

**Intelligence, Emerging Threats and Capabilities Subcommittee Chairman
James R. Langevin
Opening Statement
Fiscal Year 2020 Budget Request for Department of Defense
Science and Technology Programs:
Maintaining a Robust Ecosystem for Our Technological Edge
March 28, 2019**

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Video link to hearing here: <https://armedservices.house.gov/2019/3/fiscal-year-2020-budget-request-for-department-of-defense-science-and-technology-program>

The subcommittee will come to order. Welcome to today's hearing on the Fiscal Year 2020 President's Budget Request for Department of Defense (DoD) Science and Technology (S&T) Programs.

I am pleased that for the first time in many Congresses we have the highest S&T leadership from the Department providing testimony. By having the top leadership, this hearing aims to elevate the discussion of S&T to the same level of importance as how many fighters, ships, and satellites the Department is buying.

The Department's S&T ecosystem is complex and comprises agencies; offices; laboratories; federally funded research and development centers; university affiliated research centers; academic partnerships; test and evaluation entities; and partnerships with the private sector – including small businesses. This S&T ecosystem is charged with delivering the best capabilities to the warfighter in the near, mid, and long-term.

For such an important portfolio, the FY20 President's Budget Request totals \$14.5 billion, which is only 2.7% of the Department's base budget and only 3.2% above the FY19 requested funding level. Adjusted for inflation, the FY20 request is only 1% higher despite the increasing cost escalation of highly specialized technical labor like scientists and engineers with advanced degrees and PhDs.

To say it another way – normalizing for inflation and labor cost escalation, this S&T budget has effectively been shrinking for years. And this is the budget that must lay the groundwork today for our future technological edge in the next ten to twenty years. I also want to point out that unlike the shrinking of the S&T request, the Department’s FY20 investment in advanced component development and prototypes funding grew by \$5.8 billion from the FY19 request, or by 27%. Although I strongly support efforts to get new technologies across the valley death and into the hands of our service members, we must be cognizant of the fact that we must also invest in the long-term basic and early-stage applied research that will allow for revolutionary advancements down the line.

In the past three National Defense Authorization Acts (NDAAs) alone Congress has granted almost two dozen authorities to improve the Department’s S&T workforce, facilities, and infrastructure to champion in-house innovation for the future of force modernization, warfighting operational concepts, and acquisition. I remain disappointed that many of those authorities have been underutilized by the Department.

This is also hard to reconcile with the National Defense Strategy (NDS) which highlights long-term strategic competition with China and Russia and the need for an unparalleled National Security Innovation Base.

It is no secret that China is stealing our intellectual property to further their objective to be a research and engineering powerhouse and compromise our warfighting edge. Make no mistake however, China is not the only nation conducting these activities.

China is, though, one of the few state actors that has coupled such tactics with considerable investments and resources behind a national strategy that involves a whole-of government effort and leverages society to promote “indigenous innovation.”

Yet, this President's Budget Request decreases S&T and R&D funding across the Executive Agencies including at the Department of Energy's Office of Science, the National Institute of Standards and Technology, and the National Science Foundation.

If the U.S. is to remain a global leader in technology, we cannot simply play defense, we must also play offense. Investments in science and research and other development efforts across the whole-of-government are necessary and vital to maintaining a technological edge.

Beyond R&D specific funding we must also invest in STEM education, programs that develop junior talent into future tech leaders, and implement policies that promote a sound economic, political, and strategic environment on U.S. soil where global collaboration, discovery, innovation, public institutions and industry can thrive. I recognize that the open dialogue and debate of academia can be anathema to the secrecy we rely on in the Department of Defense. But we must also recognize – and embrace – the competitive advantage our free society gives us to out-innovate and develop better products faster.

Setting ourselves apart from our strategic competitors also means abiding by our American values and keeping our policy as – or more – developed than the technology itself. Foundational work for the current understanding of Artificial Intelligence (AI) done in the 1950s and '60s was funded by DARPA and the Office of Naval Research and aided by the convening power of universities. [1]

We've been working on this technology for over half a century. Yet, in the John S. McCain FY19 NDAA (Public Law 115-232) Congress had to create a National Security Commission on Artificial Intelligence to expedite the policy,

^[1] Babb, Colin E., "How We Got Here – A Small Tale of the Autonomy and the Sea", Future Force: Spring Edition 2014

strategy, and implementation plan that absolutely must be thought through for our nation to effectively and ethically use this capability.

For AI, and for each of the other seven rapid technological advancements outlined in the NDS, I am looking to the Department to lean forward on strategically developing policies on how we should use and deploy these future technologies, and how these emerging capabilities will contribute to new security strategies. Such effort is especially important with hypersonics and directed energy, which present a myriad of policy and political considerations and challenges.

Finally, I must emphasize that we will not attain the technological edge we need if we refuse to take risks in our R&D portfolio and if we do not empower risk-takers who are willing to push the boundaries on innovation. I realize this will not come easily for the Department of Defense, because the overriding culture is one of never failing – after all, in many aspects of the Department’s missions, failure means people will die. However, in the S&T space, an attitude that conservative means we will never conceive of the technological leaps that will ensure our warfighters never go into a fair fight. It is incumbent upon the leadership in the Department to avoid perpetuating an overly conservative culture in the S&T enterprise, and I hope to hear from our witnesses today what they are doing to encourage reasonable risk-taking. In turn, so long as the Department is transparent about such failures, Congress – and this subcommittee in particular - must be willing to provide top-cover for those that fail fast, fail smart, fail forward, and internalize the lessons-learned from those failures.

Before us today are the Services’ technology and acquisition executives. These individuals must divide their attention between fielding the best technology to the warfighters as quickly and as efficiently as possible in the near and mid-

term, and protecting the scientists and innovators working on the next generation of S&T that will enable the Department to keep its technological edge over the long-term.

In section 901 of the FY17 NDAA (Public Law 114-328), Congress split the former Under Secretary for Acquisition, Technology and Logistics (USD(AT&L)) into two and created the Under Secretary of Defense for Research and Engineering (USD(R&E)) to empower Department leadership to drive towards better innovation, advancing science and technology, and reducing risk-intolerance in the pursuit of new technologies.

Dr. Griffin, the first USD(R&E) since this change, is the Chief Technology Officer for the Department and is responsible for the research, development, and prototyping activities across the DoD enterprise. He is mandated with ensuring technological superiority for the Department of Defense.

Dr. Bruce Jette, the Assistant Secretary of the Army for Acquisition, Logistics and Technology; Mr. James “Hondo” Guerts, the Assistant Secretary of the Navy for Research, Development & Acquisition; and Dr. Will Roper, Assistant Secretary of the Air Force for Acquisition, Technology and Logistics, are the three Service Acquisition Executives (SAE) responsible for executing and overseeing the Services’ research, development and acquisition activities.

I look forward to hearing from our witnesses on the FY20 S&T request and note that following this discussion, we will continue in a closed, classified, follow-on discussion with representation across the spectrum of the S&T ecosystem -- the Defense Advanced Research Projects Agency, the Department’s laboratories and academic partnerships, the Strategic Capabilities Office, and the Defense Innovation Unit.