On behalf of the Consortium for Ocean Leadership (COL), which represents our nation’s leading ocean science, research, and technology organizations from academia, industry, and the larger nonprofit sector (to include philanthropy, associations, and aquariums), I appreciate the opportunity to submit for the record our fiscal year (FY) 2021 funding priorities for the Department of Defense (DOD).

The United States is a maritime nation whose military and national defense are essential, not only to the security of our own country, but to the stability of global democracy. A key component of this continued success is our military’s technological superiority, which has provided superior weapons and systems that offset size and geographic advantages of potential adversaries for more than 70 years. This extends to our dominance in the ocean environment. The late Admiral James D. Watkins, chief of naval operations from 1982-1986, used to stress that our superior knowledge of the undersea domain gave the United States the competitive advantage necessary for our victory in the Cold War.

Do we have that same competitive advantage in oceanography—which lets us understand the undersea environment—to outcompete an adversary today? As other nations, such as Russia and China, increase their investments in ocean-related research and development (R&D) spending, they threaten our leadership in this sector, which was once second to none. Advances in technology are necessary for us to observe, monitor, map, explore, and characterize our undersea environment; without those capabilities, we cannot maintain our competitive advantage. As a way to address the eroding competitive advantage in ocean science, the Navy established Task Force Ocean (TFO).

However, it is not just in the undersea domain where our science- and technology-induced dominance is eroding. This same runs true for our overall technological advantage, with DOD leaders testifying to other nations meeting and beating the United States in innovative and strategic capabilities. There are many who believe our gap in leadership is closing due to multiple factors, including both changes in composition of research and development funding as well as the growing technological skills of potential adversaries. While there are many efforts that must be taken to maintain our technological advantage (TFO being just one of them), one consideration that has been raised is the adequacy of DOD’s investments in Research, Development, Test, and Evaluation (RDT&E).

While the president’s budget request for FY 2022 includes a request for the largest increase ever for the RDT&E top line (4.5% over FY 2021 funding levels), this does not extend to the science and technology (S&T) budget within RDT&E. The S&T budget request includes a steep 13% decrease for the S&T budget compared to FY 2021 enacted levels, with basic research (6.1) and applied research (6.2) seeing a 14.5% decrease and advanced technology development (6.3) dropping 11.1%. Similar decreases are proposed within Navy’s budget but with an 11.9% overall decrease to S&T: 8% for basic research, 17.5% for applied research, and 7.2% for advanced technology development.
These dramatic decreases in S&T funding would impact our nation’s military superiority and our technological edge, and COL echoes the concerns and requests from testimony submitted by the Coalition for National Security Research (CNSR), which includes more than 100 members from industry, academia, scientific and professional associations, and nonprofits that advocate for a strong Defense S&T enterprise. As stated in CNSR’s testimony, “With China investing three times more annually in R&D than the U.S. and likely to be the world’s top R&D performer in the near future, now is not the time to cut funding for the DoD’s primary programs that create new technologies and capabilities—as well as to help train the next generation defense workforce—to ensure the U.S. military maintains its global dominance.”

I respectfully request the subcommittee reject the proposed Defense S&T cuts and instead increase funding by at least six percent over FY 2021 levels, in accordance with the CNSR request, which is consistent with recommendations from the National Defense Strategy Commission, the National Academies, the House Armed Services Committee’s Future of Defense Task Force, and many others. I’d also like to highlight funding priorities for several program elements (PE) important to our defense ocean science and technology enterprise.

Defense Basic Research: University Research Initiatives
DOD supports basic research to advance fundamental knowledge in fields relevant to national defense. To accomplish this work, DOD has a strong relationship with academia, with universities and colleges performing 55% of DOD-funded basic research. The University Research Initiatives (URI) exist across the services to improve the quality of research and to support scientists and engineers necessary for our national defense needs. The proposed 20% cut to URI funding across the Army, Navy, and Air Force would put funding, when adjusted for inflation, at lower than 2005 levels. For Navy URI specifically, the budget request proposes an 18.9% decrease.

