AI measurement and policy, laying the foundation for AI safety

across the world. The University's investment in AI safety measures and strength in efforts to promote the enhanced use of AI are evident, and only stand to benefit from government support for the development of safety structures.

Through a variety of strategic research initiatives, we have come to the following initial conclusions:

- There is a great need for context-specific ethical frameworks and context-aware LLMs. The way that geopolitical conflict, for example, is portrayed by these models can have an outsized impact on moments of heightened social unrest and civil conflict in the present. In addition, local communities can benefit greatly from these powerful new technologies if their contexts and use-case needs are kept in mind by policymakers and tech companies.
- AI serves to accelerate any pre-existing dynamics related to society's use of digital technologies. Therefore, there is a greater need than ever to double down on commitments to transparency, the right to privacy, and individuals' fundamental ownership over their own data.
- Existing frameworks and standards for AI governance are not always easily transferable to new contexts or rapid developments in the technology itself. This means that individual businesses, sectors, and communities will need to be equipped to establish apt governance of emerging AI technologies at the appropriate level (whether international, federal, state, or local) and in the relevant industry or domain. Material investments in technology infrastructure and access will need to be made to achieve this goal.

## **Conclusion**

At this critical juncture, the government must double down on its dedication to AI and the American research ecosystem. Given the rapidly changing nature of the technological field, it is imperative that the government craft a strategic plan that prioritizes U.S. competitiveness and longevity in the field.