119TH CONGRESS
1ST SESSION

S. 1387

To authorize the National Biotechnology Initiative, and for other purposes.

IN THE SENATE OF THE UNITED STATES

APRIL 9, 2025

Mr. YOUNG (for himself and Mr. PADILLA) introduced the following bill; which was read twice and referred to the Committee on Health, Education, Labor, and Pensions

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A BILL

To authorize the National Biotechnology Initiative, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''National Biotechnology Initiative Act of 2025''.

SEC. 2. DEFINITIONS.

In this Act:

(1) BIOLITERACY.—The term ''bioliteracy'' refers to the concept of imbuing people, personnel, or

teams with an understanding of and ability to engage with biology and biotechnology.

(2) BIOLOGICAL DATA.—The term ''biological data'' means the information, including associated descriptors, derived from the structure, function, or process of a biological system(s) that is either measured, collected, or aggregated for analysis.

(3) BIOMANUFACTURING.—The term ''biomanufacturing'' means the application of biotechnology to manufacturing.

(4) BIOTECHNOLOGY.—The term ''biotechnology'' means the application of science and engineering in the direct or indirect use of living organisms, or parts or products of living organisms, including modified forms.

(5) DIRECTOR OF THE NATIONAL BIOTECHNOLOGY COORDINATION OFFICE.—The term ''Director of the National Biotechnology Coordination Office'' means the individual appointed pursuant to section 4(b)(2)(A).

(6) INITIATIVE.—The term ''Initiative'' means the National Biotechnology Initiative established under section 3.

(7) INTERAGENCY COMMITTEE.—The term ''Interagency Committee'' means the interagency

committee designated pursuant to section 10403(a)(1).

(8) OFFICE.—The term ''Office'' means the National Biotechnology Coordination Office established under section 4(b).

(9) PARTICIPATING AGENCY.—The term ''participating agency'' means a department, office, or agency set forth under section 3(b).

SEC. 3. AUTHORIZATION OF THE NATIONAL BIOTECHNOLOGY INITIATIVE.

(a) INITIATIVE REQUIRED.—

(1) IN GENERAL.—The President, acting through the Executive Office of the President, shall implement an initiative to advance national security, economic productivity, and competitiveness through advancement and coordination of Federal activities relating to biotechnology.

(2) DESIGNATION.—The initiative implemented pursuant to paragraph (1) shall be known as the ''National Biotechnology Initiative''.

(b) PARTICIPATING AGENCIES.—The following shall be participants in the Initiative:

(1) The Department of Agriculture.

(2) The Department of Commerce.

(3) The Department of Defense.

(4) The Department of Energy.

(5) The Department of Health and Human Services.

(6) The Department of Homeland Security.

(7) The Department of the Interior.

(8) The Department of State.

(9) The Environmental Protection Agency.

(10) The National Aeronautics and Space Administration.

(11) The National Science Foundation.

(12) The Office of the Director of National Intelligence.

(13) The Office of the United States Trade Representative.

(14) Such other Federal departments and agencies as the Director of the National Biotechnology Coordination Office considers appropriate.

(c) ACTIVITIES.—Each head of a participating agency shall carry out the Initiative, including by carrying out the activities required by section 6 and by addressing and coordinating the following:

(1) Federal activities relating to biotechnology, including to create and maintain a national strategy on biotechnology.

(2) National security implications of emerging biotechnology.

(3) Sustained support for research and development that accelerates scientific understanding and technological innovation in biotechnology.

(4) Sustained support for biological data, databases, and related tools as a strategic national resource.

(5) Private sector translation and commercialization of products that are produced with biotechnology.

(6) Regulatory streamlining for products that are produced with biotechnology.

(7) Biosafety and biosecurity issues associated with emerging biotechnology.

(8) Development of a domestic workforce, including the Federal workforce, to advance biotechnology across the United States.

(9) Bioliteracy activities that provide clear, easy-to-find information for policymakers, innovators, and the public.

(10) International partnerships, including regulatory and commercial diplomacy.

(11) Such other activities relating to biotechnology as the Director of the National Bio-

technology Coordination Office and the Interagency Committee jointly determine are needed to advance national security, economic productivity, and competitiveness relating to biotechnology.

SEC. 4. INITIATIVE COORDINATION.

