OP-ED CONTRIBUTOR
Research Worth Fighting For
By JOHN M. DEUTCH and WILLIAM J. PERRY   April 13, 2005 page A29

OF the Pentagon's $419.3 billion budget request for next year, only about $10.5 billion - 2 percent - will go toward basic research, applied research and advanced technology development. This represents a 20 percent reduction from last year, a drastic cutback that threatens the long-term security of the nation. Secretary of Defense Donald Rumsfeld should reconsider this request, and if he does not, Congress should restore the cut.

These research and development activities, known as the "technology base" program, are a vital part of the United States defense program. For good reason: the tech base is America's investment in the future. Over the years, tech base activities have yielded advances in scientific and engineering knowledge that have given United States forces the technological superiority that is responsible in large measure for their current dominance in conventional military power.

Research into basic understanding of methods for reducing radar signatures in the 1970's, for example, gave rise to "stealth" technology. Advances in electronic sensor technology enable the vast collection of information from satellites, and past work on computer systems permits distribution of this information in near real-time to military commanders. The combination of near-real-time intelligence and precision munitions are the heart of the so-called "revolution in military affairs" that avoids large and costly systems and approaches.

These advances require years of sustained effort by university, industry and government researchers. If the Pentagon does not make the required investments today, America will not have dominant military technology tomorrow.

The technology base program has also had a major effect on American industry. Indeed, it is the primary reason that the United States leads the world today in information technology. American companies not only draw heavily on the Pentagon's work, but they have also come to depend on it. The research and development programs of many of America's major information technology companies are almost exclusively devoted to product development.

It was the investment of the Defense Advanced Research Projects Agency in a network known as ARPA-net in the 1960's and 70's, for example, that gave rise to the

Internet. The JPEG file format for digital images is based on software and standards developed by the Pentagon. The global positioning satellite system, first developed for precision-guided munitions, is now used in many cellphones and has the potential to revolutionize our air traffic control system. America's ability to translate the Pentagon's technology base into commercial achievement is the envy of the world.

Of course, the administration and Congress need to make tough budget choices. But to shift money away from the technology base to pay for Iraq, other current military operations or research on large, expensive initiatives, is to give priority to the near term at the expense of the future. This is doubtful judgment, especially at a time when the nature of the threat confronting America is changing. New threats, like catastrophic terrorism and the spread of weapons of mass destruction, urgently call for new technology.

There should be no doubt that basic research will continue to make a contribution. Robotics, artificial intelligence, biotechnology, brain and cognitive sciences, nanotechnology, large-scale modeling and simulation: all these fields can have a huge impact. If properly supported, basic technology work is likely to lead to unprecedented results.

Mr. Rumsfeld has long championed the need to transform the military and exploit new technology. He has supported the technology base in the past and has urged the adoption of a more long-term view of security needs. He should, then, be willing to review and reverse the Pentagon's request for reducing its technology base. He should understand that short-term budget requirements for the armed services always tend to push out the technology base program - unless the Pentagon leadership supports it.

Perhaps the reason for this year's reduction is the mistaken belief that a one-year gap in financing does not matter, because innovation takes so long. But tech base advances occur because of stable financing. Fluctuating budgets cause wasted effort.

It is possible that Congress will restore the cuts in technology base programs and correspondingly reduce some other part of the defense budget. But Mr. Rumsfeld should not depend on Congress. It would be vastly better if the Pentagon understood the importance of the tech base effort, and acted on that understanding.

The Department of Defense's technology base programs have been an important factor in giving America the dominant military force in the world. They have also helped many American information technology companies become successful. The

Pentagon should maintain its dedication to these programs, and that will require leadership from the secretary of defense - as well as support from Congress.

John Deutch, a professor of chemistry at M.I.T., was deputy secretary of defense from 1994 to 1995. William J. Perry, a senior fellow at the Hoover Institution, was secretary of defense from 1994 to 1997.