

R&D Funding for a New Strategic Environment June 22, 2005

The U.S. leads the world in spending on research and development (R&D). The U.S. scientific establishment is in many areas foremost in the world. America's "soft infrastructure" –the laws, capital markets, and culture that turn research into innovation and innovation into economic and military strength—give the U.S. a major advantage over competitors. This positive picture masks an enduring erosion which, absent any change, will damage U.S. national security.

The last fifteen years have seen the emergence of a security environment that is very different from what many Americans expected at the end of the Cold War. Terrorism is the immediate threat, but the long term and potentially greater challenge for the U.S. comes from strategic competitors, other large nations that are striving to match and exceed the United States in terms of economic growth and technological prowess. Each potential competitor has its strengths and weaknesses, and in relative terms, the U.S. is stronger. But these terms are shifting in ways that are unfavorable to the United States. Three interconnected trends explain this shift. They are the rise of Asia; the transition to an information economy; and the effects of growing international economic integration.

U.S. funding for R&D is at a record high, but we are underinvesting for this new and often underestimated strategic competition. In the strategic competition of the Cold War, the U.S. faced an opponent with overt political and military goals and a profoundly different political and economic system. The twin shocks of the 1950s – first the explosion of atomic and hydrogen bombs and then the launch of Sputnik, provided a sense of urgency that lead America's political leaders to make the investments needed to pull ahead. Today, the challenge is less obvious. There have been no technological shocks like Sputnik. Strategic competition is not a crisis, but underinvestment today will erode security in the future.

Some of the consequences of underinvestment are already apparent – a shortage of U.S. citizen scientists to work in sensitive national security programs – while other consequences –shortfalls in the research that feeds innovation, may not appear for another decade. Underfunding is a particular problem for several important scientific fields. Research in physics, mathematics, computer sciences, and engineering provides the basis for better military technology and enables advances in many other areas of research, but funding levels are inadequate to meet future security needs.

To help frame public discussion on this important topic, CSIS will hold a seminar at 9:00 AM on June 22 where participants will discuss the security implications of underinvestment, priority areas for spending, and alternate approaches to funding strategically essential research.