PUBLIC SUBMISSION

Received: May 29, 2025
Tracking No. mba-9vp5-rx12
Comments Due: May 28, 2025 **Submission Type:** API

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-0351
Comment on FR Doc # 2025-07332

Submitter Information

Name: John Sweet

General Comment

See attached file(s)

Attachments

John Sweet U.S. AI RD Strategic Plan RFI

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Response to RFI 2025–07332:
Perspectives from an AI Innovation Strategist

I. Introduction

My name is John Sweet, and I write as an AI strategist and innovation ecosystem advisor with a long-horizon perspective shaped by a lifetime of work supporting innovation across R1 research-intensive universities. In this moment of strategic inflection for national AI policy, I offer this response not only to reflect institutional realities, but to advocate for the unique role that America's research universities must play in anchoring a trusted, open, and future-ready AI R&D ecosystem.

To lead in this era, the United States must invest not only in its existing advanced technologies and commercial capabilities, but also in the enduring capacities that R1 universities uniquely provide to the public: curiosity-driven research, open-access innovation ecosystems, foundational infrastructure, and the cultivation of a workforce fluent in both technical mastery and public service.

While I currently serve as Director of AI Administrative Strategy and Implementation at Oregon State University (OSU), I write here in my individual capacity. The views expressed are my own and do not necessarily represent those of OSU.

In this submission, I offer **one primary strategic recommendation**:

> **Substantially maintain and expand federal investment in science and engineering research at R1 universities as a cornerstone of national AI leadership.**

I present **three supporting rationales**, each grounded in experience, precedent, and policy logic. These are not merely arguments – they are structural imperatives for American resilience and innovation in the AI era.

Rationale One: R1 Universities Are the Engines of Disruptive Innovation

Universities tend to perform different research than industry, and this plays an important role in American competitiveness across the globe. In part because of universities' propensity to do basic research, and in part because they aren't inherently limited to market signals in the pursuit of science, universities tend to produce high quantities of *"**disruptive innovation**"* relative to industry. This has major implications for the future

competitiveness of the nation – because disruptive innovations are disproportionate forerunners of future industry. Let me explain what this means.

To understand why R1 universities are essential to national innovation strategy, it is helpful to begin with a foundational concept from the field of innovation theory. In the 1990s, Harvard Business School professor **Clayton Christensen** introduced a critical distinction between two types of innovation: sustaining and disruptive. Sustaining innovation improves performance along existing dimensions – it makes existing products faster, cheaper, or more efficient for established customers. Disruptive innovation, by contrast, introduces new dimensions of performance, enabling new types of products that aren't always appreciated at first. Disruptive innovations often seem irrelevant or inferior at first, but in many cases they can ultimately redefine entire markets.

This concept is vital to federal AI policy. Sustaining innovation tends to flourish in private industry, where R&D is shaped by customer needs, market fit, and quarterly return. Disruptive innovation, however, often struggles in these settings – not because it lacks technical merit, but because it fails to align with incumbent expectations or commercial incentives in the short term. This is precisely why R1 universities matter. They are structurally designed to explore emergent and unrecognized dimensions of value – even when those dimensions have no immediate market logic.

Consider the trajectory of artificial intelligence itself. The current global focus on generative AI emerged seemingly overnight, with the advent of transformer models and the rapid scaling of foundation models. But this "disruption" was decades in the making. For over 40 years, academic researchers worked steadily in machine learning, natural language processing, and cognitive architectures – often without strong corporate interest or clear commercial applications. It was only after the breakthrough represented by "Attention Is All You Need" in 2017 that these methods were reframed as market-relevant. This is a hallmark of disruptive innovation: it is often recognized as "disruptive" only after the fact, when the technological scaffolding is already in place.

