

February 22, 2018

The Honorable Kay Granger  
Chairwoman, Subcommittee on Defense  
Committee on Appropriations  
House of Representatives  
Washington, DC 20515

The Honorable Thad Cochran  
Chairman, Subcommittee on Defense  
Committee on Appropriations  
United States Senate  
Washington, DC 20510

The Honorable Pete Visclosky  
Ranking Member, Subcommittee on Defense  
Committee on Appropriations  
House of Representatives  
Washington, DC 20515

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

Dear Chairwoman Granger, Chairman Cochran, and Ranking Members Visclosky and Durbin,

The 2018 National Defense Strategy acknowledges that the longstanding competitive advantage the American military has enjoyed is eroding. Adversaries challenge us in every domain, but we arguably face our greatest challenge in the realm of technology. The Administration's National Security Strategy says, "Losing our innovation and technological edge would have negative implications for American prosperity and power." On behalf of the Coalition for National Security Research (CNSR), a broad-based alliance of the nation's top research universities and institutes, scientific and professional organizations, and non-profits, we urge you to provide robust funding for the Department of Defense (DOD) science and technology (S&T) program—with emphasis on the enclosed program elements (PEs)—as you allocate additional funding made available under the Bipartisan Budget Act of 2018.

Before Congress reached this agreement, the House and Senate each drafted fiscal year (FY) 2018 DOD appropriations bills that would cut this important research overall. We are concerned that these cuts would harm technological developments critical to maintaining our military superiority across the land, sea, and air. Of particular concern are certain funding levels in both bills, including the Senate's reduction to total basic research and especially Army and Air Force S&T. And although the House bill includes a small, positive increase for total basic research, these gains are not distributed equitably, and the Army S&T program actually would take a devastating hit. Pioneering scientific breakthroughs and engineering technologies for the 21<sup>st</sup> century warfighter requires stable, consistent investment in all branches of the military.

Despite these concerning, potentially damaging cuts, there are specific aspects of both chambers' bills whose funding levels we believe should serve as positive foundations. Among these are the House's restoring lost funding in Naval research, and the Senate's further supporting the National Defense Education Program (NDEP) and Defense-Wide Manufacturing Science and Technology Program. NDEP includes funding for the Manufacturing Engineering Education Program as well as other activities that are vital to ensuring we have a robust science and engineering workforce. The DOD-sponsored Manufacturing USA Institutes are funded through the Defense-Wide Manufacturing Science and Technology Program. The institutes support the

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industrial base by bridging the so-called commercialization “valley of death” for photonic-enabled semiconductors, supporting workforce development, and providing small businesses and start-ups with access to software, hardware, and expertise to which they would not otherwise have access.

Federal investment in these DOD S&T programs is a proven path to discovery and innovation. With it in the past, we developed night vision, stealth technology, precision munitions, unmanned underwater vehicles, military drones, and global positioning technology that shifted the military paradigm. If we are to overcome our current and future challenges, Congress must continue to support the S&T programs across all branches of the military and especially in basic research.

Without sustained investment in these programs, we risk losing the progress we have made to address current threats and develop the military technologies of the future. Advancements are being made in laser systems that can engage small enemy aircraft or stop rockets, artillery, and mortars at the speed of light. DOD-sponsored research is enhancing composite materials for armor panels and using additive manufacturing to address lifecycle costs. DOD basic research is securing the military’s future edge in areas such as quantum computation and communications, bio-inspired low energy information processing, photonics materials, additive 3D self-assembly materials, artificial intelligence and advanced autonomous systems.

Finally, the 2018 National Defense Strategy says, “We cannot expect success fighting tomorrow’s conflicts with yesterday’s weapons or equipment.” CNSR wholeheartedly agrees. It is absolutely critical that Congress support DOD’s S&T program and basic research that provide the resources to maintain our technical superiority over our adversaries.

We thank you for your commitment to American security and prosperity. Please do not hesitate to contact us if we can be of any service to you.

Sincerely,

John Latini  
Chairman  
Coalition for National Security Research (CNSR)

