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• Article •

Study of the Biosecurity Policy of Trump's Second Term under the "America First" Framework

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Abstract: The issue of global biosecurity is becoming increasingly serious. The United States, as a major power in biotechnology and military biodefense, has a significant influence on the international community through its biosecurity policies. During Trump's second term, his administration substantially changed the biosecurity policies of the Biden administration. It adopted an "America First" approach to international cooperation and placed greater emphasis on strengthening U.S. military capabilities. These changes have reshaped global biosecurity cooperation and weakened trust among major powers. This paper examines the main measures, characteristics, and driving factors of the Trump administration's biosecurity policies. It also uses the military sector as a case study to explore the broader impact of these policy changes.

Keywords: Trump's Second Administration; Global Biosecurity Governance; Biosecurity policy; Military biotechnology

1. Introduction

The issue of withdrawing from the World Health Organization began during the first Trump administration. At that time, the United States criticized the organization for being biased in favor of China in handling the COVID-19 pandemic. It believed that the distribution of funds was seriously unfair and that the organization urgently needed reform. The Biden administration revoked the withdrawal notification and actively engaged in global biosecurity diplomacy, sending a signal of comprehensive cooperation. These actions aimed to maintain America's dominant position in WHO reform and global governance. However, on the first day of Trump's return to the White House, the administration immediately announced its withdrawal from the WHO. The United States formally left the organization on January 22, 2026. This action marked a significant change in American biosecurity policy. It showed that the United States was trying to reduce the role of international cooperation and shift its policy focus toward ensuring domestic security and developing biomanufacturing capabilities.

The United States is one of the world's major powers and holds a leading position in the application of biotechnology to military security. The military use of its biotechnology has always been directly affected by changes in government biosecurity policy. Therefore, the development of military biosecurity programs provides one of the most direct ways to observe changes in American biosecurity policy. Traditional biosecurity policies mainly focused on the spread of biological weapons and bioterrorism. In contrast, under the rules established by the Biological Weapons Convention, American public policy documents usually describe current programs as defensive and protective in nature. However, the budgets of the Department of Defense, the Chemical and Biological Defense Program, and the projects of agencies such as DARPA show that biotechnology is being more systematically included in the framework of military capability competition.

The research methods used in this paper include the literature review method and the case analysis method. The literature review method is mainly used to collect literature related to the biosecurity policies of the second Trump administration, including policy documents, news reports, think tank reports, and so on. By organizing and analyzing these documents, we can better understand the background, core content, and purpose of the second Trump administration's biosecurity policies, which provides realistic and theoretical bases for this article. The case analysis method focuses on how the United States builds its biological military capabilities, involving the defense budget, biomanufacturing, soldier enhancement, and other aspects. Through these cases, we can comprehensively understand the specific steps taken by the United States to integrate biotechnology into its defense and military capability-building system.

This paper aims to analyze the far-reaching impacts and specific outcomes of biosecurity policy during Trump's second term. By comprehensively examining its content, characteristics, and driving factors, this study attempts to answer the following questions: What new trends have emerged in biosecurity policy during Trump's second term? What characteristics do these policies present, and what factors have influenced them? How have these policy adjustments been transformed into specific military practices?

2. Literature Review

The recent studies of the U.S. biosecurity policy can be divided into three categories: how the United States defines biological threats and formulates biosecurity policies; global health security and competition among major powers; biotechnology risks and their military applications. These studies reveal the background and historical achievements of U.S. biosecurity policymaking.

From the perspective of defining biological threats and analyzing relevant policies, Liu Changmin et al. point out that bioterrorism, the proliferation of biological weapons, and major infectious diseases have long been the central concerns of U.S. biosecurity policy. Coblenz classifies biological risks into three categories: natural events, accidental releases, and deliberate attacks. He further demonstrates that different types of threats lead governments to adopt different policy instruments. Smith further emphasizes that objective dangers alone are insufficient to determine the

direction of policy; how political leaders and experts understand and perceive these dangers is equally important. Ding Chenjun et al. also note that current U.S. policymaking relies on various instruments, including strategic documents, interagency plans, budget proposals, and reports issued by research institutions.

