

Defense Policy Update: House Passes, Senate Releases FY 2022 NDAA

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Over the past three months, Congress made headway on the FY 2022 *National Defense Authorization Act* (NDAA) process, albeit delayed in timing compared to recent years. 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. The House passed its version of the bill on September 23, whereas the Senate is not planning to debate the bill until October 18 and only recently released a public version of the bill the Senate Armed Services Committee (SASC) approved through a closed markup in July.

Both House and Senate versions of the bill would authorize funding increases for defense science and technology (S&T) programs, including basic research (6.1), applied research (6.2), and advanced technology development (6.3). Additionally, both versions would restore and protect funding for the **Minerva Research Initiative**, DOD's premier social science program, recommending \$10 million and \$22.5 million in the House and Senate bills, respectively. While the House version does not include an authorization amount for the **Defense Established Program to Stimulate Competitive Research (DEPSCoR)**, which augments basic research awards to increase research capacity in eligible states and territories, SASC would authorize a \$10 million increase for the program. Both bills would also provide significant investments in **climate resilience, cybersecurity, and space research and development (R&D)**, as well as increased funding for specific R&D efforts like **large-scale quantum computing, microelectronics, undersea vehicle research, and polar research**.

Bucking the Biden Administration

Both the House and Senate NDAA's **would reject the Biden Administration's \$715 billion proposal of flat funding for DOD**. The House version would authorize a defense budget of approximately \$739.5 billion, \$24 billion above the President's budget request. SASC would increase defense spending to over \$740 billion, which is approximately \$25 billion above the President's budget request and \$1 billion more than passed in the FY 2022 House NDAA. Though the Senate has not passed its version of the NDAA, it is expected that an increased top-line for DOD will still receive bipartisan support during final negotiations. Despite deviating from the Administration on overall defense funding, both chambers would not authorize funding for Overseas Contingency Operations (OCO) in FY 2022, in alignment with the President's budget request. OCO, often referred to as the Department's slush fund, provides additional funding for emergencies, like the Iraq and Afghanistan wars that are exempt from discretionary spending limits.

The funding boost for DOD puts the House and Senate at odds with the Administration and perturbs more progressive Democrats, who are eager to either maintain or further slash defense spending. During the House process, Republicans justified the budget increase by pointing out that last year's NDAA did not consider inflation, suggesting that the budget should increase by 3 to 5 percent annually to keep up with inflation. Additionally, House Armed Services Committee (HASC) Vice Chair Elaine Luria (D-VA), one of over a dozen House Democrats who supported the increase, cited that the boost is necessary to compete with China, an ongoing bipartisan concern in Congress.

A Complicated Future

The Senate still needs to debate and pass its version of the NDAA, which was [released](#) by SASC on September 22 and initially approved through a closed markup in July. Once the Senate approves its bill,

the House and Senate must negotiate their policy differences in a final agreement. While the NDAA authorizes funding levels for defense programs, the defense appropriations bill ultimately decides funding levels. The Senate has not yet released its FY 2022 defense appropriations bill, but the House Appropriations Committee approved its defense appropriations bill in July, which would allocate \$706 billion for the Department. This topline is now inconsistent with the with the House NDAA but in step with the Biden Administration.

Furthermore, given the increased likelihood of a continuing resolution (CR) until December to give Congress more time to pass and negotiate FY 2022 spending bills past the September 30 fiscal deadline, the passage of a final NDAA bill will likely be delayed until the end of the year. To further complicate the bill's future, Members of Congress are eyeing the NDAA--given its track record of passage over the past six decades--as a vehicle for other legislation, such as the [United States Innovation and Competition Act \(USICA\)](#). USICA includes \$200 billion for the National Science Foundation (NSF), semiconductors, and other efforts to combat China's influence through increased investments in research and innovation. Meanwhile, defense spending is also being used as a bargaining chip in negotiations over reconciliation and the debt ceiling, matters that will continue to be debated through the fall.

Analysis: House Passes FY 2022 NDAA

The House bill would authorize \$768 billion in discretionary spending, including \$739.5 billion in base spending for DOD. As previously mentioned, the final House version authorizes an increased topline of nearly \$24 billion above the Biden Administration's defense budget request, which was included through an [amendment](#) originally introduced by Rep. Mike Rogers (R-AL). The passage quickly follows three weeks after the 57-2 approval by HASC on September 2. Of interest to the research community, this topline boost would authorize \$15 billion for unfunded procurement, research, and readiness priorities of the military services.

