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

(f) The term ''biomass'' means any material of biological origin that is available on a renewable or recurring basis. Examples of biomass include plants, trees, algae, and waste material such as crop residue, wood waste, animal waste and byproducts, food waste, and yard waste.

(g) The term ''biobased product'' has the meaning given that term in 7 U.S.C. 8101(4).

(h) The term ''bioenergy'' means energy derived in whole or in significant part from biomass.

(i) The term ''multiomic information'' refers to combined information derived from data, analysis, and interpretation of multiple omics measurement technologies to identify or analyze the roles, relationships, and functions of biomolecules (including nucleic acids, proteins, and metabolites) that make up a cell or cellular system. Omics are disciplines in biology that include genomics, transcriptomics, proteomics, and metabolomics.

(j) The term ''key R&D areas'' includes fundamental R&D of emerging biotechnologies, including engineering biology; predictive engineering of complex biological systems, including the designing, building, testing, and modeling of entire living cells, cell components, or cellular systems; quantitative and theory-driven multidisciplinary research to maximize convergence with other enabling technologies; and regulatory science, including the development of new information, criteria, tools, models, and approaches to inform and assist regulatory decision-making. These R&D priorities should be coupled with advances in predictive modeling, data analytics, artificial intelligence, bioinformatics, high-performance and other advanced computing systems, metrology and data-driven standards, and other non-life science enabling technologies.

(k) The terms ''equity'' and ''underserved communities'' have the meanings given those terms by sections 2(a) and 2(b) of Executive Order 13985 [5 U.S.C. 601 note].

(l) The term ''Tribal Colleges and Universities'' has the meaning given that term by section 5(e) of Executive Order 14049 of October 11, 2021 (White House Initiative on Advancing Educational Equity, Excellence, and Economic Opportunity for Native Americans and Strengthening Tribal Colleges and Universities) [20 U.S.C. 7401 note].

(m) The term ''Historically Black Colleges and Universities'' has the meaning given that term by section 4(b) of Executive Order 14041 of September 3, 2021 (White House Initiative on Advancing Educational Equity, Excellence, and Economic Opportunity Through Historically Black Colleges and Universities) [20 U.S.C. 1060 note].

(n) The term ''minority serving institution'' has the meaning given that term by 38 U.S.C. 3698(f)(4).

(o) The term ''foreign adversary'' has the meaning given that term by section 3(b) of Executive Order 14034 of June 9, 2021 (Protecting Americans' Sensitive Data From Foreign Adversaries) [listed in a table under 50 U.S.C. 1701].

(p) The term ''life sciences'' means all sciences that study or use living organisms, viruses, or their products, including all disciplines of biology and all applications of the biological sciences (including biotechnology, genomics, proteomics, bioinformatics, and pharmaceutical and biomedical research and techniques), but excluding scientific studies associated with radioactive materials or toxic chemicals that are not of biological origin or synthetic analogues of toxins.

SEC. 14. *General Provisions*. (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of OMB relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

J.R. BIDEN, JR.

§ 19132. National Engineering Biology Research and Development Initiative

(a) In general

The President, acting through the Office of Science and Technology Policy, shall implement a National Engineering Biology Research and Development Initiative to advance societal well-being, national security, sustainability, and economic productivity and competitiveness through the following:

(1) Advancing areas of research at the intersection of the biological, physical, chemical, data, and computational and information sciences and engineering to accelerate scientific understanding and technological innovation in engineering biology.

(2) Advancing areas of biomanufacturing research to optimize, standardize, scale, and deliver new products and solutions.

(3) Supporting social and behavioral sciences and economics research that advances the field of engineering biology and contributes to the development and public understanding of new products, processes, and technologies.

(4) Improving the understanding of engineering biology of the scientific and lay public and supporting greater evidence-based public discourse about its benefits and risks.

(5) Supporting research relating to the risks and benefits of engineering biology, including under subsection (d).

(6) Supporting the development of novel tools and technologies to accelerate scientific understanding and technological innovation in engineering biology.

(7) Expanding the number of researchers, educators, and students and a retooled workforce with engineering biology training, including from traditionally underrepresented and underserved populations.

(8) Accelerating the translation and commercialization of engineering biology and biomanufacturing research and development by the private sector.

