

DEPARTMENT OF DEFENSE

Defense Research Merits Strong Federal Support

Increase funding for basic 6.1 research by \$200 million in FY06

AAU recommends increasing funding for defense basic research (budget category 6.1) programs by \$200 million in FY06 to \$1.7 billion. These additional funds should be directed to programs aimed at meeting critical defense research and workforce needs, including the University Research Initiative and the newly created National Defense Education Program.

Increased support for defense basic research is vital to the well-being of the nation. As the dangers of high technology terrorism and information warfare multiply, DOD requires new and more sophisticated technologies. The knowledge required to generate those technologies is critically dependent upon DOD's sustained investments in long-term, cutting-edge, defense-oriented research and fundamental knowledge generated at U.S. universities.

Restore the historic commitment to basic defense research

AAU is particularly concerned about on going shifts by DOD away from support of fundamental, long-term, basic research toward meeting more short-term objectives. This shift may cause serious harm in the long run. In the early 1980s, basic research accounted for nearly 20 percent of total S&T funding. Today it accounts for less than 12 percent. AAU agrees with the recommendation by the Council on Competitiveness in its December 2004 *Innovate America* report that the Defense Department's historic commitment to pioneering discoveries be restored by devoting not less than one-fifth of the Defense S&T budget to basic research.

Devote at least three percent of the DOD budget to S&T

To ensure the future safety and technological superiority of the U.S. fighting force, AAU urges the Congress to devote at least 3 percent of the Department of Defense (DOD) budget to core S&T programs. These programs are composed of basic research (6.1), applied research (6.2) and advanced technology development (6.3) in the Army, Navy, Air Force, and Defense-Wide accounts. The 3-percent funding level has been recommended by the Defense Science Board (1998) and is contained in the Quadrennial Defense Review (2001).

University-Based Research Has Been Critical to the Warfighter and to Maintaining U.S. Military Superiority

Past knowledge and discoveries generated at U.S. universities have made major contributions to the nation's defense efforts. These breakthroughs include inertial navigation, radar, the global positioning system (GPS), precision guidance, advanced materials, and reduced radar cross-section technology. DOD-funded university research helped the U.S. military rewrite the rules of war in Afghanistan and Iraq. For example, university research was critical in development of the thermobaric—or “bunker buster”—bomb used against al Qaeda and Taliban forces operating from virtually impenetrable mountain caves in Afghanistan. Because of past investments in basic and applied research, this weapon was developed and deployed successfully in only 67 days. *If the federal government shortchanges basic defense research, the nation will feel the results not only now but 10 and 20 years from now.*

University Research Enlists Today's Top Scientists for National Defense While Training Tomorrow's Experts

University-based research produces important advances in knowledge and keeps top scientists and engineers involved in the academic disciplines that underpin national defense. Just as important, students who receive hands-on research training in these fields become the highly qualified scientists and engineers who staff defense research laboratories and major defense contractors.

DOD Supports Disciplines and Education Vital to National Security

DOD-funded university research is concentrated in fields where advances are most likely to contribute to national defense. The Defense Department provides 71 percent of federal funding for electrical engineering, 46 percent for materials engineering, 38 percent for computer sciences, and 30 percent for ocean sciences. DOD also sponsors fellowships and provides significant support for graduate students in critical defense fields such as computer science and aerospace and electrical engineering.

DOD Plays a Significant Role in Supporting University-Based Research and Students

DOD is the third largest federal sponsor of university research. More than 300 universities and colleges conduct DOD-funded research and development. Universities receive more than 50 percent of basic (6.1) defense research funding. They also receive substantial funding for applied (6.2) defense research.