One of the Navy URI programs, the Defense University Research Instrumentation Program (DURIP), is a competitive annual grants process that supports university research infrastructure, including instrumentation essential for cutting-edge research, that is necessary for high-quality research in the Navy’s interests. Given the role colleges and universities play in performing the majority of DOD-funded basic research, it is critical they maintain the requisite infrastructure and equipment. DURIP's calls for proposals have only been able to fund a fraction of what is needed—in FY 2020, DURIP (including Army and Air Force DURIPs) funded 172 projects but left 552 proposals unfunded, including 229 critical infrastructure and equipment projects that were not funded simply due to a lack of appropriated funds, even though they were considered worthy of support. I respectfully request strong support for URI and at least an additional $20 million for Navy DURIP (PE 0601103N) in FY 2022.

The Chief of Naval Operations launched Navy’s Task Force Ocean (TFO) in 2017 to bolster the Navy’s commitment to ocean science and technology by strengthening partnerships with academia and the private sector to advance ocean science relevant to Navy interests. Its goals and scope are based on the recognition that the entire U.S. ocean scientific and technological enterprise must be utilized to sustain our naval competitive advantage. I appreciate the subcommittee’s support for TFO and respectfully request an increase of $10 million
to the Ocean Warfighting Environment Applied Research, Navy RDT&E, Line 10, PE 0602435N for Research at Sea in Support of Task Force Ocean. This additional funding would enable more at-sea research that would help the Navy improve operations and meet its goals. It would allow for increased testing and demonstration of science and technology concepts (e.g., seagoing oceanography, acoustics, signal processing, uncrewed systems, and data analytics) and would more quickly move research to operations due to the increased number of scientists and projects able to go to sea.


For more than 20 years, the National Oceanographic Partnership Program (NOPP), established in the National Defense Authorization Act for Fiscal Year 1997, has been facilitating interagency and public-private partnerships and advancing large-scale collaborations in ocean research that address economic development, national security, quality of life, and science education. NOPP-supported projects have enabled unique partnerships between DOD, federal agencies, universities, and the private sector to help us understand our ocean, improving our understanding of strategic bathometric and natural processes that are essential to advanced ocean combat and security activities, particularly with respect to China’s growing interest in ocean domination. NOPP has also helped grow the ocean-STEM pipeline through support of the National Ocean Sciences Bowl (described below) and significantly contributes to the buildout and modernization of the National Security Innovation Base. I greatly appreciate the Navy’s continued support for NOPP and respectfully request an addition $8.7 million above the FY 2021 enacted level for a total of $17.5 million.

Finally, it is imperative that Navy STEM funding be prioritized and increased, as attracting, recruiting, and retaining a talented and diverse workforce is critical to operations. Building a diverse workforce capable of maintaining our military superiority does not start with support for those already in the STEM fields (which is an important component of it) but instead begins with bringing talented individuals to the pipeline. A series of workshops supporting the development of TFO’s strategy and roadmap recommended investing in K-12 ocean-STEM initiatives—because the recruitment pipeline must begin prior to university training or military enlistment—as a mechanism to ensure the Navy has an adequate ocean science workforce in the coming decade.

However, most high schools don’t include Earth or ocean sciences as part of their formal coursework; while 98% and 94% of high schools offer disciplinary biology and chemistry courses, respectively, only 48% offer environmental or Earth science courses. Therefore, it is up to informal education programs to build interest and knowledge in ocean science and careers in ocean science and engineering. It is crucially important for the Office of Naval Research (ONR) to increase investment in informal ocean education programs. For example, ONR is a founding sponsor of the National Ocean Sciences Bowl (NOSB), but support for such educational programs—as with ocean science as a whole—has not been able to keep pace with the need for talent in this field. In its 24-year history, the NOSB, a program of COL and a quiz-bowl style ocean science competition for high schoolers, has introduced tens of thousands of students to the possibility of a career in ocean science years before they might have otherwise considered it as a career path (if at all). By supporting the NOSB, the Navy can engage a future skilled workforce capable of enhancing maritime domain awareness and exploring viable solutions to the growing challenges facing our ocean and planet. I
respectfully request an additional $50 million to support ONR’s K-12 STEM education efforts.

Thank you for the opportunity to submit testimony and for your time and consideration, as maintaining our nation’s competitive advantage in the maritime domain is of utmost importance.

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Consortium for Ocean Leadership Members
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