



Policy Update: Congress Releases, House Passes Conferenced FY 2023 National Defense Authorization Act (NDAA)

Lewis-Burke Associates LLC – December 9, 2022

Congress released a conferenced bill for the fiscal year (FY) 2023 *National Defense Authorization Act* (NDAA), and the House passed it with a 350-80 vote, on December 8. The bill will now move to the Senate for consideration ahead of the yearend deadline. The NDAA is an annual bipartisan bill that authorizes programs and sets policies pertaining to the Department of Defense (DOD) and U.S. national security with a 60+ year history of annual passage. While NDAA authorizes funding levels and sets policy and program priorities, funding is directed through the defense appropriations bill, which is still being negotiated for FY 2023 and operating via continuing resolution (CR) through December 16, 2022.

The NDAA would authorize \$847 billion in discretionary spending, including \$817 billion for DOD and \$30 billion for programs within the Department of Energy (DOE). Overall, the bill would authorize a \$45 million increase relative to the President’s budget request. The NDAA would authorize \$139 billion in research, development, test, and evaluation (RDT&E) funds, an 18.2 percent increase over the FY 2022 enacted level. The science and technology (S&T) accounts—which include basic research (6.1), applied research (6.2), and advanced technology development (6.3)—would see an 8 percent increase above the FY 2022 enacted level. A majority of the increase would be driven by the basic research and advanced technology development accounts; whereas applied research would receive overall cuts compared to FY 2022 enacted levels.

The provisions in the FY 2023 NDAA reflect several congressional priorities for addressing innovation and modernization in response to national security threats from China and Russia. To support these initiatives and U.S. competitiveness, S&T priorities include artificial intelligence (AI), cybersecurity, microelectronics, advanced and additive manufacturing, quantum, hypersonics, and biotechnology. A summary of provisions relevant to research and higher education is below.

Defense Advanced Research Projects Agency (DARPA)

The bill would authorize program increases that support basic research at DARPA and establish an “Innovation Fellowship” program to expand opportunities for early career scientists to participate in the DARPA projects and programs, reflecting ongoing DARPA priorities and initiatives. The bill would authorize the following increases relevant to basic research programs at the Agency:

- \$75 million increase for DARPA to execute the recommendations of the National Security Commission on Artificial Intelligence (NSCAI)
- \$20 million increase for DARPA network-centric warfare technology
- \$20 million increase for DARPA’s enhanced non-kinetic/cyber modeling and simulation activities
- \$10 million increase for DARPA LogX advanced supply chain mapping
- \$20 million increase for DARPA’s underexplored systems for utility-scale quantum computing activities

Building Capacity at Underutilized and Underrepresented Universities

The bill would codify the Defense Established Program to Stimulate Competitive Research (DEPSCoR) program, a capacity building program to strengthen basic research infrastructure at institutions of higher education in underutilized states and territories. The bill would ensure annual execution of DEPSCoR and authorize \$20 million for FY 2023.

Additionally, the bill would authorize \$131.7 million, a \$98.4 million increase compared to the President's budget request, for defense research activities at Historically Black Colleges and Universities and Minority Institutions (HBCU/MIs). In support of these efforts, the NDAA would:

- Provide for the implementation of the recommendations of the National Academies study, "Defense Research Capacity at Historically Black Colleges and Universities and Other Minority Institutions: Transitioning from Good Intentions to Measurable Outcomes," which would improve the research capacity of HBCU/MIs, enhancing their ability to compete for future defense research funding opportunities, including through the creation of a pilot program geared specifically towards capacity improvements
- Increase outreach to HBCUs and other MIs to promote entrepreneurship and innovation at institutions of higher education through the National Security Innovation Network (NSIN)
- Increase intelligence-related engineering, research, and development capabilities of MIs, including partnerships between IARPA and covered institutions

Artificial Intelligence (AI)

The bill would continue prioritizing AI adoption for integration into DOD systems and processes, including a five-year roadmap and implementation plan for "rapidly adopting and acquiring" AI systems and applications within the Department. The bill would also provide a \$3 million increase for AI for supply chain and \$3 million for AI for predictive maintenance. Within the Navy, the bill would authorize a \$5 million increase for AI maritime maneuvering.

