



United States Senate
Washington D.C. 20510

July 25, 2023

VIA ELECTRONIC TRANSMISSION

Thomas J. Vilsak, Secretary
U.S. Department of Agriculture
1400 Independence Ave, SW
Washington, D.C. 20250

Dear Mr. Vilsack:

Today we write about our concerns about U.S. Department of Agriculture (USDA) sponsored-research coalitions involving Chinese biotech organizations that may pose a threat to U.S. economic and national security. Specifically, the USDA's Agriculture Research Service (ARS) previously announced its partnership with the Earth BioGenome Project (EBP), a "version of the moonshot, an effort that will yield millions of powerful new solutions to agriculture's challenges."¹ Subsequent to that 2018 announcement, USDA-ARS awarded \$1 million to BGI, a Chinese-government controlled genomics company that was recently linked to China's People's Liberation Army (PLA).² We uncovered this coalition while tracing U.S. government financial flows as part of our investigation into the origins of the COVID-19 pandemic.

We recognize the benefits and importance of genomic modification (GM) to agriculture but we must also ensure that appropriate safeguards protect the security of U.S.-sponsored genomic research materials and intellectual property. As the agency's chief research division, USDA-ARS must be extra vigilant in safeguarding U.S.-funded research that has potential to be weaponized against the U.S., especially when projects involve countries of concern, like China.³ Research partners and contracts must be thoroughly vetted to identify potential threats to U.S. security whenever genomic modification research or dual use research of concern (DURC) is involved. DURC is research that can be misapplied to "pose significant threat with broad potential consequences to public health and safety, agricultural crops and other plants, animals, the environment, materiel, or national security."⁴

¹U.S. Department of Agriculture, *Earth BioGenome Project Could Hold Solutions for Agriculture's Future*, Research News (Apr. 23, 2018) available at <https://www.ars.usda.gov/news-events/news/research-news/2018/earth-biogenome-project-could-hold-solutions-for-agricultures-future/>.

²USASpending.gov, search parameters for Recipient UEI number "L5Q8SNHT2NZ9" and Awarding Agency "USDA" (Apr. 27, 2023) available at <https://www.usaspending.gov/search/?hash=c86c4ea8401cebde1a3ff6d1e734686f>; and

Elsa B. Kania and Wilson Vorndick, *Weaponizing Biotech: How China's Military Is Preparing for a 'New Domain of Warfare,'* Defense One (Aug. 14, 2019) available at <https://www.defenseone.com/ideas/2019/08/chinas-military-pursuing-biotech/159167/>.

³Director of National Intelligence, *Annual Threat Assessment of the U.S. Intelligence Community*, Assessments (Feb. 6, 2023) available at <https://www.dni.gov/files/ODNI/documents/assessments/ATA-2023-Unclassified-Report.pdf>.

⁴Public Health Emergency, *Dual Use Research of Concern*, Science Safety Security (Apr. 24, 2023) available at

The Increasing Threat of China's Military-Civilian Fusion Impact in Research

In 2022, the U.S. Department of Defense (DoD) identified the People's Republic of China (PRC) as "the most consequential and systemic challenge to U.S. national security and a free and open international system."⁵ The PRC pursues a Military-Civilian Fusion (MCF) development strategy to, among other things, increase its power through developing and acquiring "advanced dual-use technology for military purposes and deepen reform of the national defense science and technology industries."⁶ By fusing civilian technology and industrial base with its defense industrial base, the PRC can build military requirements into civilian infrastructure, leverage civilian service for military purposes, and blend civilian and military expertise.⁷

The PRC has been weaponizing biotech in preparation for strategic advantage in a new domain of biological warfare.⁸ Scientific ethical boundaries have been ignored by scientists in China, as evidenced by their creation of two genetically altered babies.⁹ Chinese military medical scientists recently inserted a gene from a microscopic water bear into a human embryonic stem cell which significantly increased its resistance to radiation for the ultimate purpose of developing blood-making cells to increase the chances of humans surviving an apocalyptic event.¹⁰