(a) INTERAGENCY COMMITTEE.—

(1) DESIGNATION.—Not later than 180 days after the date of the enactment of this Act, the President shall, acting through the Executive Office of the President, designate an interagency committee to coordinate activities of the Initiative.

(2) DUTIES.—Each member of the Interagency Committee shall—

(A) work with the Director of the National Biotechnology Coordination Office to oversee the planning, management, and coordination of the Initiative;

(B) ensure the department or agency of the member supports the Initiative through relevant activities set forth under section 6;

(C) keep the other members of the Interagency Committee apprised of the activities described in subparagraph (B); and

(D) communicate activities of the Interagency Committee with relevant components of the Department or agency of the member.

(3) MEMBERSHIP.—The Interagency Committee shall include 1 member at the Assistant Secretary level from each participating agency selected by the head of the participating agency.

(4) CO-CHAIRPERSONS.—

(A) IN GENERAL.—The Interagency Committee shall have 3 co-chairpersons, of whom—

(i) one co-chairperson shall be the Director of the National Biotechnology Coordination Office; and

(ii) two co-chairpersons shall be selected by the members of the Interagency Committee from among the members of the Interagency Committee.

(B) TERMS.—Each co-chairperson selected pursuant to subparagraph (A)(ii) shall serve a term of 2 years, except for the first term the Interagency Committee shall select one co-chairperson to serve a term of 3 years, such that subsequent terms are staggered.

(C) VACANCIES.—

(i) IN GENERAL.—A vacancy under this paragraph shall be filled in the manner in which the original appointment was made and shall be subject to any conditions that applied with respect to the original appointment.

(ii) FILLING UNEXPIRED TERM.—An individual chosen to fill a vacancy shall be appointed for the unexpired term of the co-chairperson replaced.

(D) QUORUM.—A majority of the members of the Interagency Committee shall constitute a quorum for the purposes of voting for co-chairpersons under clauses (i)(II) and (ii)(II) of subparagraph (A), with co-chairpersons selected by the member who receives the highest plurality of votes.

(E) LIMITATION.—A member of the Interagency Committee from a particular Federal department or agency may not serve consecutive terms as co-chairperson of the Interagency Committee.

(b) NATIONAL BIOTECHNOLOGY COORDINATION OFFICE.—

(1) ESTABLISHMENT OF NATIONAL BIOTECHNOLOGY COORDINATION OFFICE.—

(A) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the President shall establish an office in the Executive Office of the President to support the Initiative.

(B) DESIGNATION.—The office established pursuant to subparagraph (A) shall be known as the ''National Biotechnology Coordination Office''.

(2) DIRECTOR OF NATIONAL BIOTECHNOLOGY COORDINATION OFFICE.—

(A) APPOINTMENT.—Not later than 180 days after the date of the enactment of this Act, the President shall appoint an individual to serve as the Director of the National Biotechnology Coordination Office.

(B) DUTIES.—The duties of the Director of the National Biotechnology Coordination Office are as follows:

(i) To serve as the principal advisor to the President for biotechnology.

(ii) To administer the functions of the Office set forth under paragraph (3).

(C) AUTHORITIES.—In support of the Initiative, the Director may—

(i) advise the Director of the Office of Management and Budget for the purposes of tracking and adjusting agency spending relating to biotechnology, including to ensure that Federal efforts are complementary and not duplicative;

(ii) convene members of the Interagency Committee in order to advance and coordinate Federal activities relating to biotechnology;

(iii) coordinate Federal regulation of products that are produced with biotechnology;

(iv) select, appoint, employ, and fix the compensation of such officers and employees as are necessary and prescribe their duties;

(v) enter into and perform such contracts, leases, cooperative agreements, or other transactions, as appropriate, to the conduct of the work of the Office;

(vi) utilize, with their consent, the services, personnel, and facilities of other Federal agencies; and

(vii) accept voluntary and uncompensated services, notwithstanding the provisions of section 1342 of title 31, United States Code.

(3) FUNCTIONS OF THE OFFICE.—The functions of the Office shall be, in support of the Initiative, the following:

(A) PLANNING AND COORDINATION.—Functions relating to planning and coordination as follows:

(i) Working with the Interagency Committee to oversee the planning, management, and coordination of Federal activities relating to biotechnology.

(ii) Providing technical and administrative support to the Interagency Committee.

(iii) Assessing the landscape and gaps associated with the different components of the Initiative.

