

## **Appropriations Update: Senate Appropriations Committee Approves FY 2020 Defense Appropriations Bill**

*Lewis-Burke Associates LLC – September 16, 2019*

On September 12, the Senate Appropriations Committee (SAC) approved its fiscal year (FY) 2020 defense appropriations bill by a 16-15 party line vote, revealing the potential for strategic increases for several basic research accounts across the Department of Defense (DOD). The partisan divide over the bill stems from disagreements over the DOD's efforts to redirect \$3.6 billion of previously appropriated military construction funding to construct a wall on the southern border, a priority for President Donald Trump. If the bill passes the Republican-led Senate in its current form, the dispute over DOD's role in border wall construction will be the biggest obstacle to negotiations and passage of the defense spending bill with the Democrat-led House. The House-passed version of the FY 2020 defense appropriations bill contains provisions that would limit DOD's authorities to transfer funding and would prohibit funding from being used to construct a wall at the border. Although other House proposals will also meet objections from the Senate, such as a proposed repeal of the Authorization of the Use of Military Force (AUMF), the most contentious disagreement surrounds the border wall construction, which led to a partial government shutdown in FY 2019.

The bill would provide a total \$687.5 billion for the Department of Defense (DOD), which is \$19.0 billion above the FY 2019 level, but \$3.1 billion below the President's FY 2020 budget request and \$2.6 billion below the House level. This includes \$615.2 billion for base programs and \$70.6 billion in Overseas Contingency Operations (OCO) funding. The Committee notes that the global security landscape has been impacted significantly by rapid technological advancements, which are changing the character of war, and recommends prioritizing investments in a number of areas including hypersonics, 5G, artificial intelligence, missile defense, cybersecurity, and basic research in order to remain competitive against adversaries. The bill would provide \$104.2 billion for defense Research, Development, Test, and Evaluation (RDT&E) programs, which is \$9.3 billion (9.9 percent) above the FY 2019 level and \$3.6 billion (3.6) above the House bill. Within RDT&E, SAC would allocate \$15.7 billion for DOD's science and technology (S&T) accounts (6.1 – 6.3), which is \$261.0 million (1.6 percent) less than the FY 2019 enacted level, but \$855.5 million (5.8 percent) above the President's budget request.

The Committee continues to recommend increases for basic research across the military Services and Defense-wide. Specifically, the basic research accounts (6.1) across the Services and Defense-wide would see an increase of \$98.3 million (3.9 percent) above the FY 2019 level and \$119.5 million (4.8 percent) more than the House bill. In addition, the Defense-Wide account would receive a \$12 million increase above the President's Budget Request for the Defense Established Program to Stimulate Competitive Research (DEPSCoR) program, which provides funding opportunities in states that typically do not receive much DOD funding. The Committee noted the Department will have to take other steps beyond investing in basic research, such as quickly transitioning and deploying new technologies, and sustaining a strong innovation and industrial base in order to remain ahead of potential adversaries.

Senate appropriators proposed funding for the Defense Advanced Research Projects Agency (DARPA) of 3.3 billion, a decrease of \$66.3 million (2.0 percent) compared to the FY 2019 level, \$193.0 million (5.6

percent) compared to the President's budget request, and \$164.7 million (4.8 percent) compared to the House bill.

The Committee report prioritizes technologies associated with fifth generation wireless (5G), cybersecurity, manufacturing, energy systems, autonomous systems, and medical research. Specific provisions include:

**5G** – Noting that 5G can potentially revolutionize DOD operations and that China's leadership in developing 5G infrastructure would have significant repercussions for U.S. national security, the Committee recommends a \$436 million increase for DOD's Next Generation Information Communications Technology (5G-XG) program and directs DOD to report on how it will address the recommendations and concerns highlighted in the Defense Innovation Board's [report](#) on 5G.

**Cybersecurity** – The Committee has increasingly prioritized building a cybersecurity workforce, and recommends a total increase of \$47 million to support the National Centers for Academic Excellence (CAE) Cyber Defense Program, establish a pilot program through the CAE to offer certificate-based courses in cybersecurity and AI, and designate DOD Cyber Institutes at senior military colleges and other institutions of higher education to support scholarships and a K-12 cyber education program. The Committee also encourages DOD to work with Historically Black Colleges and Universities (HBCUs) and other universities to recruit cyber professionals from underrepresented populations.