The bill would also incorporate the *Advancing American AI Act*, which includes National Security Commission on Artificial Intelligence (NSCAI) recommendations. The *Advancing American AI Act* encourages the federal government (beyond DOD) to modernize its programs and "legacy" systems using AI. A notable provision includes a pilot program to develop use cases for the government to adopt readily available AI technology, such as predictive supply chain logistics and mission-oriented challenges for agencies, such as workforce development.

Microelectronics

The bill would require the establishment of a Government-Industry-Academia Working Group on Microelectronics under the Secretary of Defense. The Working Group would coordinate industry, academia, and the Department of Defense on issues of mutual interest relating to microelectronics research and development, including infrastructure, supply chain, workforce training, and technology transition. The bill would also authorize \$100 million for technology innovation related to domestic supply chains for critical element production. Additionally, the bill would include a provision prohibiting federal contractors from using Chinese-made semiconductors.

Cybersecurity

As included in the Senate version of the NDAA, the bill would require the Secretary of Defense to establish a center to support the existing cybersecurity research consortium. The Committee specifically noted that additional support and resources could foster "closer collaboration between academic research and the Department of Defense," and would authorize \$10 million in seedling funding for the

Department to choose “one or two universities...eligible for access to classified information” to comprise the center. Additionally, NDAA would include the following provisions related to cybersecurity:

- Establish the DOD Cyber and Digital Service Academy as a scholarship-for-service program partnered with universities and colleges in the United States, with a DOD service requirement for participants
- Authorize an increase of \$20 million for the National Security Agency Center of Academic Excellence cybersecurity workforce pilot program

Space

The NDAA would significantly increase Space Force funding in applied research and advanced technology development compared to FY 2022 enacted levels. The agreement would not authorize funding for Space Force basic research, as the Senate Appropriations Committee has proposed in the FY 2023 Defense Appropriations Bill. The bill would also not authorize the creation of a Space National Guard, which had been included in the House version. Additionally, the agreement would authorize:

- The Space Force to carry out applied research and education activities to support space technology development and the future national security space workforce
- \$100 million increase in funding to develop tactically responsive space access, and require the development of a responsive space strategy to expand existing efforts, including the development of new concepts of operations
- \$3 million increase for applied research in advanced analog microelectronics
- Requirements for the Chief of Space Operations to release a strategy on the protection of national security space assets in coordination with the Director for National Intelligence
- Directives for the Space Force to establish requirements for defense and resilience prior to any new major satellite acquisition program
- A report on the risk of space debris to national security assets and potential remediation options

Environment and Resiliency

Congress would continue to prioritize programs to ensure military installation resiliency and invest in environmental science for national security purposes. The bill would authorize demonstration projects for energy resiliency at certain military installations that include academic and industry partners. Additionally, the bill would establish a Center of Excellence on Environmental Security and direct DOD to provide greater access to perfluoroalkyl or polyfluoroalkyl substances (PFAS/PFOA) research, including possible health effects. NDAA would authorize a \$5 million increase for the Strategic Environmental Research Programs (SERDP) for PFAS remediation and disposal technology, as well as Aqueous film forming foams (AFFF) replacement, disposal, and cleanup technology, respectively. Also, the bill would authorize \$94 million for the Environmental Security Technical Certification Program, including \$5 million for PFAS disposal.

Other provisions of interest to the research community would include:

- \$85 million increase to develop, test, and prototype advanced technology for jamming protection, electronic warfare, and signature measurement
- \$120 million increase for 5G technology development, experimentation, and transition support, including \$40 million for open radio access network (O-RAN) efforts
- Directing an assessment and strategy for DOD’s hypersonic testing capacity, including academic institutions with current hypersonics testing capabilities