Specific Research Provisions of Interest

The House version of the bill would authorize significant increases in key areas of DOD R&D, including biotechnology (\$200 million), directed energy (\$50 million), and electromagnetic spectrum (\$68 million). Additional R&D-related provisions include:

- \$13 million to restore the **Minerva Research Initiative**, DOD's signature extramural social science research program
- \$20 million for the **Defense University Research Instrumentation Program (DURIP)**
- \$20 million for **improved R&D partnerships with allies**
- \$122 million (increase of \$1.2 million) for the **National Defense Education Program (NDEP)**, including funding for civics education and SMART scholarships
- \$4 million for **polar research and testing capabilities**, noting the limited technical workforce issues in the polar region
- \$100 million for **undersea warfare research**, including a \$12.5 million increase for academic partnerships for undersea vehicle research and manufacturing
- \$100 million for the "acceleration of the deployment of **large-scale quantum computing systems**" and establishment of a **Subcommittee on the Economic and Security Implications of Quantum Information Science** through the National Science and Technology Council
- \$10 million increase for **university and industry research centers**, including \$4 million for biotechnology advancements and \$6 million for polar research and training

- Directives for DOD to provide a report to Congress on efforts to establish a **national network for microelectronics R&D composed of U.S. research universities**

Science and Security

The House bill would require DOD to submit a report to Congress demonstrating they follow **disclosure requirements** for recipients of R&D funds and would establish a **research security training requirement** for federal research grant personnel. The bill would also direct the National Academies to study the feasibility of providing enhanced **research security services** to further protect the U.S. research enterprise from malign foreign influence and **prohibit malign talent recruitment program participants** from receiving R&D awards from federal research agencies. Additional provisions were included related to concerns about Afghanistan, Russia, Saudi Arabia, and China.

Space

The House bill authorizes significant national security space provisions, most notably the establishment of a **Space National Guard** as a reserve component of the U.S. Space Force. Additionally, the bill would establish a **university consortium for space technology development** that would support the Space Force's research, development, and demonstration needs. The bill would also require the National Space Council to create multiple reports, including a plan for how DOD intends to transition to the next generation of communication satellites.

Cybersecurity

The House bill continues to recognize evolving cyber threats and would authorize significant funding for cyber training and workforce development activities, including the establishment of a **cybersecurity training pilot program** at the Department of Veterans Affairs for veterans and members of the Armed Forces transitioning from service to civilian life, as well as a **registered apprenticeship program** at the Department of Homeland Security (DHS) Cybersecurity and Infrastructure Security Agency (CISA). The bill would also authorize \$221 million over five years for DHS to **designate at least four cybersecurity-focused centers** to test the security of devices and technologies.

Climate

Similar to last year's NDAA, the House bill would push DOD to continue to assess and address the impacts of climate change and other environmental challenges. The bill includes provisions related to **energy resiliency** as well as water and land **cleanup standards for forever chemicals like polyfluoroalkyl substances**. The bill would also aim to enhance resiliency and strengthen U.S. presence in Arctic countries.

Workforce

The House bill would provide increases to several programs for workforce development at DOD, including a \$4 million increase for **defense industrial skills and technology training**, including robotic programming and operations to increase automation, digitization of work, and increased use of virtual environments. The House bill directs DOD to provide a report to Congress of **workforce areas of critical need at the Department**, including but not limited to degrees, certificates, and certifications in science, technology, engineering, mathematics, cyber security, AI, quantum computing, and language-based security. Additionally, the bill authorizes \$20 million for a pilot program to enable "**workforce transformation certificate-based courses on cybersecurity and artificial intelligence** that are offered by Center of Academic Excellence (CAE) universities." Specific to the Air Force, the bill would authorize \$7 million for **innovative research-based education and workforce programs** in the organic industrial base.

Sources and Additional Information:

- The full committee markup of the FY 2022 NDAA and additional HASC resources can be found at <https://armedservices.house.gov/ndaa>
- The Chairman's mark of the FY 2022 NDAA can be found at <https://armedservices.house.gov/cache/files/2/9/29833886-e551-48ed-a6fa-05993dd4daf4/84C368A96797371435579CED7B9982CB.fy22-ndaa-chairman-s-mark.pdf>
- The summary of the FY 2022 NDAA can be found at <https://armedservices.house.gov/cache/files/1/3/13abf96a-7f26-48f0-8c54-c6b6d11e2715/0E2DB3E3B22B70F6BDAB86B4D728A433.20210830-fy22-ndaa-full-committee-summary-final.pdf>
- The full text of the HASC FY 2022 NDAA can be found at <https://armedservices.house.gov/cache/files/e/c/ecac9ec3-554f-4f30-a0f2-20b5ab6f7485/DF26CE0B576548D89BEFAB08D96E7DAD.fy22-by-request.xml.pdf>

Analysis: Senate Releases FY 2022 NDAA

While SASC approved the NDAA with a 23-3 vote in a closed session on July 21, the full bill text was released on September 22. The SASC FY 2022 NDAA would continue to prioritize U.S. strategic competition with its adversaries, namely China and Russia, amid other competing priorities, like COVID-19 and natural disasters. The bill would authorize \$740.3 billion for base funding at DOD. Lewis-Burke will continue to monitor R&D-related provisions as the Senate works to finalize its bill later in the fall.