From the perspective of global health security and major-power competition, Jin Jiyong points out that although U.S. global health policy is often described as an effort to control the spread of disease, it also aims to maintain U.S. international influence and shape global rules. Davies further demonstrates that infectious disease prevention and control policies are closely connected with border control, diplomacy, and the broader international order. In the context of major-power competition, Jin Jiyong and Wu Jinxuan argue that the Biden administration incorporated biosecurity into its strategic competition with China.

From the study of biotechnology risks and military applications, Han Fei points out that the U.S. biomanufacturing strategy for the Department of Defense aims to support domestic production, replace critical materials, and expand the defense industrial base. Through this process, biomanufacturing has become an important part of national security and military planning. Research by Liu Mai and other scholars shows that DARPA programs are promoting the transition of synthetic biology, biosensing technologies, and biomanufacturing from laboratory research to practical defense applications. Bloomfield and his research team warn that although artificial intelligence can greatly accelerate life sciences research, it may also make advanced biological knowledge and technologies more accessible. They therefore argue that the government should strengthen the regulation of computational models, biological data, and DNA synthesis services.

Two important gaps remain in the existing literature. First, many studies focus on the specific content and significance of individual policies, but fail to fully examine the overall policy framework and its concrete measures. Second, as the militarization of biotechnology in the United States continues to accelerate, existing studies mainly analyze this trend through budget and policy documents. However, few studies explain how policy adjustments influence the development of military technology or identify the actual purpose behind these adjustments. In addition to examining the content and characteristics of the policies, this paper analyzes their driving factors. It also uses biosecurity programs in the U.S. military as cases to examine the mechanisms of policy implementation.

3. The Second Trump Administration's Biosecurity Policy

3.1 Action Measures

3.1.1 Restructuring the Biosecurity Governance System

Trump's second term first changed the way the United States participated in global health governance. The country shifted from broad multilateral mechanisms to partnerships selected by the

United States itself. An executive order issued on January 20, 2025, reversed the Biden administration's decision to rejoin the World Health Organization. It required the Department of State and the Office of Management and Budget to stop transferring funds, support, and resources to the WHO. It also required the government to recall or reassign American personnel working with the organization and find American institutions or international partners to take over related work. In addition, the order called for a review and revision of the 2024 U.S. Global Health Security Strategy. The United States formally withdrew from the WHO in January 2026.

In September 2025, the second Trump administration released the America First Global Health Strategy. This document set out the administration's global health policy and was implemented by the Department of State. The strategy used the benefits to U.S. homeland security as the main standard for deciding whether to invest abroad. It also emphasized the use of time-limited bilateral agreements to define the financial responsibilities and implementation duties of partner countries. These policy adjustments show that the United States did not completely withdraw from global health affairs. Instead, it turned global health cooperation into a more bilateral, conditional, and results-oriented policy tool. The United States no longer focused mainly on providing long-term public aid or maintaining the multilateral health system. It placed greater emphasis on whether cooperation could reduce the risk of infectious diseases entering the United States, ease its financial burden, and serve its foreign policy interests.

The domestic administrative system also became more streamlined and centralized. The Department of Health and Human Services planned to reduce its full-time workforce from about 82,000 to 62,000. It also planned to merge 28 divisions into 15 and reduce the number of regional offices from 10 to 5. At the same time, the department would centralize the management of human resources, information technology, procurement, external affairs, and policymaking.

The adjustment also involved the redistribution of responsibilities among biosecurity-related agencies. The Centers for Disease Control and Prevention was required to refocus on its core tasks, including infectious disease surveillance, epidemic warning, and emergency response. Some public health preparedness functions previously carried out by the Administration for Strategic Preparedness and Response were transferred to the CDC's newly established Center for Preparedness and Response. Some functions of the Administration for Strategic Preparedness and Response and the Advanced Research Projects Agency for Health were planned to be placed under a new agency at the assistant secretary level. In May 2025, Trump also signed an executive order to suspend federally funded "dangerous gain-of-function research." The order required the White House Office of Science and Technology Policy and the National Security Advisor to lead the revision of related regulations. As a result, research reviews that had previously been divided among agencies such as the National Institutes of Health became more closely controlled by a unified White House policy.

These administrative adjustments did not simply reduce the functions of government agencies related to biosecurity. Instead, the second Trump administration reduced organizational levels,

centralized policy review authority, and limited overlapping responsibilities among agencies. These changes made biosecurity decisions more directly follow the policy priorities set by the president and senior government officials.