- \$300 million for biotechnology manufacturing institutes through the Manufacturing Science and Technology Program
- Directing the Secretary of Defense to provide support for bioindustrial manufacturing facilities to conduct research and development into a new generation of chemicals and materials to support national security or secure fragile supply chains
- Authorizing the DOD to submit a strategy and implementation plan every four years for assessing the health and improvement of the Defense Innovation Ecosystem. Additionally, the plan must contain quantifiable metrics with which to measure progress
- Authorizing the Defense Counterintelligence and Security Agency (DCSA) to sponsor short-term security clearances for up to 75 startups as bridges until full company security adjudications can be completed. Startups must offer innovations in one of the 14 critical technology areas defined by the Office of the Undersecretary of Defense for Research and Engineering
- Improving standardization of controlled unclassified information (CUI) requirements across all DOD-funded research programs
- Specifying management of the Joint All-Domain Command and Control (JADC2) enterprise and integration of successful programs to support Combatant Commands, including DARPA and the Rapid Defense Experimentation Reserve (RDER) projects and exercises
- Compelling the Secretary of Defense to provide a Joint Concept for Competing, which should describe how DOD forces and capabilities are to be employed in long-term strategic competition with adversaries globally. This will become an essential roadmap for how DOD plans, organizes, equips, and funds things in the future as deterrence takes priority over traditional warfighting

Sources and Additional Information:

- The FY 2022 NDAA conference report is available [here](#).
- The FY 2022 NDAA conference bill text is available [here](#).
- A summary of the final text is available [here](#).

National Defense Authorization Act, FY 2023

(in thousands of dollars)

	NDA FY 2022 Enacted	FY 2023 PBR	FY 2023 NDAA	NDA vs. Enacted	NDA vs. PBR
RDT&E, total	117,492,726	130,097,410	138,862,616	21,369,890 (18.2%)	8,765,206 (6.7%)
S&T, Total	17,870,775	16,454,676	19,305,551	1,434,776 (8.0%)	2,850,875 (17.3%)
6.1, Total	2,659,106	2,375,872	2,917,981	258,875 (9.7%)	542,109 (22.8%)
6.2, Total	6,820,534	5,791,097	6,583,257	-237,277 (3.5%)	792,160 (13.7%)
6.3, Total	8,391,135	8,287,707	9,804,313	1,413,178 (16.8%)	1,516,606 (18.3%)
Army RDT&E	13,312,957	13,710,273	15,344,737	2,031,780 (15.3%)	1,634,464 (11.9%)

Army 6.1	549,022	466,823	561,689	12,667 (2.3%)	94,866 (20.3%)
Army 6.2	1,100,838	883,759	1,185,209	84,371 (7.7%)	301,450 (34.1%)
Army 6.3	1,459,437	1,392,065	1,675,685	216,248 (14.8%)	283,620 (20.4%)
Navy RDT&E	23,101,189	24,078,718	25,419,350	2,318,161 (10.0%)	1,340,632 (5.6%)
Navy 6.1	680,253	589,192	733,816	53,563 (7.9%)	144,624 (24.5%)
Navy 6.2	1,076,415	971,814	1,134,914	58,499 (5.4%)	163,100 (16.8%)
Navy 6.3	847,688	865,755	968,455	120,767 (14.2%)	102,700 (11.9%)
Air Force RDT&E	40,499,610	44,134,301	45,846,570	5,346,960 (13.2%)	1,712,269 (3.9%)
Air Force 6.1	541,726	546,517	627,939	86,213 (15.9%)	81,422 (14.9%)
Air Force 6.2	1,631,077	1,305,787	1,408,042	-223,035 (13.7%)	102,255 (7.8%)
Air Force 6.3	1,026,520	827,271	836,357	-190,163 (18.5%)	9,086 (1.1%)
Space Force RDT&E	11,794,566	15,819,372	16,589,070	4,794,504 (40.7%)	769,698 (4.9%)
Space Force 6.1	-	--	--		
Space Force 6.2	201,709	243,737	270,092	68,383 (33.9%)	26,355 (10.8%)
Space Force 6.3	136,919	564,215	558,640	421,721 (308.0%)	-5,575 (1.0%)
Defense Wide RDT&E	28,784,404	32,077,552	35,376,210	6,591,806 (22.9%)	3,298,658 (10.3%)
Defense Wide 6.1	888,105	773,340	994,537	106,432 (12.0%)	221,197 (28.6%)
Defense Wide 6.2	2,810,495	2,386,000	2,585,000	-225,495 (8.0%)	199,000 (8.3%)
Defense Wide 6.3	4,920,571	4,638,401	5,765,176	844,605 (17.2%)	1,126,775 (24.3%)
Defense Health R&D	630,680	909,994	927,494	296,814 (47.1%)	17,500 (1.9%)

*NDAA Defense Health R&D does not include funds for the Congressionally Directed Medical Research Programs (CDMRP)