Specific Research Provisions of Interest

To promote defense modernization, the bill would authorize a funding increase for science and technology programs by more than \$1 billion to support universities and other research institutions, especially for research and prototyping activities in critical areas like AI, microelectronics, advanced materials, and 5G. Additional R&D-related provisions include:

- \$22.5 million increase for **Minerva**
- \$10 million increase for **DEPSCoR**
- \$15 million increase for **Defense Advanced Research Projects Agency (DARPA)**-funded university research activities
- \$112.2 million (increase of \$1.5 million) for the **National Defense Education Program (NDEP)**
- Establish the **national network for microelectronics R&D** to support the development of world-leading domestic microelectronics manufacturing capabilities
- \$3 million for **academic high-performance computation and data equipment capabilities**
- \$200 million increase for **information and communications technology**
- \$2 million to support efforts to work with universities on research, technology development, and industrial expansion efforts in line with **Navy modernization priorities**
- \$12 million to support the expansion of academic partnerships to support **undersea vehicle research activities**
- \$5 million to support **Army-university research partnerships exploring next generation air assault technologies**
- \$5 million to continue supporting **counter-UAS research activities**
- Establish pilot programs for telecommunications infrastructure to facilitate the deployment of **5G wireless telecommunications** on military installations

- \$100 million increase for **5G acceleration** activities and \$50 million increase for **6G and beyond** technology development
- \$4 million for the development of **polar research and testing capabilities**
- Requirements for DOD to establish a set of activities to accelerate the development and deployment of a **large-scale, dual-use quantum computing** capability
- Requirements for DOD to conduct an analysis **comparing the research and development efforts of the United States and China** on certain critical, militarily relevant technologies

Space

SASC continues to focus on U.S. Space Force (USSF) oversight consistent with last fiscal year's NDAA and would authorize additional funding for the Commander of the U.S. Space Command and the Chief of Space Operations. Other relevant provisions would authorize \$8 million for **rapid prototyping of space-capable laser communication technology** for the Space Development Agency. The bill would also authorize an increase of \$5 million for the **development of microelectronics** to withstand radiation in space. The Committee would continue to support development of **hypersonic technology** and directs the Undersecretary of Defense for Research and Engineering to provide a strategy for developing operational hypersonic weapons and the potential use for tactically responsive launch capabilities within three years.

Cybersecurity

The bill would focus on improving innovation, cybersecurity, and modern technology by elevating the Department's cybersecurity posture and critical infrastructure. The bill would authorize a \$268.4 million increase for DOD's cybersecurity-related efforts as well as full funding for the U.S. Cyber Command. Further, it would direct an increase of \$3 million for the cybersecurity of industrial control systems, to **expand the scope of current academic efforts to work with leading federal laboratories** on cybersecurity training.

The bill would strengthen the university cyber consortium of academic institutions that have been designed as **Cyber Centers of Academic Excellence for cyber operations, cyber research, and cyber defense**. Additionally, the bill would direct DOD to assess the need to establish a **cyberspace foundational science and technical intelligence center**. The bill would also require DOD to assess the cyber and information operation civilian and military personnel and education requirements of DOD, including an assessment of creating a **National Cyber Academy** for the military and civilian training.

Climate

The bill would direct DOD to address current and emerging climate and environmental challenges, including an assessment on climate resilience to identify **current and future climate risks to DOD, including extreme weather impacts**. The bill would create a series of competitively selected technology demonstration programs and a **university grant program** to strengthen the technology required to support environmental cleanup efforts.

The bill would also encourage the Department to create and/or partner with a consortium of industry, academic, and national laboratory partners dedicated to **military installation resilience and energy innovation**. The bill would require DOD to develop a plan to establish an **Arctic Security Initiative (ASI)** to enhance security in the Arctic region.

Workforce

The bill would authorize provisions that were also included in the House bill, such as \$4 million for **defense industrial skills and technology training**, \$7 million for Air Force-specific **research-based education and workforce programs**, and \$20 million for a **workforce transformation cyber initiative pilot program**.

Sources and Additional Information:

- The SASC FY 2021 NDAA is available at https://www.armed-services.senate.gov/imo/media/doc/FY22%20NDAA_full.pdf.
- The SASC Committee report to accompany the bill is available at <https://www.armed-services.senate.gov/imo/media/doc/FY22%20NDAA%20Report.pdf>.
- Funding tables are available at <https://www.armed-services.senate.gov/imo/media/doc/FY22%20Funding%20Tables.pdf>.