



December 10, 2021

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

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

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

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

Dear Chairman Tester, Chairwoman McCollum, and Ranking Members Shelby and Calvert,

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, I write to thank you for your support for the Defense Science and Technology (S&T) program in the Senate and House fiscal year (FY) 2022 Defense Appropriations bills. While we remain concerned that funding for Defense S&T and Defense basic research are well below recommendations from the Defense Science Board (DSB)¹, National Academies², and National Security Commission on Artificial Intelligence (NSCAI)³, we appreciate the committees rejecting the dramatic cuts proposed in the President's budget request. CNSR largely supports the funding levels in the Senate bill, unless noted otherwise in this letter, and urges Congress to avoid a year-long Continuing Resolution (CR) and pass the full-year FY 2022 Defense Appropriations bill as quickly as possible.

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. As the U.S. Department of Defense (DoD) recently noted in its report on the People's Republic of China's (PRC) military power, 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), quantum communications, high-performance computing, 5G mobile networks, biotechnology, and advanced materials and manufacturing⁴. 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

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>

³ <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf>

⁴ <https://media.defense.gov/2021/Nov/03/2002885874/-1/-1/0/2021-CMPR-FINAL.PDF>

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. However, we can maintain our national security technical advantages over the PRC and other strategic competitors if we robustly fund the Defense S&T program.

We urge Congress to provide at least the Senate level of \$17.6 billion for Defense S&T in the final FY 2022 Defense Appropriations bill 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 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. *CNSR greatly appreciates that both the House and Senate rejected the president's budget request to cut Defense basic research by 14.5% or more than \$388 million.*

The coalition commends both the House and Senate for their support of the ***University Research Initiatives*** program element at the Army, Navy and Air Force. Investments in University Research Initiatives 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 University Research Initiatives, 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, 273 MURI proposals⁷ and a staggering 592 DURIP proposals⁸ were not funded in FY 2021. ***As a result, CNSR strongly supports the plus ups in both the House and Senate bills for University Research Initiatives, however we are particularly supportive of the Senate bill as it provides at least \$100 million for DURIPs at the Army, Navy and Air Force.***

We are grateful for Congress' continued support of the ***Minerva Research Initiative*** and appreciate the rejection of the President's budget to drastically cut Minerva. As noted by DoD

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

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

⁷ <https://www.cto.mil/2021-muri/>

⁸ <https://www.defense.gov/Newsroom/Releases/Release/Article/2430566/dod-awards-50-million-in-university-research-equipment-awards/source/GovDelivery/>

officials, many of the national security challenges we face are social or have social elements to them. 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. Minerva research is contributing to areas of strategic interest to DoD such as COVID-19 misinformation, AI/machine learning, contested maritime water issues, cyber and ransomware, and China's rise in foreign affairs among others. ***CNSR strongly supports the Senate's \$13 million plus up for Minerva and urges it be included in the final FY 2022 Defense Appropriations bill.***

Moreover, we strongly support the Senate funding levels, including the \$75 million plus ups for basic research, for the ***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 also urges Congress to include the \$19 million plus up for ***Defense Established Program to Stimulate Competitive Research (DEPSCoR)*** provided in the Senate bill. DEPSCoR 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. Furthermore, both the House and Senate bills provide plus ups for ***SMART activities*** and ***STEM programs*** through the ***National Defense Education Program (NDEP)*** program element. ***CNSR strongly supports appropriating additional funds for NDEP as DoD is typically funding fewer than 20 percent of applications in the basic research funded workforce programs.***

Applied Research Funding

With one notable exception described in this paragraph, CNSR largely supports funding levels in the Senate bill for the defense applied research program elements. While basic research is often the first step in creating new or improving existing military technologies, it is the defense applied research programs that take the discoveries from basic research to application that solves complex military problems and developing the systems and components for potential solutions. We would like to highlight our particular support for the ***Defense-Wide Manufacturing Science and Technology*** program element. This program funds DoD's contributions to the Manufacturing USA Network, which is moving innovations from the nation's universities and research laboratories to the defense industrial base while enhancing our national security workforce. In FY 2020, the Manufacturing USA institutes conducted over 500 applied R&D projects of high priority to broad industry sectors and more than 70,000 workers, students, and educators received education and training through institute workforce efforts⁹. ***CNSR supports the House bill funding level for the Defense-Wide Manufacturing Science and Technology program.***

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 90 percent of DARPA's R&D budget is awarded extramurally¹⁰. DARPA-sponsored research

⁹ https://www.manufacturingusa.com/sites/manufacturingusa.com/files/2021-08/FY20_MFG%20USA%20RepToCongress%206-7-21.pdf

¹⁰ <https://ncesdata.nsf.gov/fedfunds/2018/html/ffs18-dt-tab009.html>

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. ***CNSR supports the Senate funding level for DARPA to continue spearheading R&D in hypersonics, biological technologies, semiconductors, and ARI 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 Academies¹¹. Unfortunately, in FY 2019, these programs proved highly competitive as CDMRP had an average success rate of just 15 percent – leaving more than 5,900 proposals unfunded¹². ***CNSR urges Congress to appropriate at least the Senate level for CDMRP to continue support innovations in medical scientific research.***

Thank you for your commitment to a robust Defense S&T program. Please do not hesitate to contact me if CNSR can be of any service as you work to finalize the FY 22 Defense Appropriations bill.

Sincerely,

John Latini
Chairman

¹¹ <https://www.nap.edu/catalog/23652/evaluation-of-the-congressionally-directed-medical-research-programs-review-process>

¹² <https://cdmrp.army.mil/pubs/annreports/2020annrep/2020annreport.pdf>