Risks of USDA Collaboration with BGI

BGI is a China-based biotech company that has been leading the PRC's efforts to create the world's largest genomic repository. The U.S. National Counterintelligence and Security Center (NCSC) issued a public warning about risks of BGI's access to genetic information of Americans in 2021.¹¹ In 2022, the DoD added BGI to its list of Chinese military companies operating directly or indirectly in the U.S. as a civilian entity that "supports the modernization goals of the People's Liberation Army" through China's MCF strategy.¹² In 2023, the U.S. Department of Commerce (Commerce) added BGI to its Bureau of Industry and Security's Entity List for trade restrictions in 2023. Two BGI affiliates were added to the list in 2020.¹³ Any U.S. collaboration with BGI or any other data-storage entity based in China could place research projects and resources at risk for sudden denial to data access.¹⁴ The United States experienced the adverse impact of China's denial to information when in 2020, a research coalition that included BGI as a partner, supported by U.S. grants, had to retract published results after the PRC

<https://www.phe.gov/s3/dualuse/Pages/default.aspx>.

⁵ U.S. Dept. of Defense, *2022 Report on Military and Security Developments Involving the People's Republic Power Report*, China Military Power Report (Nov. 29, 2022) available at <https://media.defense.gov/2022/Nov/29/2003122279/-1/-1/1/2022-MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA.PDF>.

⁶ *Id.*

⁷ *Id.*

⁸ *Id.*

⁹ Dennis Normile, *Chinese scientist who produced genetically altered babies sentenced to 3 years in jail*, SCIENCE (Dec. 30, 2109) available at <https://www.science.org/content/article/chinese-scientist-who-produced-genetically-altered-babies-sentenced-3-years-jail>.

¹⁰ Stephen Chen, *Chinese team behind extreme animal gene experiment says it may lead to super soldiers who survive nuclear fallout*, South China Morning Post (Mar. 29, 2023) available at <https://www.scmp.com/news/china/science/article/3215286/chinese-team-behind-extreme-animal-gene-experiment-says-it-may-lead-super-soldiers-who-survive>.

¹¹ NCSC, *China's Collection of Genomic and Other Healthcare Data From America: Risks to Privacy*, U.S. Economics and National Security (Feb. 2021) available at https://www.dni.gov/files/NCSC/documents/SafeguardingOurFuture/NCSC_China_Genomics_Fact_Sheet_2021revision20210203.pdf.

¹² DOD Releases List of People's Republic of China (PRC) Military Companies in Accordance with Section 1260H of the National Defense Authorization Act for Fiscal Year 2021 (Oct. 5, 2022) available at <https://media.defense.gov/2022/Oct/05/2003091659/-1/-1/0/1260H%20COMPANIES.PDF>.

¹³ 88 FR 13673. Federal Register, *Additions and Revisions of Entities to the Entity List*, A (March 6, 2023) available at <https://www.federalregister.gov/documents/2023/03/06/2023-04558/additions-and-revisions-of-entities-to-the-entity-list>.

¹⁴ Christian Perez, *Why China's New Data Security Law Is a Warning for the Future of Data Governance*, FOREIGN POLICY MAGAZINE (Jan. 28, 2022) available at <https://foreignpolicy.com/2022/01/28/china-data-governance-security-law-privacy/>.

unexpectedly changed its data-sharing regulations and withdrew the data from public access.¹⁵ Without access to the underlying scientific data, the entire project and U.S. resource investments were essentially voided.

