Madame/Mr. Chair, Ranking Member

Thank you for the invitation to testify before the House Committee on Science, Space, and Technology. The opportunity to discuss the potential of artificial intelligence (AI) in driving scientific discoveries and enhancing federal science agencies' capabilities is both an honor and a privilege.

Artificial Intelligence stands at the forefront of a technological revolution. Its potential to transform research across a spectrum of scientific fields is unparalleled. However, realizing this potential requires a concerted effort in harnessing AI's capabilities while addressing the challenges it presents. Given these and related dynamics, it is crucial that we recognize the role of R-2 research institutions similar to Oakland University, especially for emerging technologies such as AI. These institutions are crucial for advancing AI research and workforce development. Although they have high research activity, they often spend less on research compared to their R-1 counterparts. Nonetheless, they play a key role in education, reaching more students across various locations. Moreover, these institutions are home to extraordinary researchers whose potential should be fully utilized in these efforts.

The collaboration between Oakland University and the automotive industry to train employees on cybersecurity, data science, and AI exemplifies the synergy between academia and industry. This partnership not only enhances workforce skills but also aligns with the industry's evolving needs. Federal agencies play a crucial role in the scalability and success of such programs. By providing funding and support, they can help expand these educational initiatives, making them more accessible to a broader audience. This not only enhances the workforce's competencies but also contributes to national competitiveness in the global technological arena.

To further this initiative, Oakland University has introduced stackable certificate programs targeted at both high school and adult learners. These programs are designed to offer flexible, progressive learning pathways that enable individuals to accumulate and build upon their skills over time, thereby fostering a versatile and adaptable workforce equipped to meet the evolving demands of the tech industry.

The National AI Research Resource (NAIRR) Task Force's report and the NAIRR Pilot Program at the National Science Foundation provide a roadmap for advancing AI research. These initiatives represent critical steps towards democratizing access to AI research resources, including computational power and large datasets. It is imperative that these resources are made accessible to a broad spectrum of researchers to foster innovation and diversity in AI-driven scientific research.

Federal agencies and departments such as National Science Foundation and the Department of Energy can be instrumental in bolstering AI initiatives at R-2 institutions through targeted funding, partnerships, and resource-sharing. By providing dedicated grants and programs, these agencies can enable R-2 institutions to enhance their research capabilities in AI. Furthermore, fostering collaborations between R-2 institutions and industry partners can bridge the gap between academic research and real-world applications, thus enriching the AI workforce.

Investing in AI education and training programs at R-2 institutions is equally important. Tailored curricula, internships, and mentorship opportunities can prepare a diverse and skilled workforce, equipped to meet the evolving demands of the AI industry.

Federal science agencies must play a pivotal role in fostering an environment that encourages AI-driven innovation. By collaborating with industry partners and ensuring equitable access to AI resources, we can drive significant advancements in scientific research and uphold the United States' position as a leader in AI and technology.

Today, I am here particularly to discuss the pivotal role of the National Science Foundation (NSF) in enhancing AI research and workforce development at universities, with a focus on R-2 research institutions like Oakland University. I also must take a moment to point out that OU is an R-2 that does not qualify for the EPSCOR program because we happen to reside in a state that has multiple R-1 institutions. Yet, R-2s of all kinds, whether EPSCOR or non-EPSCOR eligible play critical roles in both research and in workforce development. It is important that investments in AI and other critical technologies not be limited to R-1s and EPSCOR eligible R-2s, but to all R-1 and R-2 institutions. It is incumbent on both Congress and NSF to ensure that the research into how to use AI, as well as how to manage it, be disseminated across all of these institutions.

The NSF's commitment to nurturing and advancing AI research and education is evident through its comprehensive support encompassing research grants, collaborative opportunities, educational innovation, and infrastructure development. Key to NSF's strategy is the integration of AI into diverse curricula, preparing students for the multidisciplinary demands of the AI field. Programs such as the NSF Research Traineeship and the Graduate Research Fellowship Program exemplify this support, fostering collaboration between academia and industry and providing essential financial backing for emerging AI talent. Furthermore, NSF's focus on high-performance computing infrastructure facilitates cutting-edge AI research, enabling universities to tackle complex AI challenges. Critical to support for R-2 institutions has been NSF's recent effort to level the playing field for opportunities to obtain major equipment through the MRI program though waiving of the cost share requirement. R-2 participation in the development of AI will require continuation of this kind of effort to provide emerging research institutions to access to this essential infrastructure.

Crucially, NSF's initiatives promote diversity and inclusivity in AI, ensuring that the AI workforce reflects a broad spectrum of perspectives. This, along with the emphasis on public-private partnerships and the development of ethical guidelines for AI, positions NSF as a cornerstone in the United States' AI advancement.

We call upon the House Committee, the National Science Foundation (NSF), and other stakeholders to bolster support for AI initiatives, particularly at R-2 institutions. This includes increasing funding for AI research, facilitating the development of AI infrastructure, and promoting educational programs to prepare the next generation of AI experts. Enhanced federal support is crucial for maintaining America's leadership in AI and ensuring its positive impact on society.

In conclusion, the advancement of AI technology offers a promising avenue for scientific discovery and innovation. By recognizing the critical role of R-2 research institutions, fostering industry-academia collaborations, and addressing the challenges inherent in AI research, we can harness the full potential of AI. We urge the House Committee on Science, Space, and Technology to champion these initiatives, ensuring the United States remains at the forefront of this transformative field.

Thank you for the opportunity to highlight these critical initiatives. I look forward to discussing how we can further harness these opportunities for the benefit of our nation's scientific and technological advancement.