**Coalition for National Security Research (CNSR) Priority Program Elements**

PE Number	Agency/Account	Program Element (PE) (\$ in Thousands)	FY17 Enacted	FY18 PBR	FY18 HAC-D	FY18 SAC-D
		<b>DOD RDT&amp;E</b>	<b>\$72,301,587</b>	<b>\$82,716,636</b>	<b>\$82,654,976</b>	<b>\$85,967,322</b>
		<b>DOD 6.1 Basic Research</b>	<b>\$2,276,332</b>	<b>\$2,228,529</b>	<b>\$2,279,529</b>	<b>\$2,259,019</b>
		<b>DOD 6.2 Applied Research</b>	<b>\$5,296,175</b>	<b>\$4,973,465</b>	<b>\$5,242,866</b>	<b>\$5,336,221</b>
		<b>DOD 6.3 Advanced Technology Development</b>	<b>\$6,438,722</b>	<b>\$5,997,183</b>	<b>\$6,277,251</b>	<b>\$6,346,808</b>
		<b>DOD Science &amp; Technology (S&amp;T)</b>	<b>\$14,011,229</b>	<b>\$13,199,177</b>	<b>\$13,799,646</b>	<b>\$13,942,048</b>
<b>Army Basic Research Program Elements</b>						
601102A	Army RDT&E	Defense Research Sciences	\$293,116	\$263,590	\$263,590	\$273,590
601103A	Army RDT&E	University Research Initiatives	\$69,166	\$67,027	\$67,027	\$67,027
601104A	Army RDT&E	University and Industry Research Centers	\$112,280	\$87,395	\$107,395	\$102,395
		<b>Army 6.1 Basic Research</b>	<b>\$486,943</b>	<b>\$430,022</b>	<b>\$450,022</b>	<b>\$455,022</b>
<b>Army Applied Research Program Elements</b>						
602105A	Army RDT&E	Materials Technology	\$82,533	\$29,640	\$33,640	\$58,640
602120A	Army RDT&E	Sensors and Electronic Survivability	\$51,109	\$35,730	\$35,730	\$81,230
602307A	Army RDT&E	Advanced Weapons Technology	\$53,803	\$22,785	\$32,785	\$27,785
602308A	Army RDT&E	Advanced Concepts and Simulation	\$30,688	\$28,650	\$28,650	\$28,650
602716A	Army RDT&E	Human Factors Engineering Technology	\$23,671	\$24,127	\$24,127	\$24,127
602783A	Army RDT&E	Computer and Software Technology	\$13,811	\$14,041	\$14,041	\$14,041
603461A	Army RDT&E	High Performance Computing Modernization	\$222,190	\$182,331	\$182,331	\$221,331
		<b>Army 6.2 Applied Research</b>	<b>\$1,220,274</b>	<b>\$889,182</b>	<b>\$1,097,552</b>	<b>\$1,119,382</b>
		<b>Army 6.3 Advanced Technology Development</b>	<b>\$1,360,065</b>	<b>\$1,070,977</b>	<b>\$1,168,377</b>	<b>\$1,364,177</b>
		<b>Army Science &amp; Technology (S&amp;T)</b>	<b>\$3,067,282</b>	<b>\$2,390,181</b>	<b>\$2,715,951</b>	<b>\$2,938,581</b>
<b>Navy Basic Research Program Elements</b>						
601103N	Navy RDT&E	University Research Initiatives	\$121,714	\$118,130	\$134,130	\$118,130
601153N	Navy RDT&E	Defense Research Sciences	\$422,748	\$458,333	\$458,333	\$458,333
		<b>Navy 6.1 Basic Research</b>	<b>\$562,970</b>	<b>\$595,901</b>	<b>\$611,901</b>	<b>\$595,901</b>
<b>Navy Applied Research Program Elements</b>						
602131M	Navy RDT&E	Marine Corps Land Force Technology	\$69,765	\$53,936	\$53,936	\$55,936
602235N	Navy RDT&E	Common Picture Applied Research	\$41,185	\$36,450	\$36,450	\$36,450
602236	Navy RDT&E	Warfighter Sustainment Applied Research	\$50,467	\$48,649	\$48,649	\$48,649
602271N	Navy RDT&E	Electromagnetic Systems Applied Research	\$120,941	\$79,598	\$79,598	\$85,598
602435N	Navy RDT&E	Ocean Warfighting Environmental Applied Research	\$81,618	\$42,411	\$62,411	\$49,911
602750N	Navy RDT&E	Future Naval Capabilities Applied Research	\$157,103	\$156,805	\$149,836	\$156,805
603680N	Navy RDT&E	Manufacturing Technology Program	\$56,712	\$57,797	\$57,797	\$57,797
0604536N	Navy RDT&E	Advanced Undersea Prototyping	\$59,479	\$66,543	\$66,543	\$66,543
		<b>Navy 6.2 Applied Research</b>	<b>\$980,326</b>	<b>\$886,079</b>	<b>\$899,110</b>	<b>\$962,579</b>
		<b>Navy 6.3 Advanced Technology Development</b>	<b>\$823,888</b>	<b>\$686,342</b>	<b>\$686,019</b>	<b>\$765,042</b>