The Earth Biogenome Project

The Earth Biogenome Project (EBP) is an international cooperative initiative to sequence the DNA of more than 1.5 million species and BGI is a data-collection, data storage partner.¹⁶ As a precursor to the EBP and before BGI was listed by DoD and Commerce as a China-based organization with PLA connections, BGI met with USDA, University of California at Davis (UC Davis) and other U.S. government and university representatives to explore the concept of sequencing of all life.¹⁷ Subsequent to that foundational meeting, BGI has pursued partnerships for strategic access to genome sequencing and one of those partnerships, the UC Davis Genomic Center, serves as the functional headquarters for the EBP.¹⁸

The EBP started by building on existing research efforts to sequence genomes, such as the USDA's i5K Initiative and Ag100Pest.¹⁹ Over fifty similar DNA collection and characterization coalition projects are part of EBP's affiliated network, several of which are directly organized by BGI or BGI is a member.²⁰ An affiliate relevant to the COVID-19 origins investigation is the Global Virome Project (GVP), a private organization aimed to prevent pandemics by collecting and conducting laboratory experiments on dangerous animal virus pathogens, like bat coronaviruses.²¹ BGI and the China National GeneBank hold leadership roles on EBP's subcommittees for: Genomic Sequencing and Assembly; Annotation, Data Analysis; and IT and Informatics (chair).²² USDA-ARS serves on the EBP's steering committee.²³

We are gravely concerned that the USDA is participating in this massive effort to sequence all of life with BGI's participation as an active research collaborator. Following the COVID-19 outbreak, the PRC blocked access to patient and virus samples that could assist in our investigation into the origins of the pandemic, despite data-sharing agreements and multiple-year collaborations between the PRC and U.S. public health agencies and universities. Even if USDA stopped paying BGI directly, through partnering with BGI and sharing U.S. intellectual property, the collaboration could endanger our security by giving China a strategic competitive edge to hold and store data that U.S. scientists have worked hard to develop.

Request for Information

1. What is the status of USDA's data sharing agreements with BGI?
2. Does BGI have access to USDA research databases and if so, which ones and to what extent is their access?

¹⁵ Na Cai, et al, *RETRACTED ARTICLE: 11,670 whole-genome sequences representative of the Han Chinese population from the CONVERGE project*, SCIENTIFIC DATA (Apr. 16, 2020), available at <https://doi.org/10.1038/s41597-020-0430-x>.

¹⁶ Earth Biogenome Project, About (Apr. 27, 2022) available at <https://www.earthbiogenome.org/>.

¹⁷ Victoria Hatch, *The Earth Biogenome Project: on track and ready to ramp up*, EMBL-EBI (Jan 21, 2022) available at <https://www.ebi.ac.uk/about/news/announcements/the-earth-biogenome-project-on-track-and-ready-to-ramp-up/>.

¹⁸ *Id at 19*.

¹⁹ *Id at 1*.

²⁰ *Id at 19*.

²¹ Global Virome Project, *About Us* (May 1, 2023) available at <https://www.globalviromeproject.org/leadership-team>.

²² *Id at 19*.

²³ *Id at 1*.

3. What is the status of USDA's involvement in the Earth Biogenome Project?
4. Does USDA warehouse any of the collected Earth Biogenome Project data? If not, does USDA have access to all research project data sponsored by the USDA?
5. A new law placed limitations on funding by the U.S. Department of Health and Human Services for research involving dangerous pathogens that would be performed by a foreign entity at a facility located in countries of concern, like China.²⁴ Will USDA also prohibit funding involving dangerous pathogens in countries of concern?
6. More than 50 EPB affiliated projects are named on the Earth Biogenome Project website. How many of those affiliated projects involve USDA funding? Of those projects, do any involve potentially dangerous pathogens or research?
7. Has USDA planned for contingencies if access to data collected by BGI or any other China-based organization is suddenly terminated?

To assist our ongoing oversight investigation, please provide the following to Senator Marshall's Chief Investigator Diane_Cutler@marshall.senate.gov by August 8, 2023. Thank you for your timely consideration of our request.

Very respectfully,



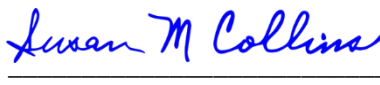
Roger Marshall, M.D.
United States Senator



Marsha Blackburn
United States Senator



Marco Rubio
United States Senator



Susan M. Collins
United States Senator

²⁴ Consolidated Appropriations Act of 2023, Pub. L. 117-328, *see Section 2315*.