3.1.2 Strengthening Domestic Biomanufacturing Capacity

Critical biomanufacturing capacity is regarded as an important foundation of national security. The Trump administration believed that U.S. dependence on overseas supply chains for pharmaceutical ingredients, key starting materials, and production equipment could weaken public health protection and military operations during pandemics, geopolitical conflicts, or trade disruptions. For this reason, Trump signed an executive order in May 2025. It required the Department of Health and Human Services and the Food and Drug Administration to remove repeated requirements in the approval process for domestic pharmaceutical facilities. The order also aimed to shorten the review period for building and expanding factories. At the same time, it called for more unannounced inspections of overseas pharmaceutical facilities to reduce the regulatory costs faced by domestic producers compared with foreign producers.

In April 2025, BioMADE, which is supported by the Department of Defense, announced plans to build a demonstration-scale biomanufacturing facility in Minnesota with an investment of at least \$132 million. The facility would include two 25,000-liter industrial fermentation units. It would provide a platform for moving fuels, chemicals, materials, and other dual-use products from laboratory research to large-scale production. In August of the same year, BioMADE provided an additional \$6.4 million for defense-related biomanufacturing projects. These projects included producing military lubricants from food waste and producing bio-based carbon fiber from ethanol and carbon dioxide.

Critical biomanufacturing capacity is not only an important foundation of domestic health security but also a major source of support for military technology development. The second Trump administration regarded stronger domestic biomanufacturing capacity as an important part of responding to geopolitical competition, meeting wartime needs, and maintaining technological advantages.

3.1.3 Regulation of AI and Life-Science Risks

The Trump administration strengthened its regulation of emerging biotechnology. Executive Order 14292, issued in May 2025, required the Office of Science and Technology Policy to revise the 2024 Framework for Nucleic Acid Synthesis Screening within 90 days. It also required all federal agencies that fund life sciences research to supervise the use of federal funds. All research contracts and funding agreements were required to include compliance terms. Institutions that violated these rules would immediately lose their eligibility for federal funding. They could also be prohibited from applying for federal life sciences funding for the following five years. The order further required the government to develop a regulatory plan for research without federal funding. It also required the use

of verifiable nucleic acid synthesis screening methods and planned to extend these methods to the commercial sector.

Artificial intelligence can greatly improve the efficiency of biotechnology, but it also creates a series of risks. The U.S. Artificial Intelligence Action Plan, released in July 2025, included both life sciences innovation and biological risk governance in its policy agenda. On the one hand, the plan proposed building AI-driven automated laboratories and high-quality biological datasets. These measures aimed to expand the use of AI in drug development and biological research. On the other hand, institutions receiving federal research funding were required to use synthesis tools and service providers with nucleic acid sequence screening and customer identity verification capabilities. The plan also encouraged nucleic acid synthesis companies to share information about suspicious customers. This policy shows that the United States sought to promote biotechnology innovation while preventing AI from being used for harmful purposes.

The export of biological data was also strictly controlled. In April 2025, the Department of Justice formally implemented the Data Security Program. It prohibited or restricted transactions that could give "countries of concern," including China, Russia, Iran, North Korea, Cuba, and Venezuela, access to U.S. government data and large amounts of sensitive personal data. Such data included genomic, health, and biometric information. The Department of Justice described this system as "an export control in effect." Its regulation was no longer limited to physical goods and technologies. It also covered the transfer of data abroad through transactions, licenses, or remote access.

In cooperation with this program, the National Institutes of Health prohibited institutions in these countries from accessing its controlled data repositories and related data from April 4, 2025. It also restricted unauthorized access to controlled human genomic data and AI models trained with such data. The idea for the Data Security Program was developed during the Biden administration, but specific rules and implementation plans were introduced during Trump's second term. This development shows that biological data has become an important strategic resource for the United States in technological competition and national security.

3.2 Characteristics

3.2.1 Seeking Strategic Advantage

The main feature of biosecurity policy during Trump's second term was the expansion of its policy goals. The policy no longer focused only on reducing the risks of biological incidents. It also aimed to maintain America's technological advantages. Biotechnology was no longer viewed simply as a source of risk that required regulation. It was increasingly regarded as a strategic resource that could influence industrial competitiveness and national power.