(iv) Coordinating a fellowship program in which Federal employees are de-

tailed to 1 or more Federal agencies to gain greater understanding of biotechnology activities outside of their home agency.

(v) Building and maintaining a coordinated website for Federal activities relating to biotechnology pursuant to subsection (c).

(vi) Coordinating development of an annual report under subsection (d) and a national strategy as required by subsection (e).

(vii) Conducting such other activities to support the Initiative as the Director considers appropriate.

(B) NATIONAL SECURITY.—Functions relating to national security as follows:

(i) Assessing and addressing the national security and economic security implications of emerging biotechnology.

(ii) Identifying and remedying any major needs or information gaps in current national security assessments and activities, including to conduct counterintel-

ligence efforts to fill gaps relating to biotechnology.

(iii) Providing coordination in addressing foreign investments and acquisition from adversarial countries.

(C) RESEARCH AND DEVELOPMENT.—Functions relating to research and development as follows:

(i) Coordinating sustained support for research and development that accelerates scientific understanding and technological innovation in biotechnology.

(ii) Facilitating joint agency solicitations for funding for individual grants, collaborative grants, and interdisciplinary research centers.

(iii) Developing and proposing focus areas or challenges for research funding meant to advance biotechnology, particularly relating to convergence with other technologies such as artificial intelligence.

(iv) Developing, standardizing, and deploying robust mechanisms for documenting and quantifying the outputs and economic benefits of biotechnology.

(D) DATA AND DATABASES.—Functions relating to data and databases as follows:

(i) Coordinating sustained support for biological data, databases, and related tools as a strategic national resource to advance human health and the understanding of animals, plants, microbes, and other organisms.

(ii) Recommending actions to integrate security into biological data access and international reciprocity agreements.

(iii) Coordinating frameworks for biological data standardization to create datasets that are interoperable and usable by advanced computation methods such as artificial intelligence.

(E) PRODUCT COMMERCIALIZATION.—Functions relating to product commercialization as follows:

(i) Strategizing and coordinating on private sector translation and commercialization of products that are produced with biotechnology.

(ii) Assisting in coordinating a national network of testbeds to enable scale-up of biotechnology research.

(F) REGULATORY STREAMLINING.—Functions relating to regulatory streamlining as follows:

(i) Coordinating the easing of regulatory burden for types of biotechnology products that have become well-understood by regulators, including products that could have occurred naturally or been developed with conventional means.

(ii) Negotiating interagency agreements that describe clear regulatory pathways for each type of biotechnology product, with information about timelines, decision points, expected data requirements, clear hand-offs between agencies, and other information deemed necessary by the Office to resolve regulatory gaps, overlaps, and ambiguities for biotechnology products.

(iii) Providing regular status updates to the Office of Management and Budget as to the development of clear regulatory

pathways, and in the event that the Office and the Interagency Committee cannot reach timely agreement on a clear regulatory pathway for any product type, assisting the Director of the Office of Management and Budget in carrying out paragraph (5).

(iv) Not later than 1 year after the date of the enactment of this Act, jointly with the Interagency Committee developing and making available to the public a plan for regulatory streamlining.

(G) BIOSAFETY AND BIOSECURITY.—Functions relating to biosafety and biosecurity as follows:

(i) Developing strategies and coordinating to address biosafety and biosecurity issues associated with emerging biotechnology.

(ii) Coordinating on assessment and mitigation of potential biosafety and biosecurity threats relating to biotechnology research, including through collaboration with regulatory agencies and industry.

(H) WORKFORCE DEVELOPMENT.—Functions relating to workforce development as follows:

(i) Coordinating and developing strategies to develop a domestic workforce for biotechnology.

(ii) Coordinating with appropriate agencies to establish a national biotechnology workforce framework to define biotechnology jobs and skills in public and private sectors.

(iii) Coordinating with appropriate agencies to conduct an interagency assessment of biotechnology workforce needs, and subsequently developing and providing training programs.

(I) BIOLITERACY.—Functions relating to bioliteracy as follows:

(i) Coordinating development of plain-language materials about biotechnology.

(ii) Providing central locations, including the website required by subsection (c), for clear, easy-to-find information about biotechnology for policymakers, innovators, and the public.

(J) INTERNATIONAL PARTNERSHIPS.—Functions relating to international partnerships as follows:

(i) Coordinating Federal regulatory and commercial diplomacy activities.

