



April 21, 2023

The Honorable Jon Tester
Chairman
Subcommittee on Defense
Committee on Appropriations
United States Senate
Washington, DC 20510

The Honorable Ken Calvert
Chairman
Subcommittee on Defense
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

The Honorable Susan Collins
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States Senate
Washington, DC 20510

The Honorable Betty McCollum
Ranking Member
Subcommittee on Defense
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Tester, Chairman Calvert, and Ranking Members Collins and McCollum,

On behalf of the Coalition for National Security Research ([CNSR](#)), a 100-member-plus coalition of industry, academia, scientific and professional associations, and non-profits, we write to thank you for your support for the Defense Science and Technology (S&T) program in the fiscal year (FY) 2023 Appropriations omnibus bill. We sincerely appreciate that the committees have provided a \$20 billion increase for the Department's Research, Development, Test, and Evaluation (RDT&E) accounts over FY 2022 appropriated levels. In the coming fiscal year, we urge the 118th Congress to continue to strive for bipartisanship in funding critical agencies like DoD in a timely manner. The timeliness of the President Budget Requests and Appropriations bills are critical to effective governance, predictability, and budget execution. The failure of Congress to pass on-time appropriations would add additional delays and costs into an already strained defense budgeting and acquisition process.

While we understand the many challenges appropriators face in agreeing on funding levels, we remain concerned that funding for Defense S&T and Defense basic research are well below recommendations from the Defense Science Board (DSB)¹ and National Academies². These groups recommend the Department of Defense (DoD) fund Defense S&T at 3 percent of the Department's overall budget and Defense basic research at 20 percent of the Defense S&T. While providing a helpful increase, the FY 2023 appropriations bill falls short of these goals, posing a risk of losing our technical advantage. The FY 2024 President's budget request proposes a nearly 4 percent increase to RDT&E overall that would prioritize funding for deliverable capabilities. While funding for systems and development that leads to production is critical, in the budget request it comes at the expense of vital funding for fundamental science and technology research accounts. Basic (6.1), applied (6.2), and advanced (6.3) research is key

¹ <http://www.dtic.mil/dtic/tr/fulltext/u2/a403874.pdf>

² <https://www.nap.edu/catalog/11463/rising-above-the-gathering-storm-energizing-and-employing-america-for>

to ensuring global leadership in science and technology and maintaining a robust research enterprise. Programs funded by these accounts are DoD's main means of supporting academic labs and research institutions to make breakthrough discoveries and innovations that have transformed the National Security Industrial Base (NSIB).

Overall Defense S&T Funding

If the United States military is to maintain its technological advantage during the era of strategic competition, it is imperative that we make robust investments in Defense S&T, including strengthening the future defense workforce. In order to strengthen our defense workforce, increased investment is needed in programs that are inclusive of underrepresented communities in STEM and skill trades. DoD and congressional leadership continue to cite concerns about the People's Republic of China's (PRC) military power; we know that the PRC is not only continuing to pursue leadership in key technologies with significant military potential, but the PRC is now leading or near the lead in numerous scientific fields such as artificial intelligence (AI), cybersecurity, quantum communications, high-performance computing, 5G mobile networks, biotechnology, and advanced materials and manufacturing³. These are all areas the Department's Undersecretary for Defense Research and Engineering has identified as a priority to envision U.S. technological leadership and advance deliverable capabilities.⁴ In order to accomplish this vision, and remain competitive with competitors like the PRC, further investment in Defense S&T is necessary.

As noted by the DSB, adequate S&T investment can minimize the risk of a competitor developing a capability that puts the U.S. at a national security disadvantage⁵. This is the exact situation we find ourselves in as the PRC continues to advance its position as a global technological innovator. The U.S. holds an advantage in overall innovation leadership, but the PRC and others are investing heavily to catch up. We can maintain our national security technical advantages over the PRC and other strategic competitors if we robustly fund Defense S&T. Moreover, conflict and uncertainty in regions like Ukraine and Taiwan underscore the importance of maintaining our nation's competitive edge in military capabilities, which are enabled by basic and applied research conducted at universities and research organizations across the nation.

We urge Congress to reject the proposed cuts to 6.1, 6.2, and 6.3 research accounts. We urge Congress provide at least a 6 percent increase over the FY 2023 enacted level for 6.1 program elements in FY 2024 to ensure we are investing in the research and development (R&D) that will create the technological capabilities to help the U.S. military in the short-and-long-term and prevent competitor nations from gaining technological advantages.

