MARSHALL®
BIORESOURCES

Animal Research & National Security: What's at Stake

PROTECTING AMERICA'S BIOMEDICAL READINESS

The United States has long been a global leader in biomedical innovation, developing vaccines, treatments, and medical countermeasures that protect public health and national security. While non-animal methods (NAMs) such as AI modeling, organoids, and organs-on-chips are advancing rapidly, animal research remains an important part of the current regulatory and scientific process for many medicines and therapies.

An abrupt or complete elimination of animal research in the U.S. before validated alternatives are fully available could significantly disrupt the nation's biomedical research pipeline. This would affect the development of vaccines, biologics, military medicine, infectious disease countermeasures, and other critical medical advancements that support pandemic preparedness and biodefense capabilities.

RISKS OF OFFSHORING CRITICAL RESEARCH

If animal research capacity is reduced or eliminated domestically, the result would not be less animal testing—it would be animal testing conducted with less oversight, less accountability, and reduced influence over research practices and quality standards. Much of the work would move overseas in order to meet existing regulatory expectations for safety and efficacy testing, creating new strategic vulnerabilities for the United States.

Many countries maintain significantly weaker protections than those required under the U.S. Animal Welfare Act. Animal care standards and data quality are directly connected, as animals that are stressed, poorly housed, or inadequately monitored produce inconsistent physiological responses.

Offshoring also compounds existing risks in the U.S. biomedical supply chain. These vulnerabilities are not hypothetical. China supplies an estimated one-quarter of the active pharmaceutical ingredients in generic drugs sold in the U.S., and roughly 41% of the key starting materials used to make them—with reliance exceeding 70% for certain antibiotics and vitamins.[1]

Its role is expanding beyond manufacturing, too: global licensing deals for Chinese-developed drugs surged from approximately $9 billion in 2020 to more than $137 billion in 2025,[2] positioning China to move into higher-stakes segments of drug development, including preclinical testing and safety toxicology. Growing national security concerns and increased scrutiny of some China-based biotechnology and research partnerships may further limit the ability of U.S. companies to rely on overseas research capacity in the future.

This is an ethical concern—and a scientific and national security issue. High-quality, reproducible data is essential to developing safe and effective medical products. Maintaining strong domestic research infrastructure helps ensure accountability, reliability, and rapid response capabilities during public health emergencies.

A RESPONSIBLE PATH FORWARD

The United States is advantaged through continued investment in scientifically validated NAMs that reduce, refine, and replace animal use whenever possible. At the same time, policymakers should consider how abrupt changes in policy weaken domestic biomedical research capacity before reliable alternatives are fully established.

A balanced approach protects both scientific progress and national preparedness—ensuring the U.S. remains a global leader in medical innovation, public health readiness, and responsible research oversight.

[1] Marta E. Wosińska, "When medicine supply chains become weapons: China's leverage and how the U.S. should respond," Brookings Institution, 2026, brookings.edu; see also "Pharmaceuticals are China's next trade weapon," Atlantic Council, 2026, atlanticcouncil.org.

[2] Olivia Kosloff, "Pharma and biotech leaders are destroying their own industry," STAT News, May 12, 2026, statnews.com, citing Reuters, "China biotech licensing boom hit record in 2026, pipeline swells," Reuters, February 13, 2026, reuters.com.

Where U.S. Standards Stand Out

Animal research conducted in the United States is subject to some of the world's most rigorous review, inspection, and animal care requirements, including:

- The federal Animal Welfare Act (AWA), enforced by the United States Department of Agriculture (USDA).
- Institutional Animal Care and Use Committees (IACUCs), which independently review research protocols.
- Voluntary AAALAC International accreditation programs that promote high standards of care and welfare.
- The 3Rs principle—**reducing** the number of animals used, **refining** how studies are conducted to minimize impact on animals, and **replacing** animals in research where possible and permitted—which is embedded in U.S. research culture and actively supported by federal funding agencies.