(ii) Assessing the current regulatory and commercial diplomacy activities carried out across the Federal Government, identifying gaps, and developing an outreach strategy to improve the regulatory landscape and market access for products of the United States.

(iii) Identifying non-regulatory solutions for trade and market access concerns (such as the use of identity preservation for certain agricultural biotechnology products) and working with relevant government agencies and stakeholders to implement solutions.

(K) OTHER.—Such other activities as the Director considers necessary to advance national security, economic productivity, and competitiveness related to biotechnology.

(4) ADMINISTRATIVE SUPPORT AND AUTHORIZATION OF APPROPRIATIONS.—

(A) ADMINISTRATIVE SUPPORT.—The Director of the National Science Foundation shall provide support for the administration and implementation of the Initiative, including—

(i) appointing and providing compensation for employees of the Office, without regard to any provision relating to appointment or compensation under title 5, United States Code, including—

(I) deputy directors as needed to address the responsibilities in paragraph (3), as determined necessary by the Director of the Office; and

(II) other appropriate employees, including experts in the science of biotechnology, biotechnology policy, regulatory policy, and science communication, legal counsel, and software designers and developers, as determined necessary by the Director of the Office;

(ii) fixing the compensation of employees of the Office in an amount that does not exceed the amount of annual com-

pensation (excluding expenses) specified in section 102 of title 3, United States Code;

(iii) detailing employees of the National Science Foundation to the Office and receiving the detail of employees from other agencies to the Office; and

(iv) assistance with other costs associated with running the Initiative, including physical space, other staff, and overhead support.

(B) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Director of the National Science Foundation to carry out subparagraph (A)—

(i) $22,000,000 for fiscal year 2026;

(ii) $35,000,000 for fiscal year 2027;

(iii) $25,000,000 for fiscal year 2028;

(iv) $25,000,000 for fiscal year 2029; and

(v) $25,000,000 for fiscal year 2030.

(5) REGULATORY STREAMLINING BY OFFICE OF MANAGEMENT AND BUDGET.—In the event that the Office and the Interagency Committee cannot reach timely agreement on a clear regulatory pathway for a product type, as described in paragraph

(3)(F)(iii), the Director of the Office of Management and Budget shall—

(A) identify overlaps, gaps, or ambiguities in the regulation for such product type;

(B) negotiate an interagency agreement that describes a clear regulatory pathway for such product type, with information about timelines, decision points, expected data requirements, clear hand-offs between agencies, and other information deemed necessary by the Office of Management and Budget to resolve regulatory gaps, overlaps, and ambiguities; and

(C) recommend and oversee rulemaking or changes to guidance as needed to implement clear regulatory pathways.

(6) WIND-DOWN.—

(A) IN GENERAL.—The Office shall wind-down its activities on the date that is 20 years after the date of the enactment of this Act, and transition to serving as an executive secretariat for the Initiative.

(B) WIND-DOWN ACTIVITIES.—The activities specified in this clause are as follows:

(i) The transfer of authorities, requirements, resources, personnel, and obli-

gations of the Office to the fullest extent possible to the Interagency Committee and such elements of the Federal Government as the Director and the Interagency Committee consider appropriate.

(ii) The Office shall maintain authorities, requirements, resources, personnel, and obligations necessary to serve as the executive secretariat for the Initiative, including to continue the coordination in subsection (b)(3)(A), the website in subsection (c), and any other activities that the Director and the Interagency Committee consider appropriate.

(C) TREATMENT OF TRANSFERRED FUNCTIONS.—Commencing on the date on which the Office is terminated under subparagraph (A), any reference to a requirement or an authority of the Office that has been transferred to the Interagency Committee or an element of the Federal Government shall be treated as a reference to the Interagency Committee or the element of the Federal Government to which such requirement or authority was transferred pursuant to subparagraph (B).

(c) WEBSITE.—

(1) IN GENERAL.—Not later than 540 days after the date of the enactment of this Act, the Director of the National Biotechnology Coordination Office and the Interagency Committee shall jointly develop and publish for the public a single, coordinated Federal website for biotechnology that adheres to best practices for website design, development, and maintenance.

(2) CONTENTS.—The website developed and published pursuant to paragraph (1) shall include the following:

(A) A dashboard of Federal Government activities relating to biotechnology, including information about open funding opportunities.

(B) Plain-language information about biotechnology, including information for policymakers, innovators, trading partners, and the public.

(C) A mechanism for stakeholders to ask a question and receive a single, coordinated response.

