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# A biomedical military–industrial complex?

Judith Reppy*

*Peace Studies Program/Science & Technology Studies, 330 Rockefeller Hall, Cornell University, Ithaca, NY 14853, USA*

**Abstract**

Since the terrorist attacks and anthrax letters in 2001, the US government has multiplied the number of government programs and agencies concerned with biosecurity and greatly increased its spending on related projects, including a 20-fold increase in spending for biodefense research. This paper considers whether the surge in spending and the responses from industry, universities, and individual scientists have created a network of interlocking interests that constitute a new 'Biomedical Military–Industrial Complex' (BMIC), similar to the military–industrial complex that Eisenhower warned against in his Farewell Address. Despite the emergence of many practices associated with the military–industrial complex, the tentative conclusion is that the new institutions and practices in the area of biosecurity do not merit the BMIC label, at least not yet. In particular, the concern that knowledge production in the life sciences might be seriously distorted by the increase in biodefense funding is discounted because, since the rise of molecular biology in the 1970s, the biological sciences have steadily evolved toward a model in which university research is already heavily influenced by outside patrons and commercial interests.


*Keywords:* Biodefense; Biotechnology; Military-industrial complex

## 1. Introduction

In his Farewell Address to the nation, delivered in January 1961, President Eisenhower warned his listeners "to guard against the acquisition of unwarranted influence whether sought or unsought, by the military–industrial complex (Eisenhower, 1961). In the text immediately following this warning, Eisenhower spoke of [t]he prospect of domination of the Nation's scholars by Federal employment, project allocations, and the power of money. Today the US is at war in Afghanistan and in Iraq, wars that have lasted longer than World War II. Annual spending on national defense now stands at the highest level in real terms since 1945; that is, it exceeds by a considerable margin the spending of the 1950s which triggered Eisenhower's warning and the costs of the Vietnam War (US Department of Defense, 2008, p. 206). The return to high levels of military spending has raised again the question of the effect on US society of an enlarged military.

This paper considers this question in a narrower context—the impact on the life sciences of the shift in US national priorities following the terrorist attacks of September 2001. It focuses on the US because the response to the threat of terrorism, including bioterrorism, has been greatest there, and because the pre-conditions for a new manifestation of the military–industrial complex are well established in the norms and practices of the US security community, as described below. Urged on by the US, other countries have instituted some of the same controls on the life sciences and have increased their investment in biodefense activities (Hunger, 2007, p. 188). Some of these countries—for example, the United Kingdom and Canada—have considerable expertise in bioweapons technology and currently support biodefense research in their national laboratories. They differ, however, from the US in the greater emphasis that they put on international efforts to address the risk of biological weapons, e.g., by strengthening the Biological Weapons and Toxin Treaty, and in the much smaller size of their defense budgets, both absolutely and as a percent of gross domestic product (SIPRI, 2008). Thus, the focus on the US case seems warranted, especially because many of its policies have been adopted elsewhere.

*Tel.: +1 607 255 0029; fax: +1 607 255 6044.
*E-mail address:* jvr2@cornell.edu

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In the US, the anthrax letters of October 2001 raised anxieties about the potential threat of bioterrorism to a fever pitch and triggered a wave of new regulation and government programs to address the threat. The subsequent expansion of engagement by the security community with the life sciences can be measured by the near tripling in funding for bioweapons prevention and defense by federal security agencies and the 1000-fold increase in such spending by the Department of Health and Social Services (Center for Arms Control and Non-Proliferation, 2007). Further evidence includes the creation of at least a half a dozen new scientific advisory boards focused on biological developments as they relate to national security, not to mention new journals (e.g., *Biosecurity and Bioterrorism*), new sections established in professional societies, and proposals for specialized venture capital funds to support start-up companies in the field (Buchanan Ingersoll, 2001). The large expansion post-2001 in funding related to biological weapons and the threat of bioterrorism have generated a new set of research priorities and new, security-related institutions in the field of biology which are particularly focused on biomedical topics; the question is whether those changes can rightly be characterized as a biomedical military–industrial complex (BMIC).

## 2. Background: the military–industrial complex

Mills led the way in identifying the expanded role of military interests in American society in *The Power Elite* (1956), a book that generated a scholarly literature of its own (Robinson, 2005). Following Eisenhower's farewell address, the phrase, military–industrial complex (MIC), entered the public discourse and was regularly invoked in the debates of the 1960s and 1970s over military budgets, the causes of the Vietnam War, and the structure of American society. It proved a capacious concept, able to be reconciled with almost any empirical observation and thus subject to the critique that it is inherently unfalsifiable (Rosen, 1973). At the same time, it provided a framework for analyzing the societal effects of Cold War ideology, high military budgets, and the circulation of elites between business and government, effects that have been remarkably durable. Many observers were persuaded by the general argument that decisions on military budgets and specific weapons programs were determined—or at least strongly influenced—by the special interests of defense contractors, the military services, and members of Congress with a large military presence in their districts, rather than by an objective analysis of national security requirements, and that this coalition of elites might, in Eisenhower's words, endanger our liberties or democratic processes.

In addition to fostering the growth of networks in support of large-scale weapons projects and military bases, military support during the Cold War had a significant impact on the scientific base in the US, especially in physics and engineering. Some scholars have argued that the high levels of military spending for research in these fields had a major effect on the production of scientific knowledge (Forman, 1987; Dennis, 2003). This 'distortionist' effect is more than the simple observation that increases in funding will tend to increase the number of scientists working in the favored field. It is a claim that the very character of the knowledge produced under a regime of military funding will be different than it would otherwise be, owing to such features as government secrecy, requirements for frequent progress reports, the military preference for experiment over field research, and the relative neglect of problems that are seen as irrelevant to military needs. Ronald Doel, for example, has argued that because the US Navy's interest in oceanography was focused on the physical properties of the ocean, research on living marine organisms was neglected, marginalizing those scientists interested in a more holistic approach (Doel, 2003, p. 653). In short, if we accept the argument that new knowledge is influenced by the conditions under which it is produced, we would expect the MIC to have shaped the scientific knowledge produced in the many fields of inquiry that attracted military funding.

Although interest in the MIC concept waned after the Vietnam War, it re-emerged as an iron triangle (Adams, 1982) or a set of military–industrial networks (Gummett and Reppy, 1990, pp. 292–294) to explain the continued strength of the military sector in the light of a changing security environment. During the 1990s, as defense budgets decreased in response to changes in the international security situation, a wave of mergers reduced the number of defense contractors dramatically. The Iraq War of 2003, however, has demonstrated anew the close ties that bind the major defense contractors to the Pentagon and Congress, from the revolving door of executive elites moving between the industry and government positions to the Political Action Committees that fund the campaigns of the members of the armed forces congressional committees (Mandel, 2007; Center for Responsive Politics, 2007). Even more is revealed when a scandal becomes newsworthy, as happened with the Druyan case in 2003 and the scandal surrounding Congressman Randy Cunningham in 2005 (Condon and Stern, 2007).

Large defense contractors in the aerospace industry and their allies in the Department of Defense (DOD) and on Congressional committees formed the core of the classic MIC. Since 9/11, however, new players have emerged, particularly around the issue of bioterrorism. The Department of Homeland Security (DHS), established in 2002 to provide a single, cabinet-level department with the responsibility of protecting the American homeland, has taken over some functions that were previously in DOD. Homeland Security has struggled to establish control over its disparate elements and to establish communication among them (Government Accountability Office (GAO), 2007). Its responsibilities include, *inter alia,* border control, emergency preparedness, and protection against terrorism, including bioterrorism, where it is the third largest spender,