The 2025 National Security Strategy treated U.S. leadership in biotechnology and related international standards as a national interest. The America First Investment Policy clearly identified biotechnology as a sensitive field that required special attention. Its main purpose was to prevent

American capital and technical expertise from supporting China's development of technologies with military or intelligence value. At the same time, Executive Order 14292 further strengthened the regulation of high-risk biological research. It also emphasized that the United States should maintain its global leadership in biotechnology, medical countermeasures, and health research.

These measures show that the Trump administration did not only seek to control technological risks. It also attempted to combine risk management with competitive advantages. This change gave biosecurity policy a clearer role in technological competition. Whether a technology created a security concern no longer depended only on its ability to cause direct harm. It also depended on whether competitors could use the technology to reduce the capability gap with the United States.

3.2.2 Selective Cooperation

The second feature was the shift from broad participation in multilateral mechanisms to selective cooperation. "Selective cooperation" did not mean that the United States reduced all forms of international participation. Instead, it selected partners and areas of cooperation according to national security interests, the level of technological trust, and supply chain value. The basic logic was to strengthen cooperation with allies and important partners in biotechnology, critical medicines, and biosecurity standards. At the same time, the United States restricted strategic competitors from accessing its technology, data, and research resources.

In addition to the withdrawal from the World Health Organization and other policy adjustments, this change was also clearly reflected in scientific and technological cooperation. In February 2025, the United States and India launched the Transforming the Relationship Utilizing Strategic Technology initiative. It included biotechnology in their cooperation on critical and emerging technologies. The two countries also proposed jointly building pharmaceutical supply chains and expanding India's manufacturing capacity for key active pharmaceutical ingredients. In October of the same year, the United States signed Technology Prosperity Deals with Japan and South Korea. These agreements included protecting pharmaceutical and biotechnology supply chains, identifying supply chain weaknesses, protecting intellectual property, and strengthening research security.

At the same time, the U.S. Artificial Intelligence Action Plan called for the international adoption of nucleic acid synthesis screening systems among allies and partners. The Department of Justice and the National Institutes of Health also restricted China, Russia, and other "countries of concern" from accessing American genomic, health, and other controlled research data. These actions show that the United States was replacing generally available cooperation with limited partnerships based on a high level of trust. This approach helped the United States build a more controllable partner network in critical technologies and materials. However, it could also divide the global biotechnology system along geopolitical lines and gradually create separate groups.

3.2.3 Composite Policy Network

The third feature of U.S. biosecurity policy during Trump's second term was the absence of a new, unified, and comprehensive strategy. Instead, the government gradually built a strategic network through measures that addressed specific problems. However, this did not mean that the second Trump administration lacked a clear policy direction.

The Department of Health and Human Services still uses the National Biodefense Strategy as the main document guiding national biodefense work. The strategy was first issued in 2018 and revised in 2022. The Trump administration has not yet introduced a new strategy that includes the policy adjustments made during its second term. At the same time, the biosecurity challenges faced by the government have extended beyond the main scope of the existing National Biodefense Strategy.

For competition in biotechnology, the government mainly uses the National Security Strategy to determine its overall policy direction. It relies on investment review mechanisms to prevent American capital from supporting the development of foreign biotechnology. Adjustments to international health cooperation are promoted by the Department of State through a separate global health strategy. Each policy focuses on a specific issue and has not been integrated into a unified biosecurity framework. Therefore, the final policy system was not designed in advance and then implemented by different agencies under a single plan. Instead, it gradually took shape through the continuous introduction of targeted measures.

3.3 Motivation

3.3.1 Domestic Drivers

Political Factors. First, political accountability for the COVID-19 pandemic and partisan competition in the United States were direct political forces behind the Trump administration's adjustment of biosecurity policy. The serious losses caused by the pandemic made policy legitimacy and the administrative efficiency of government agencies important issues. These issues were used both to hold the previous administration responsible and to compete for political legitimacy. Through congressional investigations, Republicans continued to examine funding provided by the National Institutes of Health to EcoHealth Alliance. They mainly questioned whether the federal government had effectively reviewed the related funding. The functions and efficiency of government agencies also became major points of criticism. Although the origin of COVID-19 remains uncertain, these investigations turned biosecurity into an important issue for Republicans to criticize the Democratic administration and the federal research system.