**Manufacturing** – The bill notes the Committee's support for manufacturing and the defense industrial base. Provisions in the bill would increase funding for the Manufacturing Engineering Education Program (MEEP) by \$45 million, direct DOD to report on efforts to sustain and better integrate the Manufacturing Innovation Institutes with the military Services, and encourage the Service Secretaries to continue initiatives such as the Army's Advanced and Additive Manufacturing Center of Excellence. The bill also would increase funding for the Department to conduct an analysis of the defense industrial base and provide a report on the Department's strategy to address any vulnerabilities discovered in the analysis.

**Energy Systems** – The bill includes provisions pertaining to the research and development (R&D) of energy storage and systems at the Navy. Specifically, the bill:

- Highlights the Committee's emphasis on lithium-ion battery improvement.
- Recommends an increase of \$9.5 million for workforce and technology development efforts, including bridge-to-university programs, to support Navy power and energy systems.
- Notes the need for the Navy to work with university researchers and industry to develop more robust and resilient energy infrastructure.
- Recommends a \$20 million increase for the Navy's alternative energy research efforts and encourages the Navy to improve cost effectiveness and resiliency of advanced energy systems in the short term while looking at grid-connected power generation in the long term.
- Encourages the Secretary of the Navy to work with research facilities to develop new energy technologies that can power sensors, communications, and security systems for unmanned undersea vehicles.

**Autonomous Systems** – The bill would encourage the Secretary of the Navy to continue supporting R&D for undersea autonomous systems, noting the importance of university-based research ongoing in this

field. Another provision would encourage the Air Force Research Laboratory Information Directorate to continue R&D efforts to detect and counter unmanned aerial systems (UAS), either as individual systems or in swarms.

**Medical Research** – The Senate would fund defense health research and development at \$1.7 billion, a decrease of \$471.8 million (21.6 percent) compared to FY 2019 and a slight increase of \$55.5 million (3.4 percent) compared to the House level. Keeping with tradition, the Senate bill would fund the Peer Reviewed Medical Research Program (PRMRP), which is not included in the House bill, at \$350 million. The Senate bill would create a new Peer-Reviewed Respiratory Health Program, which is currently a PRMRP topic, and encourage DOD to partner with universities and other organizations to further efforts in infectious disease research, particularly malaria. Additionally, the bill would direct the Department to develop a plan to ensure that women and minorities are properly represented in extramural clinical research.

Related to cancer, the Senate bill would reduce funding for the breast, prostate, and ovarian cancer programs. The kidney and lung cancer programs would be folded into the Peer-Reviewed Cancer Research Program, which would be funded at \$90 million, consistent with the FY 2019 funding levels. In addition, the Senate bill would provide \$20 million for melanoma research, a priority for the Committee, and create a new rare cancer research program funded at \$7.5 million. Esophageal and head and neck cancer would be added as new topics under the Peer-Reviewed Cancer Research Program, consistent with the House bill.

Other S&T provisions identified in the SAC report would:

- Encourage the Secretary of Defense to allocate resources and leverage work performed by federal laboratories to improve technology transfer between the federal government and its partners.
- Recommend an increase of \$17 million for ocean acoustics research to support submarine development and directs the Chief of Naval Research to report on current activities and tech transfer efforts.
- Recommend an increase of \$8 million for basic research on digital radar capabilities and encourages the Navy to work with laboratory-based antenna test facilities in conducting this research.
- Provide an increase of \$8 million for advanced energetics to increase the lethality, range, and speed of weapons.
- Encourage the Secretary of the Air Force to develop algorithms and predictive capabilities as part of its efforts to use sensors to monitor warfighters' physiological performance and readiness in real-time.
- Direct DOD to report on its program review and potential recommendations for reform or reorganization of the Strategic Capabilities Office (SCO), which looks at current opportunities to transfer existing technologies in new ways to counter adversaries. The committee noted its shared concern with DOD regarding SCO's challenges in transitioning technologies but that the Department was not giving Congress enough time to conduct oversight of the program.
- Direct the Secretary of the Army to submit a report on the roles, responsibilities, and relationship between Army Futures Command (AFC) and the Assistant Secretary of the Army for Acquisition, Logistics, and Technology ((ASA(ALT))). The Committee has been supportive of the Army's modernization efforts under AFC but expressed concern of duplicative functions and positions across the two offices and noted that ASA(ALT) should still have a role in guiding

acquisition and long-term investments rather than just serving as the final approval for AFC's decisions. This could impact extramural basic and applied research funding availability.

