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Federal Agencies Announce Investments and Resources to Advance National Biotechnology and Biomanufacturing Initiative

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As reported in our September 13, 2022, blog item, on September 12, 2022, President Joseph Biden signed an Executive Order (EO) creating a National Biotechnology and Biomanufacturing Initiative "that will ensure we can make in the United States all that we invent in the United States." The White House hosted a Summit on Biotechnology and Biomanufacturing on September 14, 2022. According to the White House fact sheet on the summit, federal departments and agencies, with funding of more than $2 billion, will take the following actions:

- **Leverage biotechnology for strengthened supply chains**: The Department of Health and Human Services (DHHS) will invest $40 million to expand the role of biomanufacturing for active pharmaceutical ingredients (API), antibiotics, and the key starting materials needed to produce essential medications and respond to pandemics. The Department of Defense (DOD) is launching the Tri-Service Biotechnology for a Resilient Supply Chain program with a more than $270 million investment over five years to turn research into products more quickly and to support the advanced development of biobased materials for defense supply chains, such as fuels, fire-resistant composites, polymers and resins, and protective materials. Through the Sustainable Aviation Fuel Grand Challenge, the Department of Energy (DOE) will work with the Department of Transportation and the U.S. Department of Agriculture (USDA) to leverage the estimated one billion tons of sustainable biomass and waste resources in the United States to provide domestic supply chains for fuels, chemicals, and materials.

- **Expand domestic biomanufacturing**: DOD will invest $1 billion in bioindustrial domestic manufacturing infrastructure over five years to catalyze the establishment of the domestic bioindustrial manufacturing base that is accessible to U.S. innovators. According to the fact sheet, this support will provide incentives for private- and public-sector partners to expand manufacturing capacity for products important to both commercial and defense supply chains, such as critical chemicals.

- **Foster innovation across the United States**

: The National Science Foundation (NSF) recently announced a competition to fund Regional Innovation Engines that will support key areas of national interest and economic promise, including biotechnology and biomanufacturing topics such as manufacturing life-saving medicines, reducing waste, and mitigating climate change. In May 2022, USDA announced $32 million for wood innovation and community wood grants, leveraging an additional $93 million in partner funds to develop new wood products and enable effective use of U.S. forest resources. DOE also plans to announce new awards of approximately $178 million to advance innovative research efforts in biotechnology, bioproducts, and biomaterials. In addition, the U.S. Economic Development Administration's $1 billion Build Back Better Regional Challenge will invest more than $200 million to strengthen America's bioeconomy by advancing regional biotechnology and biomanufacturing programs.

- **Bring bioproducts to market**: DOE will provide up to $100 million for research and development (R&D) for conversion of biomass to fuels and chemicals, including R&D for improved production and recycling of biobased plastics. DOE will also double efforts, adding an additional $60 million, to de-risk the scale-up of biotechnology and biomanufacturing that will lead to commercialization of biorefineries that produce renewable chemicals and fuels that significantly reduce greenhouse gas emissions from transportation, industry, and agriculture. The new $10 million Bioproduct Pilot Program will support scale-up activities and studies on the benefits of biobased products. Manufacturing USA institutes BioFabUSA and BioMADE (launched by DOD) and the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) (launched by the Department of Commerce (DOC)) will expand their industry partnerships to enable commercialization across regenerative medicine, industrial biomanufacturing, and biopharmaceuticals.

- **Train the next generation of biotechnologists**: The National Institutes of Health (NIH) is expanding the Innovation Corps (I-Corps™), a biotech entrepreneurship bootcamp. NIIMBL will continue to offer a summer immersion program, the NIIMBL eXperience, in partnership with the National Society for Black Engineers, which connects underrepresented students with biopharmaceutical companies, and support pathways to careers in biotechnology. In March 2022, USDA announced $68 million through the Agriculture and Food Research Initiative to train the next generation of research and education professionals.

- **Drive regulatory innovation to increase access to products of biotechnology**: The Food and Drug Administration (FDA) is spearheading efforts to support advanced manufacturing through regulatory science, technical guidance, and increased engagement with industry seeking to leverage these emerging technologies. For agricultural biotechnologies, USDA is building new regulatory processes to promote safe innovation in agriculture and alternative foods, allowing USDA to review more diverse products.

- **Advance measurements and standards for the bioeconomy**: DOC plans to invest an additional $14 million next year at the National Institute of Standards and Technology for biotechnology research programs to develop measurement technologies, standards, and data for the U.S. bioeconomy.

- **Reduce risk through investing in biosecurity innovations**: DOE's National Nuclear Security Administration plans to initiate a new $20 million bioassurance program that will advance U.S. capabilities to anticipate, assess, detect, and mitigate biotechnology and biomanufacturing risks, and will integrate biosecurity into biotechnology development.

- **Facilitate data sharing to advance the bioeconomy**: Through the Cancer Moonshot, NIH is expanding the Cancer Research Data Ecosystem, a national data infrastructure that encourages data sharing to support cancer care for individual patients and enables discovery of new treatments. USDA is working with NIH to ensure that data on persistent poverty can be integrated with cancer surveillance. NSF recently announced a competition for a new $20 million biosciences data center to increase our understanding of living systems at small scales, which will produce new biotechnology designs to make products in agriculture, medicine and health, and materials.

A recording of the White House summit is available online.

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