(D) Mechanisms, which may be populated over time, to provide consolidated information about biotechnology product regulation, focus-

ing on products that are regulated by more than 1 Federal agency, with content that includes the following:

(i) A repository of interagency agreements that describe clear regulatory pathways, with links to relevant regulations and guidance documents for each type of biotechnology product.

(ii) A repository of regulatory decision documents for biotechnology products.

(iii) A digital portal that allows submission of a single application and information sharing between Federal agencies.

(3) UPDATES.—The Director and the Interagency Committee shall jointly update the website required by paragraph (1) periodically.

(d) ANNUAL REPORTS.—

(1) IN GENERAL.—Not later than 1 year after the date of the enactment of this Act, and not less frequently than once each year thereafter, except in years in which a national strategy for biotechnology is required under subsection (e), the Director of National Biotechnology Coordination Office and the Interagency Committee shall jointly submit to the Committee on Commerce, Science, and Transpor-

tation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives an annual report on the Initiative.

(2) CONTENTS.—Each annual report submitted pursuant to paragraph (1) shall include, for the period covered by the report, the following:

(A) An inventory and accounting of Federal Government activities and spending in support of the Initiative.

(B) Actions that the Director and the Interagency Committee plan to take in support of the Initiative in the next fiscal year.

(e) NATIONAL STRATEGY.—

(1) IN GENERAL.—Not later than 2 years after the date of the enactment of this Act, and not less frequently than once every 5 years thereafter, the Director of National Biotechnology Coordination Office and the Interagency Committee shall jointly make available to the public and 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 comprehensive national strategy for biotechnology.

(2) ELEMENTS.—Each national strategy made available and submitted pursuant to paragraph (1) shall cover the following:

(A) Actions, goals, and priorities to advance the Initiative, including how each Federal department and agency will address the requirements of section 6 and how each Federal department and agency will integrate biotechnology into their own strategies.

(B) Activities that are an urgent priority to advance biotechnology in the United States but not currently being conducted by Federal agencies, with an estimated 5-year budget for those activities.

(C) Recommendations for legislative or administrative action to advance biotechnology in the United States.

(D) An inventory of all Federal Government databases with biological data with an assessment that identifies opportunities—

(i) to improve the utility of such databases, in a manner that does not compromise national security or the privacy and security of information within such databases; and

(ii) to inform investment in such databases as critical infrastructure for the biotechnology research enterprise.

(E) An assessment of United States competitiveness in biotechnology relative to peer countries, including—

(i) contributions of biotechnology to United States economic growth and other societal indicators;

(ii) contributions of biotechnology to economic growth in other countries, especially peer-competitors; and

(iii) current barriers to commercialization of biotechnology products, processes, and tools in the United States.

(F) A national biological data strategy to ensure biotechnology research fully leverages plant, animal, and microbe biodiversity, as appropriate and in a manner that does not compromise economic competitiveness, national security, or the privacy or security of human genetic information.

(G) The information that is required as a part of the annual report required by subsection (d).

(f) COMPTROLLER GENERAL REVIEW.—The Comptroller General of the United States shall—

(1) not later than 3 years after the date of the enactment of this Act, begin a review to assess the efficacy of interagency coordination and fulfillment of the activities conducted by the Office and the Interagency Committee under the Initiative;

(2) not later than 3.5 years after the date of the enactment of this Act, provide Congress a briefing on the initial findings of the Comptroller General with respect to the activities described in paragraph (1);

(3) not later than 4 years after the date of the enactment of this Act, 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 with recommendations to improve the Initiative; and

(4) repeat the process outlined in paragraphs (1), (2), and (3) every 5 years thereafter until the date that is 20 years after the date of the enactment of this Act.

SEC. 5. CONVENING OF EXPERTS ON BIOTECHNOLOGY RESEARCH AND DEVELOPMENT.

(a) IN GENERAL.—The Director of the National Biotechnology Coordination Office may, in consultation with the Interagency Committee, convene experts to assess and inform the activities of the Initiative in a time and manner as deemed appropriate and necessary by the Director.

(b) APPLICATION OF FEDERAL ADVISORY COMMITTEE ACT.—Section 1013 of title 5, United States Code, shall not apply to the convening of experts under this section.

SEC. 6. AGENCY ACTIVITIES.

