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INSIGHT

National Security Commission on Emerging Biotechnology: Final Report and Options for Congress

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Section 1091 of the National Defense Authorization Act for Fiscal Year 2022 (P.L. 117-81) established the National Security Commission on Emerging Biotechnology (NSCEB) as an independent commission in the legislative branch. The statutory purpose of NSCEB is to "carry out a review of advances in emerging biotechnology and associated technologies." Emerging biotechnologies comprise multiple scientific disciplines and technical developments that enable the engineering of biology that can be used across medicine, agriculture, and biomanufacturing (e.g., CRISPR). NSCEB is composed of 12 members, including two Members of the House of Representatives (Representative Bice and Representative Khanna) and two Members of the Senate (Senator Young and Senator Padilla).

NSCEB was required to "consider the methods, means, and investments necessary to advance and secure the development of biotechnology, biomanufacturing, and associated technologies by the United States to comprehensively address the national security and defense needs of the United States." In addition, NSCEB evaluated the strategic competition between the United States and the People's Republic of China (China) as it relates to biotechnology, including the implications if China leads the United States in biotechnology research and development (R&D), as well as in the commercialization of biotechnology-related innovations. NSCEB also examined the convergence of artificial intelligence (AI) and biotechnology, along with automation across the biotechnology R&D enterprise.

On April 8, 2025, NSCEB issued its final report. The report's authors describe how biotechnology could potentially revolutionize agricultural production in the United States, transform U.S. health care, and change the future of computing power. The report also discusses U.S. positioning in the convergence of AI and biotechnology. The report cautions that the United States is falling behind in key areas, including developing a federal strategy around biotechnology, providing adequate federal funding, commercializing products, fostering innovation, attracting top talent, and establishing partnerships with allies. The report cautions that

> China is quickly ascending to biotechnology dominance, having made biotechnology a strategic priority for 20 years. To remain competitive, the United States must take swift action in the next three years. Otherwise, we risk falling behind, a setback from which we may never recover.

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The NSCEB report recommends four areas of action for the federal government: (1) "promote U.S. biotechnology innovation," (2) "be the biotechnology partner of choice for the world," (3) "use national security tools to protect [the U.S.] innovation and industrial base in biotechnology," and (4) "work with the international community, including China where prudent, to develop best practices and standards for biosafety and biosecurity to prevent against misuse, whether deliberate or accidental."

The report lays out 49 specific recommendations for Congress situated around six priority areas. These priority areas, and selected high-level examples of the recommendations for each, are as follows:

1. **"Prioritize biotechnology at the national level."** Congress should establish a National Biotechnology Coordination Office within the Executive Office of the President, direct agencies across the executive branch to appoint senior staff to oversee biotechnology, and establish an Office of Global Competition Analysis.
2. **"Mobilize the private sector to get U.S. products to scale."** The United States should simplify biotechnology-related regulations, attempt to entice and scale private capital, scale domestic innovations, protect critical biotechnology infrastructure, and address unfair economic tactics from China.
3. **"Maximize the benefits of biotechnology and defense."** The U.S. government should define ethical principles for use of biotechnologies, deploy and incorporate biotechnology across the Department of Defense, and prevent adversaries from using or developing U.S. biotechnology that undermines national security.
4. **"Out-innovate our strategic competitors."** The United States should regard biological data as a strategic resource, ensure that China cannot obtain certain U.S. biological data, launch large-scale research challenges related to biotechnology, and review and develop biosafety and biosecurity tools to address potential harms resulting from biotechnology.
5. **"Build the biotechnology workforce of the future."** The United States should obtain necessary expertise and support related to biotechnology for federal agencies; support job creation across the United States, including training across all skill levels; and take steps to recruit and retain trustworthy foreign talent.
6. **"Mobilize the collective strengths of our allies and partners."** The U.S. government should expand biotechnology diplomacy, including commercial and regulatory diplomacy, to improve market access, boost aggregate demand for biotechnology products, and ensure that biotechnologies are not misused.

Additional details on the recommendations are presented in the report's recommendations section along with the appendices.

Congress might consider the recommendations presented by the NSCEB and examine whether congressional action is warranted, including oversight, direction for executive agencies, and appropriations. For example, the report recommends that the United States invest a minimum of $15 billion over the next five years on emerging biotechnology.

Following the release of the NSCEB report, the National Biotechnology Initiative Act (H.R. 2756 and S. 1387, 119th Congress) was introduced. If enacted, it would direct (1) the President to implement an initiative to promote national security, economic productivity, and competitiveness through advancement and coordination of federal activities relating to biotechnology and (2) establish a National Biotechnology Coordination Office within the Executive Office of the President. Other bills have been introduced in the 119th Congress that potentially align with aspects of the NSCEB report recommendations. For example, H.R. 2286, the American Genetic Privacy Act of 2025, would prohibit the disclosure of certain genetic information to China. If enacted, this policy could be interpreted as meeting aspects of Recommendation 4.2, "Block China from Obtaining Sensitive U.S. Biological Data." A separate bill introduced in the 119th

Congress, H.R. 1326, which passed the House on March 24, 2025, would require the Department of Energy and Department of Agriculture to establish an interagency agreement to carry out cross-cutting and collaborative R&D activities. If enacted, this directive could address aspects of Recommendation 1.1, which seeks to better coordinate actions on biotechnology across the federal government.

Should Congress want to implement the report's recommendations, it could also consider a broader strategic competitiveness context beyond the Department of Defense and China.

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