R1 universities, supported by federal funding, provide the environment where that scaffolding can be built. Free from product cycles and investor pressure, these institutions can pursue long-horizon research into new models of intelligence, reasoning, and interface design. Areas like embodied AI, explainable systems, AI for scientific discovery, and energy-aware learning architectures are unlikely to be driven by market demand alone – yet they are foundational to the nation's strategic future.

For this reason, the federal government must treat R1 universities not simply as contributors to AI progress, but as primary engines of disruptive insight. The technologies and industries of tomorrow will not emerge from existing market logic. They will emerge from publicly supported environments designed to make space for what markets have not yet imagined.

Rationale Two: The Ultimate Technology Transfer Is the Student

The public often associates university technology transfer with patents and licensing deals. These are important, but they are not the most consequential product of the American R1 research system. The most powerful form of technology transfer our universities achieve each year are the **graduating classes of students** from our art, science, and engineering programs. I am speaking of the researchers, founders, engineers, policymakers, and innovators who leave campus not just with knowledge, but with the mindset, vision, and applied research experience that fuels the creation of entire industries.

This is not an abstraction – it is the historical pattern by which many of the world's most transformative technology companies began. Consider this brief sampling: At **Stanford University**, Scott McNealy, Andy Bechtolsheim, and Vinod Khosla – all graduate students – developed **Sun Microsystems**, which played a vital role in the development of the Internet. Almost two decades later, Bechtolsheim personally wrote one of the first seed checks for another Stanford-founded company: **Google** (now **Alphabet Inc.**), launched by PhD students Sergey Brin and Larry Page. In 1998, he invested $100,000 before the company was even legally incorporated – a catalytic act of belief in people and ideas that had been nurtured by federally supported university research ecosystems. Alphabet is now one of the world's foremost epicenters for the development and commercialization of artificial intelligence.

Another trajectory unfolded at **Harvard University**, where Mark Zuckerberg, Eduardo Saverin, Dustin Moskovitz, and others launched Facebook, in what would become the company now known as **Meta Platforms, Inc.** What started as a dorm-room experiment would go on to become one of the world's most powerful AI research organizations – a private laboratory now central to global work on open-source models, computer vision, and human–AI interaction. The company's origin story, like Google's, is anchored in an R1 university setting.

Palmer Luckey followed a different path, but one equally rooted in university innovation. Starting as a brilliant but low-level technician at the **University of Southern California**, Luckey worked in the Mixed Reality Lab (MxR) at the Institute for Creative Technologies – a federally funded program exploring virtual and augmented reality. Following that work, he developed the prototype for the **Oculus Rift**, which he launched on Kickstarter in 2012 and later sold to Facebook (now Meta) for $2 billion. His next company, **Anduril Industries**, now plays a key role in reshaping U.S. and allied defense strategy by fusing AI with next-generation hardware.

And finally, there is **Jensen Huang**, a graduate of **Oregon State University**, who has perhaps had more influence on the world's current AI inflection point than any other single individual. Huang founded **NVIDIA** in 1993 and helped pioneer the use of graphics processing units (GPUs) for massively parallel computation. Today, NVIDIA's platforms undergird nearly every foundation model in production, and Huang's strategic vision – now widely referred to as **"Huang's Law"** – is seen as a driving force in the

exponential advancement of AI hardware performance. He has credited OSU with inspiring his love of technology and shaping his intellectual formation. Without Huang, it is entirely possible this RFI would not have been issued – and without OSU, there may never have been the Jensen Huang that we now know as the CEO of NVIDIA.

The pattern I'm describing is unmistakable, with examples everywhere. The founders, researchers, and systems thinkers I mentioned above did not begin their journeys solely in industry. Their technological ambitions were shaped and influenced within the research universities that American public investment has long sustained. And while each individual story is unique, the mechanism is consistent: R1 universities provide **early access to infrastructure, mentorship, interdisciplinary experimentation, and the freedom to explore unconventional ideas** – precisely the elements that markets often overlook or undervalue.

This is why we must not waver in our commitment to support science, engineering, and the arts in our nation's premier research universities.

