Testimony of Senator Todd Young
Chair, National Security Commission on Emerging Biotechnology
Before the House Armed Services Committee
Subcommittee on Cyber, Information Technologies, and Innovation
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Thank you, Chairman Bacon and members of the subcommittee, for the opportunity to testify today. It's great to be with two of my fellow Commissioners: Ranking Member Khanna and Representative Bice.

Today, the United States is locked in a competition with China that will define the coming century. This competition is playing out not only through arms races, but also through the quest to dominate cutting-edge technology.

Biotechnology is the next phase in this competition.

Thanks to breakthroughs in artificial intelligence, we now have the tools to reprogram the building blocks of biological systems. These breakthroughs will advance every strategic sector, including defense, healthcare, agriculture, energy, and manufacturing.

Biotechnology can help us maintain military superiority, ensuring our warfighters continue to be the strongest fighting force on tomorrow's battlefields.

Biotechnology will reshore supply chains and revitalize our manufacturing sector, creating American jobs for American workers creating American products here in our country.

It will revolutionize agricultural production, enabling larger harvests with less water, land, and fertilizer.

This technology will also transform medicine, allowing doctors not just to treat disease but to cure it – or to wipe it out entirely.

Biotechnology will also shape the future of data storage and computing power, keeping America at the forefront of other critical technologies like AI. DNA is the most sophisticated data storage medium there is. If we converted the 0s and 1s of data into the genetic code of DNA, we could store all the data ever created in a container the size of a school bus. That capability would make our domestic companies unbeatable.

But if dominated and controlled by our adversaries, biotechnology could be turned against us. We have a classified annex that we are happy to explore in an appropriate setting, but for today's session, here is what we are facing.

An enemy power could exploit biological enhancements to outmaneuver and overwhelm the American warfighter.

Adversaries could silently attack our infrastructure and disrupt transportation and trade without being detected.

They could target our agricultural sector, killing off crops and livestock and leaving grocery shelves empty.

Adversaries could cut off our access to pharmaceutical supply chains.

Biotechnology is no longer constrained to the realm of scientific achievement. It is now an imperative for national security, economic power, and global influence.

Until recently, America's position as the biotechnology leader of the world was considered unassailable. But China has caught up.

China has made biotechnology a strategic priority for over 20 years. Under President Xi, the Chinese Communist Party has led an aggressive campaign to develop the most cutting-edge biotechnologies – and to translate those gains into military and economic power.

China's strategy hinges not only on its well-known theft of American technology but also on its significant investment in its domestic industry. China spends massively on research and development, supporting its hand-picked champions with immense subsidies and preferential treatment. It helps these state champions acquire the U.S. companies with the most promising technologies.

For example, the Chinese company BGI – which is a world leader in genomic sequencing – bought up U.S. intellectual property and used state subsidies to undercut competition. It is now one of the largest sequencing companies in the world – and it has opened its massive trove of biological data to the Communist Party.

China's strategy is now paying off. China is making breakthrough after breakthrough – including, this year, creating the first fully AI-generated prescription drug – and now dominates the biopharmaceutical supply chain. We know from experience how the Chinese economic playbook works: corner the supply chain, then choke it off in hopes of weakening America.

Economic warfare isn't the only tool the CCP is eyeing. China is investing heavily in gene editing, bionic robots, human-machine teaming, and biomanufacturing, and it is targeting these technologies for defense applications.

We have every reason to believe China will weaponize biotechnology. The government already deploys genomic surveillance to repress Uyghur Muslims, part of its extensive campaign of tech-enabled genocide. And it has the means to take its efforts to the next level: back in 2018, a Chinese scientist produced genetically modified babies, causing an extreme backlash around the world. But after a stint in jail, that scientist is back in the lab, and others have surely followed in his footsteps. The possibility of PLA "super soldiers" is no longer science fiction.

The biotechnology race is not over, but our window to act is shrinking.

Our Commission's primary recommendation is that the U.S. government should dedicate significant resources over the next five years to win the biotechnology race. Our strategy is two-fold: make America innovate faster, and slow China down.

To innovate faster, we need to harness America's tremendous strengths. Our private sector is the envy of the world, and our capital markets are four times larger than China's. But we must make it easier to get innovations out of the labs and into factories, and create a regulatory and business environment that enables us to commercialize and scale the best ideas. The U.S. government needs to prioritize biotechnology as a holistic field, including by mobilizing the private sector to unleash the power of American innovation.

At the same time, we need to slow China's progress. That starts with ending our blindness to China's clear ambitions for biotechnology. We must strictly defend our intellectual property and data against Chinese espionage and acquisition. Chinese state-owned enterprises are not ordinary competitors and should not be treated as such.

We have learned the cost of inaction. We let China catch up to us on semiconductor manufacturing, and allowed the Chinese to take our technology, industry, jobs, and leadership. The CHIPS and Science Act, which many of us here worked on, has helped return America to its position as the leading global hub for chips – but it was not easy, or inexpensive.

The recommendations in our report represent our best chance to ensure biotechnology remains a hallmark of American innovation.

Thank you, and I look forward to answering your questions.