Defense Basic Research Funding

The defense basic research programs have supported R&D that has provided the U.S. military with revolutionary technological capabilities. Advances in hypersonics testing, various quantum technologies, creating semiconductors fueling defense radar systems, improvements in solar cell

³ <https://media.defense.gov/2021/Nov/03/2002885874/-1/-1/0/2021-CMPR-FINAL.PDF>

⁴ https://www.cto.mil/wp-content/uploads/2022/02/usdre_strategic_vision_critical_tech_areas.pdf

⁵ <https://dsb.cto.mil/reports/1990s/DefenseScienceandTechnologyBaseforthe21stCentury.pdf>

efficiency, laser technologies, stealth capabilities, night vision, GPS, sonar, radar, precision munitions, biosensors, and near-real-time delivery of battlefield information all stem from DoD-sponsored basic research. Defense basic research also helps strengthen the industrial base workforce by attracting the most creative minds to solve complex military challenges and training students in fields of critical interest to DoD⁶.

If the U.S. is to sustain our long-term U.S. military supremacy, Congress must increase investments in defense basic research that will create the technologies necessary to succeed in the era of strategic competition. *Defense basic research initiatives are the building blocks of the defense and national security enterprise.* The Basic Research Initiatives program element (PE 0601110D8Z) supports DOD's basic research enterprise through programs critical to research institutions such as Strategic Support for Basic Research (SSBR), the Minerva Research Initiative, and the Vannevar Bush Faculty Fellowship Program.

SSBR supports oversight, policies, and initiatives that allow for defense basic research investments to result in high reward, transformative breakthroughs in S&T. SSBR supports the five goals of the basic research offices which includes improving the science and engineering workforce and enhancing university-industry collaboration – objectives which are key to a robust science and engineering enterprise. Increased funding is necessary so the Office of Basic Research can continue to oversee and execute initiatives that are key to continuous scientific growth. The Vannevar Bush Faculty Fellowship program is considered DoD's most prestigious and competitive research award as it funds bold “blue sky” research that has the potential to revolutionize scientific disciplines and the S&T research enterprise. In FY 2022, the Department received over 300 white papers, and accepted only 9 fellows.⁷ Increased funding for the program will allow for the continued support of transformative fundamental research from talented researchers across the nation.

Minerva serves as DoD's signature social science basic research program providing an important source of new ideas to better understand social, behavioral, cultural, and political aspects that are inherent to our security stability. As noted by DoD officials, many of the national security challenges we face are social or have social elements to them. Minerva research is informing topics like cyber defense, social impacts of autonomy, deterrence, and sociopolitical instability, and supporting the societal and technological objectives of the 2022 National Defense Strategy by providing a basis for integrated social sciences (religion, politics, social culture, and history) into DoD's tactical and strategic operations.

Minerva, SSBR, the Vannevar Bush Fellowship program, and all other basic research initiatives remain critical to the Department, and increased funding for new programs will allow for continued scientific discovery and new breakthroughs. U.S. technological superiority is increasingly threatened by great strategic powers who have grown their scientific and engineering workforce and capabilities during the last two decades. The Department must be provided with the necessary support to vigorously invest in basic research, which is critical to advancing breakthrough technologies and innovative research that is foundational for

⁶ <https://dsb.cto.mil/reports/2010s/BasicResearch.pdf>

⁷ <https://www.defense.gov/News/Releases/Release/Article/3092053/department-of-defense-announces-2022-class-of-vannevar-bush-faculty-fellowship/>

technological progress in the U.S. ***CNSR urges Congress to reject the staggering \$21.8 million cut proposed for Basic Research Initiatives in the FY 2024 President’s budget request, and provide at least \$99.3 million, or a \$5.6 million increase over the enacted level for Basic Research Initiatives.***

CNSR also urges Congress to increase funding for the ***Defense Established Program to Stimulate Competitive Research (DEPSCoR)***. DEPSCoR, which is also funded through Basic Research Initiatives, funds research in communities that typically are not involved in defense research, which not only promotes equity but also increases the workforce and talent base that DoD can utilize in overcoming technological military challenges.

