



### DEPARTMENT OF DEFENSE (DoD)

#### SCIENCE AND TECHNOLOGY (6.1 - 6.3)

APLU FY2021 Request: \$17.038 billion

FY2021 PBR = \$13.911B; FY2020 = \$16.074B; FY2019 = \$16.050B

To ensure the national security of the United States, it is critical that our military remain on the leading edge of scientific and technological capabilities. Defense S&T is essential to our national security and global military superiority. The S&T program supports cutting-edge research that leads to the development of new weapon systems, defense and safety capabilities, and warfare technologies.

We must maintain a strong investment in our defense science and research efforts if we intend to stay ahead in our defense capabilities and ahead of our adversaries. Tomorrow’s military capabilities depend on the R&D investments we make today. Through partnerships with the research community, Department of Defense basic research is securing our nation’s future military capabilities in areas such as quantum computing, artificial intelligence, and advanced autonomous systems.

#### BASIC RESEARCH (6.1)

APLU FY2020 Request: \$2.759 billion

FY2020 PBR = \$2.319B; FY2020 = \$2.603B; FY2019 = \$2.529B

Discoveries from defense basic research have led to paradigm shifts in military capabilities that are supporting the men and women in the military today. In addition to advocating for strong funding for all defense basic research efforts, APLU encourages a four percent increase, consistent with the American Academy of Arts & Sciences report, *Restoring the Foundation: The Vital Role of Research in Preserving the American Dream*<sup>1</sup>, for each of the following basic research program elements:

Agency/Account	Item	Program Element (PE)	APLU Request (in thousands)
Army RDT&E	Defense Research Sciences	601102A	375,749
Army RDT&E	University Research Initiatives	601103A	93,129
Army RDT&E	University and Industry Research Centers	601104A	134,794
Navy RDT&E	University Research Initiatives	601103N	177,921
Navy RDT&E	Defense Research Sciences	601153N	491,659
Air Force RDT&E	Defense Research Sciences	601102F	377,473
Air Force RDT&E	University Research Initiatives	601103F	189,591
Defense-Wide RDT&E	DTRA Basic Research Initiatives	601000BR	27,591

<sup>1</sup> American Academy of Arts and Science, “Restoring the Foundation: The Vital Role of Research in Preserving the American Dream” 2014 available at [https://www.amacad.org/sites/default/files/academy/multimedia/pdfs/publications/researchpapersmonographs/AmericanAcad\\_RestoringtheFoundation.pdf](https://www.amacad.org/sites/default/files/academy/multimedia/pdfs/publications/researchpapersmonographs/AmericanAcad_RestoringtheFoundation.pdf)

Defense-Wide RDT&E	Basic Research Initiatives	601110D8Z	75,126
Defense-Wide RDT&E	National Defense Education Program	601120D8Z	152,718

Of particular interest in FY2021, APLU urges Congress to provide robust funding for both the **Defense Threat Reduction Agency (DTRA)** Basic Research program and the **Minerva Research Initiative**. DTRA enables DoD to counter and deter weapons of mass destruction and other threats to our nation’s security. Through DTRA grant funding, subject-matter experts, often at universities, provide effective deterrence solutions as well as improved capability development for the U.S. military. For example, through advanced data analytics and modeling simulations, universities work with DTRA to support fast, effective government responses to potential biological attacks and epidemics such as the Ebola virus. We request \$27,560,000 for DTRA Basic Research Initiatives.

APLU also supports the Minerva Research Initiative (MRI), which serves as the Department’s signature social science basic research program that funds university-led teams to address problems of strategic importance to U.S. national security. Through MRI grants, university researchers help the DoD better understand complex issues such as statecraft, influence, and regional power balances; alliances and burden sharing; economic interdependence and security; and autonomy, artificial intelligence, machine ethics, and social interactions. Thanks to university research funded through the Minerva Research Initiative, DoD personnel have the tools to better understand sociopolitical implications in various regions that impact national security and will be more adaptable to future technological capabilities such as artificial intelligence. We request \$17,000,000 for the Minerva Research Initiative.

APLU also encourages support of the applied program elements delineated below. The Defense-Wide Manufacturing Science and Technology Program supports the Manufacturing USA network. Manufacturing USA is a network of 14 manufacturing institutes where universities, industry, and government partners collaborate to develop and accelerate the commercialization of innovative manufacturing technologies. Currently, the DoD sponsors eight of the 14 institutes. The goal of DoD investments in the Manufacturing USA network is to support regional hubs to accelerate technological innovation into commercial application and concurrently develop the educational competencies and production processes via shared public-private sectors. Manufacturing leadership is essential to sustaining the U.S. military’s technical superiority and global dominance.

Healthy soldiers and families lead to a strong military. It is imperative for DoD to contribute to curing diseases that affect not only men and women in the military, but also the public since we have an all-volunteer force. The Undistributed Medical Research/Peer-Reviewed programs play a vital role in ensuring t the U.S. has the medical technologies necessary to enable military readiness and serve those who have been wounded on the battlefield. CDMRP grants are awarded to universities to study illnesses and therapeutic remedies to areas such as Alzheimer’s Disease, kidney and lung cancer, and ALS.

Agency/Account	Item	Program Element (PE)	APLU Request (in thousands)
Defense Wide RDT&E	Defense-Wide Manufacturing S&T Technology Program	603680D8z	209,241
DHP RDT&E	Undistributed Medical Research/ Peer-Reviewed (CDMRPs)	N/A	1,712,536

## DEFENSE ADVANCED RESEARCH PROJECTS AGENCY (DARPA)

APLU FY2021 Request: \$3.666 billion

FY2021 PBR = \$3.566B; FY2020 = \$3.458B; FY2019 = \$3.432B

DARPA has a singular and important mission: to make pivotal investments in breakthrough technologies for national security. DARPA funds high-risk, high-reward research at universities and with industry members which has led to many significant defense technologies, some of which have also evolved into remarkable civilian applications. For example, DARPA funded projects have led to military capabilities such as precision weapons and stealth technology, but also such icons of modern civilian society such as the Internet, automated voice recognition and language translation, and Global Positioning System (GPS) receivers small enough to embed in numerous consumer devices.

DARPA searches for and funds potentially transformational projects by working within an innovation ecosystem that includes academic, corporate, and governmental partners, with a constant focus on the nation's military needs. As Congress seeks to optimally allocate limited resources, cutting-edge national security research should remain a top priority.

### **About the Association of Public and Land-grant Universities**

*APLU is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities. With a membership of over 200 public research universities, land-grant institutions, state university systems, and affiliated organizations, APLU's agenda is built on the three pillars of increasing degree completion and academic success, advancing scientific research, and expanding engagement. Annually, our U.S. member campuses enroll 4.3 million undergraduates and 1.2 million graduate students, award 1.2 million degrees, employ 1.1 million faculty and staff, and conduct \$46.7 billion in university-based research.*