		<b>Navy Science &amp; Technology (S&amp;T)</b>	<b>\$2,367,184</b>	<b>\$2,168,322</b>	<b>\$2,197,030</b>	<b>\$2,323,522</b>
<b>Air Force Basic Research Program Elements</b>						
601102F	Air Force RDT&E	Defense Research Sciences	\$380,812	\$342,919	\$342,919	\$342,919
601103F	Air Force RDT&E	University Research Initiatives	\$150,044	\$147,923	\$152,923	\$147,923
601108F	Air Force RDT&E	High Energy Laser Research Initiatives	\$14,168	\$14,417	\$14,417	\$14,417
		<b>Air Force 6.1 Basic Research</b>	<b>\$545,024</b>	<b>\$505,259</b>	<b>\$510,259</b>	<b>\$505,259</b>
<b>Air Force Applied Research Program Elements</b>						
602102F	Air Force RDT&E	Materials	\$159,152	\$124,264	\$129,264	\$144,264
602202F	Air Force RDT&E	Human Effectiveness Applied Research	\$111,647	\$108,784	\$128,284	\$108,784
602204F	Air Force RDT&E	Aerospace Sensors	\$162,674	\$152,782	\$152,782	\$159,282
602605F	Air Force RDT&E	Directed Energy Technology	\$127,163	\$132,993	\$132,993	\$132,993
602788F	Air Force RDT&E	Dominant Information Sciences and Methods	\$166,650	\$167,818	\$172,818	\$189,318
602890F	Air Force RDT&E	High Energy Laser Research	\$42,300	\$43,049	\$43,049	\$43,049
		<b>Air Force 6.2 Applied Research</b>	<b>\$1,325,652</b>	<b>\$1,284,114</b>	<b>\$1,332,114</b>	<b>\$1,391,714</b>
		<b>Air Force 6.3 Advanced Technology Development</b>	<b>\$807,705</b>	<b>\$794,017</b>	<b>\$794,017</b>	<b>\$859,117</b>
		<b>Air Force Science &amp; Technology (S&amp;T)</b>	<b>\$2,678,381</b>	<b>\$2,583,390</b>	<b>\$2,636,390</b>	<b>\$2,756,090</b>
<b>Defense-Wide Basic Research Program Elements</b>						
6010000BR	Defense-Wide RDT&E	DTRA Basic Research Initiatives	\$35,436	\$37,201	\$37,201	\$37,201
601110D8Z	Defense-Wide RDT&E	Basic Research Initiatives	\$68,154	\$40,612	\$40,612	\$40,612
601120D8Z	Defense-Wide RDT&E	National Defense Education Program	\$79,345	\$74,298	\$74,298	\$103,298
		<b>Defense-Wide 6.1 Basic Research</b>	<b>\$681,395</b>	<b>\$697,347</b>	<b>\$707,347</b>	<b>\$702,837</b>
<b>Defense-Wide Applied Research Program Elements</b>						
602668D8Z	Defense-Wide RDT&E	Cyber Security Research	\$12,183	\$14,775	\$14,775	\$14,775
603680D8Z	Defense-Wide RDT&E	Defense-Wide Manufacturing S&T Program	\$158,398	\$136,159	\$136,159	\$176,159
603833D8Z	Defense-Wide RDT&E	Engineering Science and Technology	\$22,659	\$25,395	\$25,395	\$25,395
		<b>Defense-Wide 6.2 Applied Research</b>	<b>\$1,769,923</b>	<b>\$1,914,090</b>	<b>\$1,914,090</b>	<b>\$1,862,546</b>
		<b>Defense-Wide 6.3 Advanced Technology Development</b>	<b>\$3,447,064</b>	<b>\$3,445,847</b>	<b>\$3,628,838</b>	<b>\$3,358,472</b>
		<b>Defense-Wide Science &amp; Technology (S&amp;T)</b>	<b>\$5,898,382</b>	<b>\$6,057,284</b>	<b>\$6,250,275</b>	<b>\$5,923,855</b>
<b>DARPA Program Elements</b>						
	<b>Defense-Wide DARPA</b>	<b>DARPA Total</b>	<b>\$2,889,036</b>	<b>\$3,170,390</b>	<b>\$3,070,390</b>	<b>\$3,030,461</b>
<b>Medical Research Program Elements</b>						
602787A	Army RDT&E	Medical Technology	\$79,111	\$83,434	\$85,434	\$83,434
603002A	Army RDT&E	Medical Advanced Technology	\$107,365	\$67,780	\$98,780	\$75,780
603807A	Army RDT&E	Medical Systems Advanced Development	\$54,120	\$33,491	\$33,491	\$35,491
		Research, Development, Test and Evaluation Research	\$9,097	\$9,796	\$9,796	\$9,796
		Exploratory Development	\$58,517	\$64,881	\$64,881	\$64,881
		Undistributed Medical Research/Peer-Reviewed/CDMRPs	\$1,279,200	\$0	\$627,100	\$931,500

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