Second, Trump used populism and the "America First" narrative to describe the biosecurity problems of the previous administration as a populist issue. In this narrative, domestic and foreign elites controlled funding and decision-making power, while ordinary people had to bear the security consequences. This approach was intended to shift attention away from problems caused by decisions made during Trump's first term. Therefore, tightening biosecurity policy and adjusting the functions of government agencies served several political purposes. These actions allowed Trump to attack

political opponents and respond to political accountability after the pandemic. They also helped him reject the policies of the previous administration, fulfill his political promises, and strengthen his voter base.

Technological Factors. Lower barriers to biotechnology and the spread of dangerous capabilities were important technological factors behind stronger regulation. The development of AI-assisted biotechnology has reduced the dependence of advanced biotechnology on professional knowledge, large amounts of funding, and major laboratories. As a result, biotechnology has gradually become more accessible to companies and individuals. This has greatly increased the possibility that individuals could obtain dangerous biological weapon capabilities. Although the direct production of biological weapons is strictly controlled, individuals may separate material production, technology integration, and final use into different stages. This makes it more difficult for the government to identify the purpose of research and track the movement of technology. These technologies can be used for drug and vaccine development, but they may also be used for biological weapons and high-risk biological research. Therefore, the Trump administration's stronger regulation of biotechnology and closer review of research funding were responses to the biosecurity threats created by lower technological barriers.

Economic Factors. The bioeconomy has created major economic interests and related interest groups. Economic development is also closely connected with government budgets and domestic political stability. For this reason, ensuring the safe development of the bioeconomy became an important part of policy adjustment. Companies need to turn research results into products. Universities depend on research funding and patent income, while investment institutions focus on the expected growth of the industry. These interest groups cannot accept major security incidents in the industry, but they also do not want the government to place excessive restrictions on normal activities.

On the one hand, serious biosecurity incidents could cause public panic, the withdrawal of investment, and the suspension of research on a large scale. These outcomes would create economic losses across the whole industry. On the other hand, a review system with clear limits could increase public and investor confidence and provide more stable expectations for economic development. Related groups used industry associations, congressional hearings, and technical standard setting to influence government policy. They encouraged the government to focus restrictions on dangerous research projects while leaving enough space for normal drug development and biomanufacturing. The Trump administration strengthened restrictions on dangerous gain-of-function research while repeatedly emphasizing that regulation should not prevent American biotechnology innovation. This reflected a balance between reducing security risks and protecting the economic benefits of the bioeconomy.

Institutional Inertia. The institutional inertia of the existing U.S. biosecurity system was not a direct cause of policy adjustment. However, it indirectly supported the adjustment by making policy changes easier to carry out. After years of development, the United States had already established a

relatively mature biosecurity governance system. Related agencies had formed stable cooperation mechanisms, and biological risks had gradually been included in the national security framework. This system was partly consistent with the Trump administration's emphasis on homeland security and reduced dependence on foreign countries. The administration did not need to build a new system. Instead, it could apply the "America First" approach to biosecurity by adjusting the tasks and resources of existing agencies.

3.3.2 International Drivers

Great Power Competition. Competition between China and the United States in biotechnology and the bioeconomy was a major international driving factor behind the Trump administration's adjustment of biosecurity policy. American policymakers no longer measured China's biotechnology development through a single technology or the industrial scale of one sector. Instead, they viewed biotechnology, production supply chains, and the bioeconomy as closely connected parts of competition. China's market share continued to grow in biotechnology research, biomanufacturing, and biosecurity support. This raised concerns in the United States that American capital, technology, and data flowing into China could be turned into the industrial and security capabilities of a competitor.

These concerns led the America First Investment Policy to identify biotechnology as a sensitive field in restrictions on investment in China. The Data Security Program of the Department of Justice also restricted the transfer of biological data to China and other "countries of concern." The Trump administration strengthened domestic biomanufacturing and trusted supply chains at the same time. These actions were intended to reduce the channels through which competitors could obtain critical resources. They also showed that the administration was using biosecurity policy to maintain America's relative technological advantages.