- Allocates \$10 million for the AFC Catalyst program, which would support placement of Army officers at universities to improve collaboration between academia and the Army.

## Department of Defense

(in thousands of \$)

As reported by the conference committee on September 12, 2019

	FY 2019 Enacted	FY 2020 Budget Request	FY 2020 House	FY 2020 Senate	FY 2020 Senate vs FY 2019 Enacted	FY 2020 Senate vs. FY 2020 House
<b>RDT&amp;E, total</b>	<b>94,896,708</b>	<b>102,647,545</b>	<b>100,691,612</b>	<b>104,282,139</b>	<b>9,385,431 (9.9%)</b>	<b>3,590,527 (3.6%)</b>
<b>S&amp;T, Total</b>	<b>15,959,770</b>	<b>14,058,561</b>	<b>14,843,219</b>	<b>15,698,762</b>	<b>-261,008 (-1.6%)</b>	<b>855,543 (5.8%)</b>
6.1, Total	2,529,556	2,320,019	2,508,345	2,627,839	98,283 (3.9%)	119,494 (4.8%)
6.2, Total	6,068,244	5,315,527	5,556,120	5,975,570	-92,674 (-1.5%)	419,450 (7.5%)
6.3, Total	7,361,970	6,423,015	6,778,754	7,095,353	-266,617 (-3.6%)	316,599 (4.7%)
<b>Army RDT&amp;E</b>	<b>11,083,824</b>	<b>12,192,771</b>	<b>12,046,783</b>	<b>12,412,845</b>	<b>1,329,021 (12.0%)</b>	<b>366,062 (3.0%)</b>
Army 6.1	506,895	454,980	527,484	576,980	70,085 (13.8%)	49,496 (9.4%)
Army 6.2	1,579,344	893,990	1,033,816	1,202,248	-377,096 (-23.9%)	168,432 (16.3%)
Army 6.3	1,586,818	1,099,564	1,253,064	1,453,016	-133,802 (-8.4%)	199,952 (16.0%)
<b>Navy RDT&amp;E</b>	<b>18,510,564</b>	<b>20,270,499</b>	<b>19,125,865</b>	<b>19,818,218</b>	<b>1,307,654 (7.1%)</b>	<b>692,353 (3.6%)</b>
Navy 6.1	679,878	605,978	629,300	682,478	2,600 (0.4%)	53,178 (8.5%)
Navy 6.2	1,018,971	936,453	984,650	1,168,904	149,933 (14.7%)	184,254 (18.7%)
Navy 6.3	816,707	742,210	742,253	901,810	-72,210 (-8.5%)	24,437 (3.2%)
<b>Air Force RDT&amp;E</b>	<b>41,229,475</b>	<b>45,616,122</b>	<b>44,795,456</b>	<b>45,446,727</b>	<b>4,217,252 (10.2%)</b>	<b>651,271 (1.5%)</b>
Air Force 6.1	561,369	529,761	549,761	579,761	18,392 (3.3%)	30,000 (5.5%)
Air Force 6.2	1,481,342	1,435,626	1,492,626	1,627,626	146,284 (9.9%)	135,000 (9.0%)
Air Force 6.3	929,597	839,153	983,653	1,071,253	141,656 (15.2%)	87,600 (8.9%)

<b>Defense Wide RDT&amp;E</b>	<b>23,691,836</b>	<b>24,346,953</b>	<b>24,502,308</b>	<b>26,371,649</b>	<b>2,679,813 (11.3%)</b>	<b>1,869,341 (7.6%)</b>
Defense Wide 6.1	781,414	729,300	801,800	788,620	7,206 (0.9%)	-13,180 (-1.6%)
Defense Wide 6.2	1,988,587	2,049,458	2,045,028	1,976,792	-11,795 (-0.6%)	-68,236 (-3.3%)
Defense Wide 6.3	3,992,735	3,742,088	3,785,864	3,790,474	-202,261 (-5.1%)	4,610 (0.1%)
<b>Defense Health R&amp;D</b>	<b>2,179,621</b>	<b>732,273</b>	<b>1,652,273</b>	<b>1,707,773</b>	<b>-471,848 (-21.6%)</b>	<b>55,500 (3.4%)</b>

*Sources and additional information:*

- The full committee report can be found [here](#).
- The Senate Appropriations Committee's press release can be found [here](#). The press release from the minority is available [here](#).