(9) Improving the interagency planning and coordination of Federal Government activities related to engineering biology.

(b) Initiative activities

The activities of the Initiative shall include the following:

(1) Sustained support for engineering biology research and development through the following:

(A) Grants to fund the work of individual investigators and teams of investigators, including interdisciplinary teams.

(B) Projects funded under joint solicitations by a collaboration of not fewer than two agencies participating in the Initiative.

(C) Interdisciplinary research centers that are organized to investigate basic research questions, carry out technology development and demonstration activities, and in-

crease understanding of how to scale up engineering biology processes, including biomanufacturing.

(2) Sustained support for databases and related tools, including the following:

(A) Support for the establishment, curation, and maintenance of curated genomics, epigenomics, and other relevant omics databases, including plant, animal, and microbial databases, that are available to researchers to carry out engineering biology research in a manner that does not compromise national security or the privacy or security of information within such databases.

(B) Development of standards for such databases, including for curation, interoperability, and protection of privacy and security.

(C) Support for the development of computational tools, including artificial intelligence tools, that can accelerate research and innovation using such databases.

(D) An inventory and assessment of all Federal government omics databases to identify opportunities to improve the utility of such databases, as appropriate and in a manner that does not compromise national security or the privacy and security of information within such databases, and inform investment in such databases as critical infrastructure for the engineering biology research enterprise.

(3) Sustained support for the development, optimization, and validation of novel tools and technologies to enable the dynamic study of molecular processes in situ, including through the following:

(A) Research conducted at Federal laboratories.

(B) Grants to fund the work of investigators at institutions of higher education and other nonprofit research institutions.

(C) Incentivized development of retooled industrial sites across the country that foster a pivot to modernized engineering biology initiatives.

(D) Awards under the Small Business Innovation Research Program and the Small Business Technology Transfer Program (as described in section 638 of title 15).

(4) Support for education and training of undergraduate and graduate students in engineering biology, biomanufacturing, bioprocess engineering, and computational science applied to engineering biology and in the related ethical, legal, environmental, safety, security, and other societal domains.

(5) Support for a national network of testbeds based on open standards, interfaces, and processes, including by repurposing existing facilities such as those specified in paragraph (3)(C), that would enable scale up of laboratory engineering biology research.

(6) Activities to develop robust mechanisms for documenting and quantifying the outputs and economic benefits of engineering biology.

(7) Activities to accelerate the translation and commercialization of new products, processes, and technologies by carrying out the following:

(A) Identifying precompetitive research opportunities.

(B) Facilitating public-private partnerships in engineering biology research and development, including to address barriers to scaling up innovations in engineering biology.

(C) Connecting researchers, graduate students, and postdoctoral fellows with entrepreneurship education and training opportunities.

(D) Supporting proof of concept activities and the formation of startup companies including through programs such as the Small Business Innovation Research Program and the Small Business Technology Transfer Program.

(c) Expanding participation

The Initiative shall include, to the maximum extent practicable, outreach to primarily undergraduate and historically Black colleges and universities, Tribal Colleges or Universities, and minority-serving institutions about Initiative opportunities, and shall encourage the development of research collaborations between research-intensive universities and primarily undergraduate and historically Black colleges and universities, Tribal Colleges or Universities, and minority-serving institutions.

(d) Ethical, legal, environmental, safety, security, and societal issues

Initiative activities shall take into account ethical, legal, environmental, safety, security, and other appropriate societal issues by carrying out the following:

(1) Supporting research, including in the social sciences, and other activities addressing ethical, legal, environmental, and other appropriate societal issues related to engineering biology, including integrating research on such topics with the research and development in engineering biology, and encouraging the dissemination of the results of such research, including through interdisciplinary engineering biology research centers described in subsection (b)(1)(C).

(2) Supporting research and other activities related to the safety and security implications of engineering biology, including outreach to increase awareness among Federal researchers and federally-funded researchers at institutions of higher education about potential safety and security implications of engineering biology research, as appropriate.

(3) Ensuring that input from Federal and non-Federal experts on the ethical, legal, environmental, safety, security, and other appropriate societal issues related to engineering biology is integrated into the Initiative.

(4) Ensuring, through the agencies and departments that participate in the Initiative, that public input and outreach are integrated into the Initiative by the convening of regular and ongoing public discussions through mechanisms such as workshops, consensus conferences, and educational events, as appropriate.

