

NUCLEIC ACID STANDARDS FOR BIOSECURITY ACT

JULY 16, 2026.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. BABIN, from the Committee on Science, Space, and Technology, submitted the following

R E P O R T

[To accompany H.R. 3029]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, Space, and Technology, to whom was referred the bill (H.R. 3029) to amend the Research and Development, Competition, and Innovation Act to support nucleic acid screening, and for other purposes, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

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PURPOSE AND SUMMARY

H.R. 3029 takes a proactive and balanced approach to biosecurity in the biotechnology sector. It authorizes the National Institute of Standards and Technology (NIST) to coordinate a public-private consortium tasked with developing technical standards and best practices for screening custom synthetic nucleic acids.

BACKGROUND AND NEED FOR LEGISLATION

Biotechnology companies routinely produce custom-ordered nucleic acids for university, industry, nonprofit, and government researchers; although industry has historically worked to develop international standards related to screening molecules of concern, U.S.-led efforts are still required to further increase adoption of sufficiently rigorous protocols. Given the complex nature of how a nucleic acid, such as DNA, encodes a downstream biological product, the development of screening best practices and standards requires careful deliberation by stakeholders. These best practices must minimize risks while also preserving the ability of stakeholders to use nucleic acids for the R&D that drives major societal benefit as well as contributions to economic and national security. This challenge will grow significantly as AI systems improve in their capabilities to design complex sequences consisting of natural or engineered properties that evade traditional detection.

H.R. 3029 emphasizes a commonsense path forward: providing tools to mitigate risks while protecting American leadership in biotechnology, economic competitiveness, and national security. It promotes technical guidance that industry can actually use, and ensures standards evolve alongside cutting-edge scientific developments.

LEGISLATIVE HISTORY

H.R. 3029 was introduced on April 28, 2025, by Representative Salinas (D-OR) and is cosponsored by Representatives McCormick (R-GA), McBride (D-DE), and Riley (D-NY).

SECTION-BY-SECTION

Section 1. Short title

This section establishes the short title of the legislation as the “Nucleic Acid Standards for Biosecurity Act.”

Section 2. Supporting nucleic acid screening

This section authorizes the Director of the National Institute of Standards and Technology to advance best practice, guidelines, and technical standards for risk management associated with engineering biology and biomanufacturing. This section also authorizes the Director to carry out research measurement to support the development and improvement of best practices and technical standards for biosecurity measures related to nucleic acid synthesis. Additionally, this section authorizes a consortium of stakeholders, establishes reporting requirements, and authorizes appropriations of five million dollars for these activities.

RELATED COMMITTEE HEARINGS

Pursuant to clause 3(c)(6) of rule XIII, the following hearing was used to develop or consider H.R. 3029.

On February 5, 2025, the Committee on Science, Space, and Technology held a hearing entitled *The State of U.S. Science and Technology: Ensuring U.S. Global Leadership*. Members and witnesses discussed the current condition of the United States' science and technology enterprise, including biotechnology, and its role in the global innovation race.

Witnesses:

- The Honorable Heather Wilson, President, University of Texas El Paso, former Secretary of the United States Air Force
- The Honorable Walter Copan, Vice President for Research and Technology Transfer, Colorado School of Mines, former Director of the National Institute of Standards and Technology
- Dr. Sudip Parikh, Chief Executive Officer and Executive Publisher, American Association for the Advancement of Science
- Mr. Samuel Hammond, Chief Economist, Foundation for American Innovation

COMMITTEE CONSIDERATION

On April 29, 2025, the Committee on Science, Space, and Technology met to consider H.R. 3029.

Chairman Babin moved that the Committee favorably report the bill to the House of Representatives with the recommendation that the bill be approved. The motion was agreed to by voice vote, a quorum being present.

APPLICATION OF LAW TO THE LEGISLATIVE BRANCH

The Committee finds that H.R. 3029 does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act (Public Law 104–1).

STATEMENT OF OVERSIGHT FINDINGS AND RECOMMENDATIONS OF THE COMMITTEE

In compliance with clause 3(c)(1) of rule XIII and clause (2)(b)(1) of rule X, the Committee's oversight findings and recommendations are reflected in the descriptive portions of this report.