Rationale Three: Public Research Infrastructure Is a Strategic Asset

For the United States to lead in artificial intelligence over the long term, it must sustain and expand the infrastructure that makes AI research possible – not just talent pipelines and funding streams, but the shared platforms, environments, and governance systems that define responsible innovation at scale. This kind of infrastructure is not commercially attractive, but it is strategically vital. It is also the kind of infrastructure that only public institutions will build.

Today, **federal investment accounts for approximately 20 percent of total U.S. R&D spending**, according to the National Science Board. While industry has increased its R&D footprint over the past several decades, its investments tend to flow toward areas with immediate commercial application – and away from open-access platforms, reproducible science, or equity-centered governance. This is not a critique of industry. It is simply a recognition of structural incentives. What industry is inclined not to build, the federal government should – assuming we value sustaining American dominance in perpetual innovation.

Several national policy efforts have emerged in recent years to re-anchor public investment in AI infrastructure. The **National Artificial Intelligence Research Resource (NAIRR)** concept, championed by the White House Office of Science and Technology Policy and detailed in reports from the NAIRR Task Force, has proposed a federated model that would provide secure, equitable, and interoperable access to compute, datasets, software, and educational tools – all coordinated through publicly accountable mechanisms. The model is ambitious because it must be. No private firm, and no single agency, can deliver this infrastructure alone. It must be stewarded by institutions committed to public missions.

R1 universities are natural hosts for this mission. Many already serve as hubs for multi-institution collaboration, multi-agency funding, and multi-disciplinary experimentation. At Oregon State University, one such effort demonstrates what this future could look like. The **Huang Collaborative Innovation Complex (HCIC)** will support research into trustworthy, standards-based architectures for advanced systems, including AI-integrated platforms that interact with the physical world. The complex is funded in part by two major $50 million gifts to the OSU Foundation – one from alumni Jen-Hsun Huang (founder and CEO of NVIDIA) and Lori Mills Huang, and another from the Wayne and Gladys Valley Foundation – as well as significant public investment from the State of Oregon and additional university resources. Built on values of transparency, openness, and trust, this center would not exist without sustained support from both public and private partners.

These kinds of environments are not speculative. They are **the future-ready scaffolding for an AI ecosystem that prioritizes safety, inclusion, and continuity of leadership**. They are interoperable by design, reproducible by commitment, and governable by public trust. They cannot be replicated through proprietary frameworks alone. Nor will they emerge from short-term market cycles. If the United States wants to lead in AI on its own terms – in science, in education, in ethics, and in capability – then it must invest in the infrastructure that anchors those terms.

Conclusion: A National Commitment to Institutional Research and Innovation

Artificial intelligence will not simply shape the next era of global competition – it will shape the contours of public trust, national resilience, and scientific possibility for decades to come. In that context, the question before us is not only how the United States should invest in AI, but where it must invest in order to lead with vision, safety, and purpose.

R1 universities are central to that answer. They are the core infrastructure of sovereign capability. These institutions do not merely train the workforce. They generate the knowledge, talent, tools, and ethical grounding that make sovereign innovation possible in the first place. Their mission is not only to deliver answers, but to preserve the freedom to ask better questions.

Federal AI policy must not reduce our research institutions to production pipelines for corporate or governmental agendas. These universities are generative engines – structurally open, publicly accountable, and inherently future-oriented. They are where we build what does not yet exist, and where we prepare the minds that will meet the challenges we cannot yet see.

If the United States wants to lead in AI on its own terms – not by imitation, but by innovation – then it must invest in the institutions that make that kind of leadership possible.

Thank you for again your attention and for the opportunity to submit this response.

Recommended Citation for This RFI Response:

J. V. Sweet, *Perspectives from an AI Innovation Strategist: Response to RFI 2025–07332 on the National Artificial Intelligence Research and Development Strategic Plan*, submitted May 29, 2025.

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