Military Security. The expanding military use of biotechnology and the growth of foreign biological capabilities were important military security factors behind stronger biosecurity policy. The current geopolitical situation is unstable, conflicts continue in sensitive regions, and the United States remains deeply involved in wars. In this situation, biotechnology can be used for battlefield medicine and personnel protection. It can also be applied to biological weapons, intelligence collection, and soldier enhancement. As a result, the boundary between civilian innovation and military capabilities has become increasingly unclear.

The U.S. intelligence community included the possible development of biological weapon capabilities by China, Russia, Iran, and other countries in its security assessments. This showed that American concerns about the weaponization of biotechnology were no longer limited to terrorist attacks. They also included the possible use of biotechnology on the scale of warfare. Based on this understanding, the National Defense Authorization Act for Fiscal Year 2026 required the Department of Defense to establish a biotechnology management office and develop a defense biotechnology strategy. It also required plans for a commercial biomanufacturing network for critical defense

products. These adjustments show that the second Trump administration sought to turn biotechnology competition into long-term defense organization and capability building. Its aim was to gain an early advantage in the field of military biosecurity.

4. Mechanisms and Impacts of Policy Adjustments in the Military Field

Changes in specific military programs have already resulted from the adjustment of biosecurity policy. The Trump administration did not establish a completely separate military biosecurity system. Instead, it applied its new policy goals to specific programs by building research platforms, adjusting budget arrangements, and strengthening project reviews. This section first examines how these policy adjustments entered the military field. It then uses two cases to explain the main changes in related programs and their following impacts.

4.1 Policy Implementation Mechanisms

4.1.1 Specialized Platforms

Specialized platforms are direct channels through which presidential decisions enter the military field. After the president sets tasks related to biosecurity technology, the related military security issues are assigned to the Department of Defense. The department then defines the military purpose of the platform through cooperation documents and provides the necessary funding in its budget. At this stage, the policy moves beyond general departmental participation or basic policy responses. It is further applied to national laboratories and university research institutions and transformed into specific defense research programs. The construction of specialized platforms can turn policy goals into practical research arrangements. It can also identify the institutions responsible for implementation, the main research tasks, and the sources of resources.

4.1.2 Annual Budgets

Annual budgets are the main channel through which administrative requirements enter existing military programs. The policy direction proposed by the president needs to be reflected in the defense budget through specific implementation conditions and program priorities. Changes in program funding, the renewal of service contracts, and changes in budget categories can be used to determine whether a policy has reached the program level. These factors can also show the importance of a particular technology. Funding changes and contract renewals reflect the resources available for program implementation. Changes in budget categories show the mission goals that will guide the future development of a program.

4.1.3 Security Reviews

Security reviews can directly change the entry and continuation conditions of military biological research programs. Military biological research must demonstrate both technical feasibility and military value. It must also meet political and economic security requirements. During the approval stage, a program cannot receive approval if its research content or foreign partners fail to meet the relevant requirements, even when it has high military value. After a program begins, the Department of Defense may suspend the research or terminate the contract if the level of risk increases, the

partners change, or violations occur. Security reviews directly determine whether a program can begin and continue successfully.

4.2 Case Studies

4.2.1 Security Reviews

The Genesis Mission was not established specifically for military biosecurity. It was a cross-agency program launched by the Trump administration to promote the use of artificial intelligence in scientific research. In November 2025, Trump signed an executive order requiring the Department of Energy to build an AI research platform based on national laboratories. The platform would connect high-performance computing facilities with federal research data. Its purpose was to shorten the time needed for scientific research from raising a question to experimental verification. Biotechnology was identified as one of the major fields of the program. AI would be used to support experimental design, conduct simulation analysis, and develop predictive models. This provided a policy basis for the Department of Defense to use these capabilities in biosecurity research.

The Department of Defense introduced the Genesis Mission into the military field by participating in the construction of the platform. After becoming an official partner of the program, the department began to use the American Science and Security Platform built by the Department of Energy. It also worked with Lawrence Livermore National Laboratory to establish the Digital Biosecurity Forge, or DB-FORGE. Lawrence Livermore National Laboratory has strong high-performance computing capabilities and has carried out national security research for many years. It can provide a specialized environment for the Department of Defense to conduct biosecurity data analysis. The department moved from general participation in federal science and technology cooperation to the establishment of a specialized program. This change shows that the president's technology initiative was transformed into a military biosecurity arrangement through interagency cooperation and platform construction. The fiscal year 2027 budget also connected DB-FORGE with Executive Order 14292. This connection brought research security reviews further into platform operations and the program approval process.