STATEMENT OF GENERAL PERFORMANCE GOALS AND OBJECTIVES

Pursuant to clause (3)(c)(4) of rule XIII, the goal of H.R. 3029 is to provide tools aimed at mitigating risks while protecting American leadership in biotechnology, economic competitiveness, and national security. This legislation promotes technical guidance that industry can actually use, and ensures standards evolve alongside cutting-edge scientific developments.

DUPLICATION OF FEDERAL PROGRAMS

Pursuant to clause 3(c)(5) of rule XIII, the Committee finds that no provision of H.R. 3029 establishes or reauthorizes a program of

the Federal Government known to be duplicative of another Federal program, including any program that was included in a report to Congress pursuant to section 21 of Public Law 111–139 or identified in the most recent Catalog of Federal Domestic Assistance.

FEDERAL ADVISORY COMMITTEE ACT

The Committee finds that the legislation does not establish or authorize the establishment of an advisory committee within the definition of section 5(b) of the Federal Advisory Committee Act.

UNFUNDED MANDATE STATEMENT

The Committee adopts as its own the estimate of Federal mandates prepared by the Director of the Congressional Budget Office pursuant to section 423 of the Unfunded Mandates Reform Act.

EARMARK IDENTIFICATION

Pursuant to clauses 9(e), 9(f), and 9(g) of rule XXI, the Committee finds that H.R. 3029 does not include any congressional earmarks, limited tax benefits, or limited tariff benefits.

COMMITTEE COST ESTIMATE

Pursuant to clause 3(d)(1) of rule XIII, the Committee adopts as its own the cost estimate prepared by the Director of the Congressional Budget Office pursuant to section 402 of the Congressional Budget Act of 1974.

NEW BUDGET AUTHORITY, ENTITLEMENT AUTHORITY, AND TAX EXPENDITURES

Pursuant to clause 3(c)(2) of rule XIII, the Committee finds that H.R. 3029 would result in no new or increased budget authority, entitlement authority, or tax expenditures or revenues.

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

With respect to the requirements of clause (3)(c)(3) of rule XIII and section 402 of the Congressional Budget Act of 1974, the Committee has received the following cost estimate for H.R. 3029 from the Director of the Congressional Budget Office:

H.R. 3029, Nucleic Acid Standards for Biosecurity Act			
As ordered reported by the House Committee on Science, Space, and Technology on April 29, 2025			
By Fiscal Year, Millions of Dollars	2025	2025-2030	2025-2035
Direct Spending (Outlays)	0	0	0
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	0	0
Spending Subject to Appropriation (Outlays)	0	24	25
Increases <i>net direct spending</i> in any of the four consecutive 10-year periods beginning in 2036?	No	Statutory pay-as-you-go procedures apply?	No
		Mandate Effects	
Increases <i>on-budget deficits</i> in any of the four consecutive 10-year periods beginning in 2036?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No

H.R. 3029 would authorize the appropriation of \$5 million annually from 2026 through 2030 for the National Institute of Standards and Technology (NIST) to develop best practices for managing the risks of engineering biology and biomanufacturing, and for biosecurity measures related to nucleic acid synthesis. That synthesis is the process of creating nucleic acids, such as DNA and RNA, within or outside of a cell. To conduct those activities, NIST would be required to meet with experts and other interested parties and report its findings to the Congress.

Based on historical spending patterns for similar activities, CBO estimates that implementing the bill would cost \$24 million over the 2025–2030 period and \$1 million after 2030, assuming appropriation of the authorized amounts.

The costs of the legislation, detailed in Table 1, fall within budget function 370 (commerce and housing credit).

TABLE 1.—ESTIMATED INCREASES IN SPENDING SUBJECT TO APPROPRIATION UNDER H.R. 3029

	By fiscal year, millions of dollars—						
	2025	2026	2027	2028	2029	2030	2025–2030
Authorization	0	5	5	5	5	5	25
Estimated Outlays	0	4	5	5	5	5	24

The CBO staff contact for this estimate is Kelly Durand. The estimate was reviewed by H. Samuel Papenfuss, Deputy Director of Budget Analysis.

PHILLIP L. SWAGEL,
Director, Congressional Budget Office.

CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3(e) of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italics, and existing law in which no change is proposed is shown in roman):

RESEARCH AND DEVELOPMENT, COMPETITION, AND
INNOVATION ACT

DIVISION B—RESEARCH AND
INNOVATION

* * * * *

TITLE II—NATIONAL INSTITUTE OF
STANDARDS AND TECHNOLOGY FOR
THE FUTURE

* * * * *

Subtitle B—Measurement Research

SEC. 10221. ENGINEERING BIOLOGY AND BIOMETROLOGY.

(a) IN GENERAL.—The Director, in coordination with the National Engineering Biology Research and Development Initiative established pursuant to title IV, shall—

(1) support basic measurement science and technology research for engineering biology, biomanufacturing, and biometrology to advance—

(A) measurement technologies to support foundational understanding of the mechanisms of conversion of DNA information into cellular function;

(B) technologies for measurement of such biomolecular components and related systems;

(C) new data tools, techniques, and processes to improve engineering biology, biomanufacturing, and biometrology research; **[and]**

(D) best practices, guidelines, and technical standards for risk management associated with engineering biology and biomanufacturing, including risks associated with the use of artificial intelligence; and

[(D)] *(E) other areas of measurement science and technology research determined by the Director to be critical to the development and deployment of engineering biology, biomanufacturing and biometrology;*

(2) support activities to inform and expand the development of measurements infrastructure needed to develop technical standards to establish interoperability and facilitate commercial development of biomolecular measurement technology and engineering biology applications;

(3) convene industry, institutions of higher education, non-profit organizations, Federal laboratories, and other Federal agencies engaged in engineering biology research and development to develop coordinated technical roadmaps for authoritative measurement of the molecular components of the cell;

(4) provide access to user facilities with advanced or unique equipment, services, materials, and other resources to indus-

try, institutions of higher education, nonprofit organizations, and government agencies to perform research and testing;

(5) establish or expand collaborative partnerships or consortia with other Federal agencies engaged in engineering biology research and development, institutions of higher education, Federal laboratories, and industry to advance engineering biology applications; and

(6) support graduate and postgraduate research and training in biometrology, biomanufacturing, and engineering biology.

(b) *NUCLEIC ACID SYNTHESIS SCREENING TOOLS AND STANDARDS.*—

(1) *IN GENERAL.*—*The Director, in consultation with heads of Federal agencies the Director considers appropriate, shall carry out measurement research to support the development and improvement of best practices and technical standards for biosecurity measures related to nucleic acid synthesis, including the following:*

(A) *Testing to improve the accuracy, efficacy, and reliability of screening for nucleic acid synthesis.*

(B) *Best practices, including security and access controls, for operational security and managing sequence-of-concern databases to support such screening.*

(C) *Technical implementation guidance to ensure such screening is effective and secure.*

(D) *Conformity-assessment best practices and technical standards.*

(E) *Methods to evaluate the impact and effectiveness of the implementation of subparagraphs (A) through (D).*

(2) *CONSORTIUM.*—*In carrying out this subsection, the Director shall convene a consortium of stakeholders, including industry, institutions of higher education, nonprofit organizations, and customers to carry out the following:*

(A) *Develop and periodically update consensus priorities and best practices, as appropriate, for synthetic nucleic acid procurement screening mechanisms.*

(B) *Develop roadmaps to inform the activities carried out under paragraph (1).*

(3) *REPORT.*—*Not later than 18 months after the first meeting of the consortium under paragraph (2), the Director shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report summarizing the findings of the consortium.*

(4) *AUTHORIZATION OF APPROPRIATIONS.*—*Of the funds authorized to be appropriated for the National Institute of Standards and Technology pursuant to this section for scientific and technical research and services laboratory activities, there is authorized to be appropriated \$5,000,000 for each of fiscal years 2026 through 2030 to carry out this subsection.*

[(b)] (c) *RULE OF CONSTRUCTION.*—*Nothing in this section may be construed to alter the policies, processes, or practices of individual Federal agencies in effect on the day before the date of the enactment of this Act relating to the conduct or support of biomedical research and advanced development, including the solicitation and review of extramural research proposals.*

[(c)] (d) CONTROLS.—In carrying out activities authorized by this section, the Secretary shall ensure proper security controls are in place to protect sensitive information, as appropriate.

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