Each head of a participating agency shall, in support of the Initiative and in coordination with the Office, conduct or support, in a manner consistent with the duties and mission of the respective department or agency, the following activities to advance biotechnology across defense, human health, food and agriculture, energy, space, mining, environmental stewardship, and other sectors:

(1) PLANNING AND COORDINATION.—Activities relating to planning and coordination as follows:

(A) Designating an individual within the respective department or agency at the level of Assistant Secretary to lead the biotechnology activities for the department or agency, if such person is not already designated, and to serve

as the department or agency liaison to the Initiative and member of the Interagency Committee.

(B) Designating individuals within the respective department or agency to serve as members of subcommittees that may be established by the Interagency Committee.

(C) Coordinating activities of the participating agency that relate to biotechnology with the Office.

(D) Implementing applicable portions of the national strategy required by section 4(e) in ways that improve government efficiency and reduce redundancy.

(E) Providing insight and information about biotechnology to the heads of other Federal departments and agencies and to Congress.

(F) Leveraging horizon scanning and technology foresight to ensure United States leadership in future biotechnology advancements.

(2) NATIONAL SECURITY.—Activities relating to national security as follows:

(A) Analyzing ongoing and emerging threats from foreign adversary development and application of biotechnology, including foreign

investments and acquisition of United States capabilities, technologies, and biological data.

(B) Providing expertise to address foreign investments and acquisition from adversarial countries.

(C) Analyzing and identifying actions to mitigate supply chain risks posed by foreign adversary involvement in such supply chains.

(D) Coordinating and ensuring information sharing with foreign service officers regarding threats to and opportunities for biotechnology.

(E) Coordinating with industry on threat information sharing, vulnerability disclosure, and risk mitigation for cybersecurity and infrastructure risks, including risks to biological data and related physical and digital infrastructure and devices.

(F) Improving cybersecurity and stress-testing related to sensitive biological data and to biotechnology infrastructure, tools, and instrumentation.

(3) RESEARCH AND DEVELOPMENT.—Activities relating to research and development as follows:

(A) Providing sustained support for research and development that accelerates sci-

entific understanding and technological innovation in biotechnology.

(B) Conducting joint agency solicitation and selection of applications for funding of individual grants, collaborative grants, and interdisciplinary research centers.

(C) Developing instrumentation, equipment, and infrastructure for biotechnology, including to optimize, standardize, scale, and deliver new products and solutions.

(D) Developing standard reference materials and measurements to promote interoperability between new component technologies and processes for biotechnology discovery, innovation, and production processes.

(E) Increasing understanding of the risks and benefits of biotechnology, including how products developed with biotechnology can affect or protect the environment.

(F) Increasing understanding of the ethical, legal, and social implications of biotechnology, including research that contributes to public understanding of biotechnology.

(4) DATA AND DATABASES.—Activities relating to data and databases as follows:

(A) Providing sustained support for biological data, databases, and related tools to advance human health and the understanding of animals, plants, microbes, and other organisms.

(B) Establishing, curating, and maintaining genomics, epigenomics, and other relevant omics and biological data and databases, such as through a centralized biological data access hub with appropriate protections for the privacy or security of information within such databases.

(C) Developing standards for biological data and databases, including for curation, interoperability, and protection of privacy and security.

(D) Developing computational tools, including artificial intelligence tools, to accelerate research and innovation using biological data and databases.

(E) Developing tools that use omics and associated bioinformatic sciences to improve monitoring, management, assessments, and forecasts.

(5) PRODUCT COMMERCIALIZATION.—Activities relating to product commercialization as follows:

(A) Providing sustained support for private sector translation and commercialization of products that are produced with biotechnology, including biomanufacturing.

(B) Utilizing existing Federal programs, such as the Small Business Innovation Research Program and the Small Business Technology Transfer Program (as described in section 9 of the Small Business Act (15 U.S.C. 638)), in support of biotechnology, including to support proof of concept activities, and the formation of startup companies.

(C) Accelerating the translation, scale-up, and commercialization of new products, processes, and technologies in order to transfer fundamental research results to industry and accelerate commercial applications.

(D) Facilitating public-private partnerships in biotechnology research and development that address and reduce barriers to scaling up biotechnology innovations.

(E) Supporting a national network of testbeds based on open standards, interfaces, and processes, including by repurposing existing

facilities, to enable scale-up of biotechnology research.

(F) Providing incentives for retooling of industrial sites across the United States to foster a pivot to biotechnology.

