



RESEARCH  
AND ENGINEERING

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MEMORANDUM FOR CHAIRMAN, DEFENSE SCIENCE BOARD

SUBJECT: Terms of Reference - Defense Science Board 2019 Summer Study on the Future of U.S. Military Superiority

As we enter into renewed great power competition, the U.S. does not enjoy the same historical military superiority over potential adversaries. Technological parity, nuclear weapon proliferation, and successful gray zone operations coupled with expected home field advantages of potential adversaries serve as effective deterrents and complicate our decision-making as we attempt to coerce others to achieve our national goals. Meanwhile, both state and non-state actors increasingly seek non-military means to counter U.S. national security objectives.

In the face of waning military technological superiority, the Department of Defense (DoD) must not just modernize its equipment. The Department must also consider more broadly new ways and means to coerce potential adversaries. Kinetic firepower may be the ultimate arbiter of future wars, but short of full-scale conflict, the U.S. requires additional, possibly asymmetric and non-kinetic, mechanisms to influence adversary decision calculus. Twenty-first century great power competition will require creative alternatives to traditional military weapons—alternatives that will cause potential adversaries to pause before undertaking further actions against American interests.

Considering the strategic environment is unlikely to change significantly in the coming years, I ask that the Defense Science Board (DSB) to develop creative ways and means beyond traditional weapon systems to achieve National Defense Strategy objectives. The scope of the study should include novel employment and harmonization of existing whole-of-government capabilities. The DSB should pay particular attention to the intelligence collection and exploitation required to leverage U.S. capabilities. Finally, although the United States must never stray from our values, we must not hesitate to utilize the full and creative force of American ingenuity to secure U.S. interests. We must explore the full spectrum of national capabilities to manage escalation and deter adversary aggression.

In this study, the DSB should address the following:

- Irrespective of the erosion of military technological superiority, there are powerful things the United States can do to exploit fully our current lead in undersea, space, information, artificial intelligence and autonomy, communications, and directed energy technologies. How can the U.S. use military technological advantages in novel ways to influence or disrupt adversary decision-making? What are the most promising possibilities that should be the highest priority for DoD?

- Effective coercion requires understanding adversary values; imposing costs beyond expected benefits. How can the DoD better understand individual states' key values and interests? What should DoD do to influence adversary behavior given adversary value sets and areas of weakness?
- How can we counter adversary influence and information operations including countering false narratives? This must consider methods for detecting and warning of influence operations across all domains as well as ways to counter false or specious narratives with global audiences (e.g., U.S. citizens at home and abroad, allies and partners, etc.).
- American economic might has long been a strength in global influence. Rising powers, however, are using economic means to successfully exert influence regionally and globally. Market access, access to investment capital, and ownership of critical infrastructure are examples of tools adversaries use to great effect that also afford opportunities for U.S. influence or counter-influence. How can we best leverage U.S. financial, economic and commercial power to complicate and influence rising powers in response to commensurate adversary actions?

The Under Secretary of Defense for Research and Engineering (USD(R&E)) will sponsor this summer study. I am authorized to act upon the advice and recommendations of the DSB. The current DSB Chairman, Dr. Craig Fields, and Vice-Chairman, Dr. Eric Evans, will serve as co-chairmen of this board-level study. The Executive Secretary will be determined at a later date. Lt Col Milo W. Hyde IV, DSB Executive Director and Designated Federal Official, will serve as the DSB Secretariat.

The study members are granted access to those DoD officials and data necessary for the appropriate conduct of their study. The USD(R&E) will serve as the DoD decision-maker for the matter under consideration and will coordinate decision-making as appropriate with other stakeholders identified by the study's findings and recommendations. The nominal start date of the study period will be within three months of signing this Terms of Reference, and the study period will be between 9 to 12 months. The final report will be completed within six months from the end of the study period. Extensions for unforeseen circumstances will be handled accordingly.

The study will operate in accordance with the provisions of P.L. 92-463, the "Federal Advisory Committee Act," and DoD Instruction 5105.04, the "DoD Federal Advisory Committee Management Program." It is not anticipated that this study will need to go into any "particular matters" within the meaning of title 18, United States Code, section 208, nor will it cause any member to be placed in the position of action as a procurement official.

  
Michael D. Griffin