(5) Complying with all applicable provisions of Federal law.

(Pub. L. 117–167, div. B, title IV, § 10402, Aug. 9, 2022, 136 Stat. 1599.)

§ 19133. Initiative coordination

(a) Interagency committee

The President, acting through the Office of Science and Technology Policy, shall designate an interagency committee to coordinate activities of the Initiative as appropriate, which shall be co-chaired by the Office of Science and Technology Policy. The Director of the Office of Science and Technology Policy shall select an additional co-chairperson from among the members of the interagency committee. The interagency committee shall oversee the planning, management, and coordination of the Initiative. The interagency committee shall carry out the following:

(1) Provide for interagency coordination of Federal engineering biology research, development, and other activities undertaken pursuant to the Initiative.

(2) Establish and periodically update goals and priorities for the Initiative.

(3) Develop, not later than 12 months after August 9, 2022, and update every five years thereafter, a strategic plan submitted to the Committee on Science, Space, and Technology, the Committee on Agriculture, and the Committee on Energy and Commerce of the House of Representatives and the Committee on Commerce, Science, and Transportation, the Committee on Agriculture, Nutrition, and Forestry, the Committee on Small Business and Entrepreneurship, and the Committee on Health, Education, Labor, and Pensions of the Senate that—

(A) guides the activities of the Initiative for purposes of meeting the goals and priorities established under (and updated pursuant to) paragraph (2); and

(B) describes—

(i) the Initiative's support for long-term funding for interdisciplinary engineering biology research and development;

(ii) the Initiative's support for education and public outreach activities;

(iii) the Initiative's support for research and other activities on ethical, legal, environmental, safety, security, and other appropriate societal issues related to engineering biology, including—

(I) an applied biorisk management research plan;

(II) recommendations for integrating security into biological data access and international reciprocity agreements;

(III) recommendations for manufacturing restructuring to support engineering biology research, development, and scaling-up initiatives; and

(IV) an evaluation of existing biosecurity governance policies, guidance, and directives for the purposes of creating an adaptable, evidence-based framework to respond to emerging biosecurity challenges created by advances in engineering biology;

(iv) how the Initiative will contribute to moving results out of the laboratory and into application for the benefit of society and United States competitiveness; and

(v) how the Initiative will measure and track the contributions of engineering biology to United States economic growth and other societal indicators.

(4) Develop a national genomic sequencing strategy to ensure engineering biology 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, to enhance long-term innovation and competitiveness in engineering biology in the United States.

(5) Develop a plan to utilize Federal programs, such as the Small Business Innovation Research Program and the Small Business Technology Transfer Program (as described in section 638 of title 15), in support of the activities described in section 19132(b)(3) of this title.

(6) In carrying out this section, take into consideration the recommendations of the advisory committee established under section 19134 of this title, the results of the workshop convened under section 19132 of this title, existing reports on related topics, and the views of academic, State, industry, and other appropriate groups.

(b) Quinquennial report

Beginning with fiscal year 2023 and every five years thereafter for ten years, the interagency committee shall prepare and submit to the Committee on Science, Space, and Technology, the Committee on Energy and Commerce, and the Committee on Agriculture of the House of Representatives and the Committee on Commerce, Science, and Transportation, the Committee on Health, Education, Labor, and Pensions, the Committee on Small Business and Entrepreneurship, and the Committee on Agriculture, Nutrition, and Forestry of the Senate a report that includes the following:

(1) A summarized agency budget in support of the Initiative for the current fiscal year, including a breakout of spending for each agency participating in the Program, and for the development and acquisition of any research facilities and instrumentation.

(2) An assessment of how Federal agencies are implementing the plan described in subsection (a)(3), including the following:

(A) A description of the amount and number of awards made under the Small Business Innovation Research Program and the Small Business Technology Transfer Program (as described in section 638 of title 15) in support of the Initiative.

(B) A description of the amount and number of projects funded under joint solicitations by a collaboration of not fewer than two agencies participating in the Initiative.

(C) A description of effects of newly-funded projects by the Initiative.

(c) Initiative Coordination Office

(1) In general

The President shall establish an Initiative Coordination Office, with a Director and full-time staff, which shall—

(A) provide technical and administrative support to the interagency committee and