(G) Providing access to user facilities with advanced or unique equipment, services, materials, and other resources, including secure access to high-performance computing, as appropriate, to industry, institutions of higher education, nonprofit organizations, and government agencies to perform research and testing.

(6) REGULATORY STREAMLINING.—Activities relating to regulatory streamlining as follows:

(A) Conducting and coordinating regulatory streamlining for products that are produced with biotechnology.

(B) Easing regulatory burden for types of biotechnology products that have become well-understood by regulators, including products that could have occurred naturally or been developed with conventional means.

(C) Establishing clear regulatory pathways for biotechnology products, including through

short-term regulatory trials to establish new or update existing regulatory pathways.

(D) Ensuring consistent, risk-proportionate regulation of biotechnology research and development activities, including for release of products or organisms into the environment.

(E) Conducting horizon scanning to identify novel biotechnology products and develop clear regulatory pathways for such products.

(7) BIOSAFETY AND BIOSECURITY.—Activities relating to biosafety and biosecurity as follows:

(A) Addressing biosafety, biosecurity, and responsible biology issues associated with emerging biotechnology.

(B) Developing an applied management plan to address biological risks of biotechnology research.

(C) Creating an adaptable, evidence-based framework to respond to emerging biosecurity challenges that considers and informs updates of existing biosecurity governance policies, guidance, and directives and identifies necessary safeguards for new products, processes, and systems of biotechnology.

(D) Conducting outreach to industry, institutions of higher education, nonprofit organizations, and government agencies to increase awareness of biosafety and biosecurity implications of biotechnology research.

(8) WORKFORCE DEVELOPMENT.—Activities relating to workforce development as follows:

(A) Providing sustained support for development of a domestic biotechnology workforce.

(B) Ensuring that Congress and Federal departments and agencies have access to necessary expertise across national security and emerging biotechnology issues.

(C) Supporting Federal biotechnology education and workforce training programs and initiatives for students and workers.

(D) Supporting education and training of undergraduate and graduate students in biotechnology, including biomanufacturing, bioprocess engineering, and computational science applied to biotechnology.

(E) Connecting researchers, graduate students, and postdoctoral fellows with entrepreneurship education and training opportunities, including to award grants, on a competitive

basis, that enable institutions to support graduate students, and postdoctoral fellows who perform some of their biotechnology research in an industry setting.

(F) Supporting professional development, continuing education, and skills development (such as re-skilling and upskilling) for veterans, industry workers, and technology professionals.

(G) Supporting curriculum development and research experiences for secondary, undergraduate, and graduate students in biotechnology, including through support for graduate fellowships and traineeships in biotechnology to ensure that students are receiving up-to-date training that keeps pace with biotechnologies as they evolve and meets industry workforce needs so students are qualified for employment.

(H) Supporting curriculum development and research experiences in biotechnology and associated data and information sciences across the Federal workforce, including for the military education system.

(9) BIOLITERACY.—Activities relating to biliteracy as follows:

(A) Providing clear, easy-to-find information about biotechnology for policymakers, innovators, and the public.

(B) Supporting greater evidence-based public discourse about the benefits and risks of biotechnology.

(C) Ensuring that public input and outreach are integrated into Federal biotechnology activities through regular and ongoing public discussions such as workshops, consensus conferences, and educational events, as may be appropriate.

(10) INTERNATIONAL PARTNERSHIPS.—Activities relating to international partnerships as follows:

(A) Developing an internal international engagement strategy for the respective department or agency, in cooperation with relevant interagency partners.

(B) Strengthening and developing bilateral and multilateral relationships to advance United States priorities in biotechnology abroad.

(C) Providing sustained support and coordinating interagency activities in international biotechnology outreach and engagement with allies and partners.

(D) Engaging in coordinated regulatory and commercial diplomacy to better align biotechnology regulations and expand market access for biotechnology products.

(E) Supporting the development of international standards and norms for biotechnology, including to define shared values and interests.

(F) Supporting biological data-sharing agreements with partner countries.

(G) Supporting biotechnology talent exchanges with partner countries, including through fellowships, work authorization programs, and other mechanisms.

(H) Supporting harmonization of multilateral export controls to protect against misuse of biotechnology.

(11) OTHER.—Such other activities as the head of the participating agency determines may be needed to advance national security, economic productivity, and competitiveness relating to biotechnology.

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