DB-FORGE is mainly a high-performance computing platform for biosecurity research. Its purpose is not to directly produce vaccines or detection equipment. Instead, it provides computing support for biological threat analysis and the development of medical countermeasures. The platform can identify the features of biological threats and help select potentially effective medical countermeasures. The Department of Defense also plans to connect it with biomanufacturing and personnel health research. This will allow its computing capabilities to support the later development of protective products.

In terms of investment, the Department of Defense planned to provide \$30 million for DB-FORGE in fiscal year 2026. This amount would increase to \$150 million in fiscal year 2027. During the same period, the department's total planned investment in the Genesis Mission would increase from more than \$200 million to over \$1.3 billion. The continued increase in funding provides the resources needed to expand the computing capabilities of the platform. It also shows that DB-FORGE has become an important program through which the Trump administration promotes the use of AI in military biotechnology research.

4.2.2 Security Reviews

The Biological Threat Reduction Program and DARPA biotechnology programs were both established before the second Trump administration. The Biological Threat Reduction Program is part of the Cooperative Threat Reduction Program. It mainly uses overseas cooperation to improve the ability of partner countries to prevent and detect biological threats. Its purpose is to reduce the risk that pathogens and related technologies may be spread or misused. DARPA biotechnology programs were mainly included in budget categories such as "Biomedical Technology" and "Materials and Biological Technology." Their research results supported military personnel protection and responses to biological threats. Although the two types of programs had different tasks, both depended on annual budgets to continue their activities.

Through the fiscal year 2026 budget, the Trump administration introduced cost control and warfighting priorities into these existing programs. Executive Order 14222 required federal agencies to review consulting and support service contracts to reduce unnecessary administrative spending. The Department of Defense then applied this requirement to the Cooperative Threat Reduction Program. It changed the implementation conditions of the Biological Threat Reduction Program by reducing service contracts. At the same time, the department added a "Warfighting Performance" category to the DARPA budget and transferred some biotechnology programs into this category. The budget was no longer only a tool for resource allocation. It also became an important channel for the Trump administration to adjust existing military biosecurity programs. Contract reductions directly limited the resources available for program implementation, while changes in budget categories redefined the future direction of the programs.

The budget adjustments produced different changes in the two types of programs. Funding for the Biological Threat Reduction Program decreased from \$160.4 million in fiscal year 2025 to \$138.6 million in fiscal year 2026. After price changes were excluded, the program reduction reached \$25.2 million. The program depends on technical services to support overseas cooperation. Reductions in service contracts would limit the scale of some overseas activities, but they would not immediately change the program's basic goal of reducing biological threats.

For DARPA, projects worth \$278.121 million were transferred from the biomedical technology and biotechnology categories to the "Warfighting Performance" category. The related research mainly involved battlefield medicine, military personnel condition assessment, and responses to biological threats under forward deployment conditions. The research content of these programs did not immediately change with the new budget category. However, future funding would depend more directly on their contribution to personnel protection and continued military operations. Through the same budget process, the Trump administration limited the implementation of some existing activities while directing other biotechnology programs to serve military missions more directly.

