Chairman John Joyce, MD
Opening Statement
Subcommittee on Oversight and Investigations
"Examining Biosecurity at the Intersection of AI and Biology"
December 17, 2025

Good morning, and welcome to today's hearing entitled "Examining Biosecurity at the Intersection of AI and Biology."

The goal of today's hearing is to examine a rapidly evolving threat landscape at the intersection of artificial intelligence (AI) and biotechnology. This convergence promises extraordinary breakthroughs for medicine, public health, and scientific discovery. It also introduces profound new risks to the safety and security of the American people.

Our hearing today is about minimizing the risk of misuse to protect national security, while also maintaining public support of AI's ability to assist with miraculous things—like finding life-saving cures for diseases.

For decades, the United States has led the world in biotechnology. But what was once confined to specialized labs with highly trained scientists is now increasingly accessible far beyond traditional boundaries. Synthetic biology tools have become less expensive and more widely available. For example, a basic CRISPR gene-editing kit can be purchased online for under $300.

Advanced AI systems—like large language models, or LLMs, and biological design tools capable of generating, troubleshooting, and optimizing biological designs— are moving faster than our existing oversight frameworks were built to anticipate.

In recent years, studies have shown that cutting-edge AI models can walk users step-by-step through complex biological processes, including those relevant to developing or modifying dangerous pathogens. These tools can assist experts in breakthrough research, but they may also enable individuals with far less training to bypass barriers that once protected against accidental or intentional misuse. Some LLMs have even been shown to outperform PhD-level virologists on advanced troubleshooting tasks.

There is also early evidence that AI systems can design entirely new biological entities. A recent study demonstrated that an AI model generated multiple synthetic viruses—some with capabilities that researchers previously believed were impossible.

As a physician, I must acknowledge the extraordinary promise that AI-enabled biotechnology holds for patient care. AI is accelerating drug discovery, improving protein modeling, and enabling the development of therapies with unprecedented precision.

But the same technological advancements can also raise the stakes for biosecurity. These risks are not theoretical. National security experts warn that adversarial nations— including China, North Korea, Iran, Russia, and others—may seek to exploit AI-enabled biological design tools for malicious purposes. We must take those warnings seriously.

AI-enabled biotechnology presents issues that our current frameworks may not adequately account for. Existing government oversight systems—such as the Dual Use Research of Concern (DURC) policy—may not apply when an AI-designed organism is not identified as a Select Agent, not known to infect humans, or not developed with federal funds.

The Trump administration has taken steps to keep up with such advancements, but the federal government must continue to carefully assess whether our current safeguards and reporting systems are adequate in an era of rapidly advancing AI technology.

I want to thank our witnesses for being here today. Your expertise will help guide Congress as we confront this challenge.

With that, I now recognize the Ranking Member of our Subcommittee, Ms. Clarke, for 5 minutes for her opening statement.