

Biosecurity and Innovation in the Age of AI: Safeguarding the Future of U.S. Biotechnology

Recommendations for Congress

September 2025

1. Establish a national agency for bioscience and biotechnology governance.

Congress should create an agency that will develop more effective biosecurity and biotechnology governance policy and eliminate gaps in oversight of dual-use research.

Biosecurity and biosafety policies are dispersed across multiple federal agencies, creating inefficiencies and gaps in oversight that could increase risks and stifle innovation. New policies and technical solutions are needed to keep pace with rapid scientific advances, especially in synthetic biology and its convergence with AI.

- This agency should serve as an innovation hub to build biosecurity and biosafety into life science research, biotechnology, biomanufacturing activities, and funding. We agree with the National Security Commission on Emerging Biotechnology (NSCEB) that such an entity should be a key element of U.S. government investment in safeguarding the bioeconomy.
- This agency should be agile and independent, and it should establish innovative public-private partnerships so it can tackle rapidly emerging biosecurity challenges.
- The biosecurity and biosafety challenges within the agency's scope should span human, animal, and plant health, as all have significant commercial and defense implications.
- The agency should coordinate with the Center for AI Standards and Innovation (CAISI) on biosecurity and biosafety challenges related to AI.

2. Dedicate biotechnology funding to biosecurity and biosafety innovation.

Congress should require at least 1 to 2 percent of biotechnology investment by the U.S. government be allocated to fostering innovation in biosecurity and biosafety.

The NSCEB has recommended that the U.S. government dedicate a minimum of \$15 billion over the next five years to catalyze biotechnology innovation and attract additional private capital. Applying the 1 to 2 percent guideline, that is \$150 - \$300 million over five years to develop new technical solutions to build in biosecurity and biosafety by design.

3. Mandate pre-funding biosecurity reviews for federally funded research.

There are no agreed-upon best practices for pre-funding biosecurity reviews. As emerging technologies transform life science research and broaden access to advanced capabilities to engineer living systems, responsible innovation hinges on funding decisions that carefully weigh potential benefits against inherent risks.

Congress should require all agencies that sponsor or conduct dual-use bioscience research, including work involving dangerous infectious agents or toxins, to consider biosafety and biosecurity risks as part of their funding decision-making process.

Congress should designate or create a lead agency and direct that agency to set and administer biosecurity oversight best practices to apply across the federal government.

Congress should require all federally funded scientific researchers to purchase nucleic acids from providers that conduct robust customer and sequence screening.

The White House's recent AI Action Plan argued for establishing and maintaining a robust mechanism for screening nucleic acid sequences and customers. The Action Plan urges the creation of enforcement mechanisms to ensure sequence and customer screening and specifically notes that voluntary adherence will not be sufficient.

4. Apportion robust annual funding for the Center for AI Standards and Innovation (CAISI).

The U.S. government should work with the private sector to develop technical guardrails for biological AI tools and other emerging AIxBio capabilities based on a research agenda developed in consultation with the expert community. It should use funds for biosecurity and biosafety innovation to execute this work.

Congress should allocate at least \$8 million annually for the Department of Commerce's National Institute of Standards and Technology Center for AI Standards and Innovation (CAISI) to develop AIxBio safety standards, further stakeholder engagement, and promote best practices.