AI-Ready Bio-Data Standards Act of 2026

Overview

The **AI-Ready Bio-Data Standards Act of 2026** would direct the NIST Director to establish standards and frameworks to make biological data ready for use in AI models and create minimum requirements of qualified federally funded research that ensure resulting biological data are AI-ready.

Background

The National Security Commission on Emerging Biotechnology (NSCEB) assessed in April 2025 that the convergence of AI and biotechnology will unlock new innovations across every sector. But in failing to prioritize emerging biotechnology at the national level, the United States risks ceding its historic leadership to China—and with it, the benefits of the AIxBio revolution.

Just like how ChatGPT is trained on large amounts of text from the internet, the United States needs high-quality biological data to train AI models, yet America lacks standards for biological data. This lack of a common language severely limits the interoperability of existing biological data sets and causes researchers to spend more time painstakingly curating data rather than conducting innovative research. Meanwhile, China has already made biological data a strategic national priority for the last 20 years, exploiting publicly available biological data while closing off its own domestic datasets. Just this year, President Xi Jinping visited Xtalpi—a Chinese company focused on AI-driven drug discovery—highlighting China's ambitions to lead in this field.

The United States can strengthen its approach by building national infrastructure and frameworks for biological data, maximizing the ability to combine datasets that are greater than the sum of their parts. The resulting data could then be used to train advanced AI models, unlocking novel biological insights to drive U.S. innovation and economic growth.

House bill number pending

Sponsor:
Rep. Ro Khanna
(D-CA-17)

Original Co-Sponsor:
Rep. Jay Obernolte
(R-CA-23)

Senate bill number pending

Sponsor:
Sen. Todd Young
(R-IN)

Original Co-Sponsor:
Sen. Ben Ray Luján
(D-NM)

Congress established the National Security Commission on Emerging Biotechnology (NSCEB) to assess biotechnology's national security impact and recommend strategies to ensure American leadership.

Read the NSCEB's April 2025 report at https://www.biotech.senate.gov/final-report

Legislative Details

01 AI-Ready Biological Data Standards

Within two years of enacting the bill, NIST would establish formal definitions, standards, resources, and frameworks for what constitutes "AI-ready biological data."

02 Requirements for Qualified Federally Funded Research

NIST, in collaboration with other agencies, would define what federally funded research are subject to the AI-ready biological data requirement, taking into consideration the amount of funding awarded, the size and type of biological data, and the capability and expertise of the funding recipient.

03 Minimized Burden and Exemptions

NIST would take special consideration to minimize the burden of complying with AI-ready requirements on award recipients.

04 Test and Evaluation

NIST, in coordination with the National Science Foundation (NSF), would test and evaluate the AI-ready biological data standards to ensure they are effective, clear, and do not impose undue burden on funding recipients.

05 Advisory Board

The NIST Director would appoint a technical advisory group to incorporate private sector and academic perspectives into the establishment of AI-ready biological data standards, and work with academic journals on adopting such requirements.

06 Agency-Specific Data Policies

Once such standards and definitions are established, NIST would provide opportunites to coordinate with each relevant Federal agency to ensure that each agency adopts policies to make relevant biological datasets AI-ready.

07 External Enagagement

NIST would engage extensively with the private sector, academia, and federal agencies throughout the development of relevant standards to ensure the applicability, interoperability, and feasibility of AI-ready biological standards and funding requirements.

08 Reporting and Audit

NIST would submit an annual report to Congress on the implementation of AI-ready biological data standards, and the Government Accountability Office (GAO) would conduct an independent assessment of the program within five years of enacting the bill.

Interested in co-sponsoring this bill?

Please contact ideas@biotech.senate.gov