The coalition commends Congress for its support of the ***University Research Initiatives (URI)*** program element at the Army, Navy, Air Force, and Space Force in FY 2023. Investments in URIs have resulted in new domestic semiconductor manufacturing capabilities, advances in quantum computing and communication, military drones, nanotechnology, and sensor enabling navigation in GPS compromised environments among many other military technological capabilities. The ***Multidisciplinary University Research Initiative (MURI)*** and ***Defense University Research Instrumentation Program (DURIP)***, components of URIs, provide the research funding and infrastructure to enable the creation of transformational military technologies. Unfortunately, both MURI and DURIP are dramatically underfunded. According to DoD, 312 MURI proposals⁸ and 375 DURIP proposals⁹ were not funded in FY 2022. ***As a result, CNSR strongly urges Congress to provide at least \$114.2 million for Army URIs, \$156.2 million for Navy URIs, and \$218.6 million for Air Force URIs. We also urge Congress to reject the proposal to eliminate Space Force URI funding and provide \$31.8 million in FY 2024.***

The President’s Budget Request included cuts to ***Defense Research Sciences (DRS)*** program elements at the Army, Navy, and Air Force. DRS supports a wide variety of basic research in the physical, engineering, and environmental sciences often serving as the foundation for new capabilities. ***CNSR urges Congress to reject these cuts and fund Defense Research Sciences at a minimum of \$415.3 million, \$574.1 million, and \$430.5 million for the Army, Navy, and Air Force respectively. CNSR similarly urges Congress to reject the proposal to eliminate the Space Force Defense Research Science program and fund it at least at \$26.5 million.*** The President’s budget request also proposes cuts to the ***National Defense Education Program (NDEP)***, which is critical to the slowing national security R&D pipeline. ***NDEP supports consortia of two-year institutions and community colleges and was only able to make five awards in FY 2022¹⁰. CNSR urges Congress to reject proposed cuts and provide NDEP with at least a \$10.4 million increase over the FY 2023 enacted level.***

Defense Advanced Research Projects Agency (DARPA) Funding

DARPA’s ability to create truly revolutionary new military capabilities is well documented. With no intramural research laboratories, DARPA relies on partners, such as CNSR members, to conduct transformational scientific research to advance military technologies. In fact, more than

⁸ <https://www.defense.gov/News/Releases/Release/Article/2953234/department-of-defense-announces-university-research-funding-awards/>

⁹ <https://www.defense.gov/News/Releases/Release/Article/3226555/dod-awards-59-million-in-university-research-equipment-awards/>

¹⁰ <https://www.defense.gov/News/Releases/Release/Article/3159722/dod-awards-national-defense-education-program-cooperative-agreements/>

90 percent of DARPA's R&D budget is awarded extramurally¹¹. DARPA-sponsored research with industry and the academic community has led to stealth capabilities, unmanned aerial systems, metamaterials, advances in microelectronics and the computer chips fueling AI technologies. While CNSR finds the work of DARPA significant, in FY 2024 Congress should focus on supporting core research programs out of the Services, OSD, and RDT&E accounts. ***Therefore, CNSR suggests Congress should provide robust support to DARPA consistent with the need for creating game changing technologies to ensure we outpace near peer competitors. This funding would allow DARPA to continue spearheading R&D in hypersonics, biological technologies, semiconductors, and AI capabilities.***

Defense Medical Research Funding

To maintain a strong military, the U.S. must have healthy families and soldiers. Consequently, it is imperative that DoD contribute to curing diseases that affect the women and men in the military, their families, veterans, and the broader public. The defense medical research programs also help ensure that the U.S. has the medical technologies necessary to enable military readiness and serve those who have been wounded on the battlefield. Furthermore, development in battlefield medicine can contribute to advances which benefit civilian medical practice such as regenerative medicines, vaccine development, and emergency field treatments. For all these reasons, CNSR is particularly supportive of the Congressionally Directed Medical Research Programs (CDMRP), which fund high-risk, high-impact research that is complementary but not duplicative of efforts at other federal agencies, according to the National Academies¹². Unfortunately, the President's budget request would cut the Defense Health Program overall by 69.4 percent, which funds CDMRP. As CDMRP funding is typically added by Congress during the appropriations process, ***CNSR urges Congress to appropriate robust funding to CDMRP.***

Thank you for your commitment to a robust Defense S&T program. Please do not hesitate to contact us if CNSR can be of any service as you work to finalize the FY 2024 Defense Appropriations bill.

Sincerely,

John Latini and Heather Bloemhard
Co-Chairs

¹¹ <https://nces.nsf.gov/pubs/nsf22323/table/7>

¹² <https://www.nap.edu/catalog/23652/evaluation-of-the-congressionally-directed-medical-research-programs-review-process>