4.3 Impact of Policy Adjustments on the Military Field

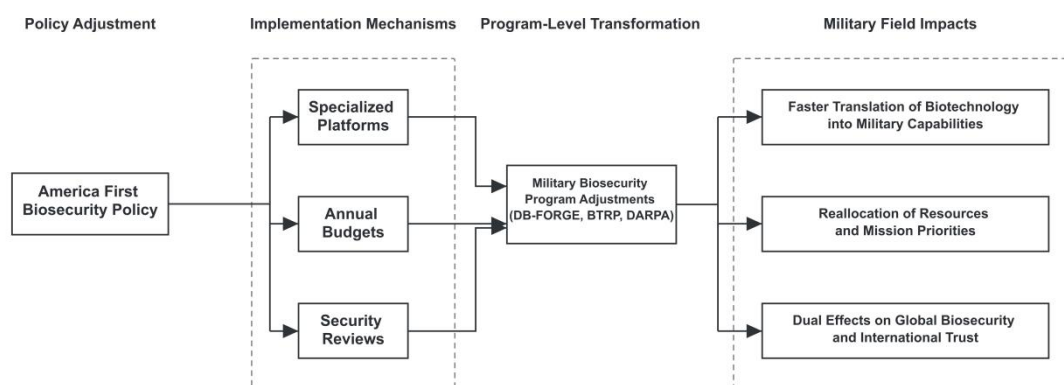
First, the biosecurity policies of Trump's second term improved the efficiency of transforming biotechnology into military capabilities. Artificial intelligence, high-performance computing, biological data, and national laboratory resources were brought together on a unified research platform. This allowed biological threat identification, experimental simulation, and the selection of medical countermeasures to take place in a more concentrated technological environment. The establishment of specialized platforms also strengthened connections among the Department of Energy, the

Department of Defense, and national laboratories. These connections were further developed into long-term military research arrangements. Biosecurity policy therefore accelerated the development of defense biotechnology capabilities.

Second, the policy adjustments changed the allocation of resources and the development direction of military biosecurity programs. Funding and service contracts for the Biological Threat Reduction Program were reduced. This reflected a change in the priority of overseas cooperation programs under the "America First" principle. Some DARPA biotechnology programs were transferred to the "Warfighting Performance" budget category. This showed that their future value would be judged more directly by their ability to meet actual military needs. The focus of American military biotechnology was moving away from long-term international cooperation and general risk prevention. Greater attention was given to programs that directly supported military operations.

These adjustments also had a dual impact on international biosecurity cooperation and the global security environment. On the one hand, stronger American military biosecurity capabilities could improve the country's ability to defend against terrorist attacks and respond to sudden biosecurity incidents. This could provide some support for global biosecurity. On the other hand, selective cooperation, restrictions on sensitive biological data, and the dual-use nature of biotechnology made it more difficult for other countries to understand the actual purpose of American research. Even research programs designed for civilian purposes could be viewed by other countries as efforts to gain military advantages. This could further increase instability in the international biosecurity environment.

Figure 1: Mechanisms and Military Impacts of U.S. Biosecurity Policy Adjustments



5. Conclusion

As a major power in global biotechnology innovation and military biodefense, the United States has an important influence on global biosecurity governance. During Trump's second term, the United States did not rebuild a complete biosecurity system. Instead, it adjusted existing policies under the frameworks of "America First" and great power competition. The main measures included reorganizing domestic governance institutions, strengthening biomanufacturing and supply chains, restricting the movement of sensitive biological data, and increasing the regulation of emerging biotechnology. As a result, the goals of American biosecurity policy were no longer limited to

preventing biological risks. They also served the pursuit of technological advantages, industrial security, and national competition.

In the military field, the Trump administration mainly applied these policy requirements to specific programs through specialized platforms, annual budgets, and security reviews. The construction of DB-FORGE, the reduction in funding for overseas biological threat reduction programs, and the transfer of DARPA projects to the "Warfighting Performance" category all showed that American military biotechnology placed greater emphasis on operational needs and actual military value. These adjustments could strengthen America's biodefense and military support capabilities. However, they could also increase international competition in biotechnology and weaken trust among countries, creating new challenges for global biosecurity cooperation.

In the future, American biosecurity policy may continue to be influenced by partisan politics, economic pressure, and changes in the international situation. It may also show a certain degree of change and uncertainty. However, the closer connection between biotechnology and national security has already become a clear trend. Biosecurity governance will increasingly move beyond the traditional fields of public health and non-proliferation policy. In response to the risks and challenges created by American biosecurity policy, the international community needs to balance biological risk prevention with technological innovation. Countries should strengthen communication and policy coordination and promote a more open, effective, and sustainable system of global biosecurity governance.

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Author Contributions

The author confirms sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation.

Availability of Data and Materials

No new datasets were generated or analyzed in this study. All policy documents, budget materials, reports, and other sources analyzed in this study are publicly available through the official websites and links provided in the reference list.

Conflicts of Interest

The author declares that they have no conflicts of interest to report regarding the present study.

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