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) through the Defense Appropriations Act.

The ongoing global crisis surrounding COVID-19, given its likely link to wildlife, has made the connection between the environment and human health abundantly clear. This environment includes our ocean, most of which remains unknown and unexplored, and which has so much potential to be either the cause or the solution to our next global health crisis. Now, more than ever, there’s an enhanced need for investment in ocean science and technology. As a maritime nation, not just our health but our national, homeland, energy, food, water, and economic securities depend on a healthy ocean — which in turn depends on ocean science and technology. I refer to this concept as “ocean security,” the understanding of which enables us to safely operate autonomous vehicles, to know if the weather will be appropriate for Navy SEALs to carry out their mission, to collect acoustic data for defense purposes, to make informed decisions about military infrastructure based on sea level rise projections, and so much more.

As we rightfully focus on mitigation of the impacts of COVID-19 on our DOD and military forces, we must also keep our eye on the ball of decaying, global maritime superiority in the face of peer competition, especially in warfare areas that rely heavily on scientific and technological advantages. For the last 30 years, the United States has remained dominant in the ocean environment. In fact, the late Admiral James D. Watkins, chief of naval operations from 1982-1986, used to attribute our victory in the Cold War to oceanography — our superior knowledge of the undersea domain gave the United States the needed competitive advantage. This uncontested science- and technology-induced dominance is eroding and being ceded to countries such as China, India, and Russia. In fact, DOD leaders have testified that competitor nation states are meeting and beating the United States in innovative and strategic capabilities, and DOD has conceded to the attrition of our competitive military advantage in air, land, sea, space, and cyberspace. The Navy acknowledges the U.S. competitive advantage in ocean sciences has eroded and established Task Force Ocean (TFO) to remediate this erosion.

I hope as the subcommittee makes funding decisions for FY 2021, you will provide the needed support for programs that advance our nation’s ocean security, especially given the critical need to invest in ocean science and technology in light of the COVID-19 crisis. Ensuring our nation remains the dominant maritime power, economically competitive, and scientifically literate while staying secure in our access to food, water, and energy all while recovering from and preventing another global pandemic, is of utmost importance. I respectfully request the subcommittee provide the Department of Defense with no less than the funding levels enacted in the FY 2020 spending bill, which were $2.6 billion for basic research, $6.1 billion for applied research, and
$7.4 billion for advanced technology development. To ensure that our nation can maintain maritime superiority in an increasingly unstable world, I respectfully request the subcommittee provide the Navy with no less than the science and technology funding levels appropriated in the FY 2020 spending bill, which were $651 million for basic research (6.1), $1.2 billion for applied research (6.2), and $807 million for advanced technology development (6.3).

We must act now to address immediate and future threats to our knowledge advantage and remain ahead of our peer and near-peer competitors in maritime power competition. DOD’s science and technology program does just this, balancing basic research to respond to future threats through emerging science and technologies with applied research to enable successful, rapid transition of suitable scientific and technological capabilities to maintain our near-term warfighting advantage over potential adversaries. Below are some key areas of investment to ensure our nation maintains its knowledge-based maritime superiority across the world ocean.

**Task Force Ocean**

Navy’s Task Force Ocean (TFO) was established in 2017 to bolster the Navy’s commitment to ocean science and technology. TFO focuses on observing the ocean environment, processing data into useful products, and strengthening the Navy’s ocean science technical workforce while advancing partnerships with academia and the private sector. I appreciate funding increases in the 6.2 account to implement TFO’s at-sea research priorities (Ocean Warfighting Environment Applied Research), and it is crucial that these investments be maintained in coming years, especially as fiscal decisions related to COVID-based mitigation and recovery might be viewed as causing vulnerabilities in the current and future readiness of our Navy.

**Education**

Education initiatives are crucial to further our understanding of the impact of ocean science on national security. This includes support for programs like the Navy’s University Research Initiatives (URI) Program, which advances multidisciplinary scientific research and the transition of basic research to practical applications and the related Defense University Research Instrumentation Program (DURIP), which helps academic institutions acquire national security-relevant research capabilities to train the next generation. I respectfully request you increase each URI PE and require additional dollars support DURIP, though not at the expense of other initiatives funded under these PEs.

Giving the next generation the tools to solidify our superior ocean knowledge isn’t just about training those who have already chosen a career in the ocean sciences. It’s also about providing those in the K-12 realm, who have yet to choose a career path, information about what job options exist. It’s crucially important for the Office of Naval Research to continue supporting programs like the National Ocean Sciences Bowl (NOSB). In its 23-year history, the NOSB, 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 at a time when most high school curriculums don’t include any oceanography courses.
National Oceanographic Partnership Program

DOD isn’t the only federal agency tasked with understanding our ocean, and federal agencies aren’t the only ones endeavoring to do so. There are more than 600 businesses engaged in ocean observation and forecasting; over 400 postsecondary institutions that provide ocean-related certificates or degrees; and in excess of 45,000 nonprofits focused on ocean and coastal activities. To share information, observations, technology, and best practices, cross-sector and interagency collaboration are necessary. To this end, the National Oceanographic Partnership Program (NOPP), a congressionally mandated program established in the National Defense Authorization Act for Fiscal Year 1997, is an ideal vehicle to advance collaborative efforts and already has been involved with funding projects such as the Integrated Ocean Observing System, the Argo Project, and the JASON project. NOPP-supported projects help build our understanding of the world’s ocean, giving the United States a better understanding of strategic bathometric and natural processes essential to advanced ocean combat and security activities, particularly with respect to China’s growing interest in ocean domination. NOPP also brings together unique partnerships between civilian government agencies, the private sector, universities, and the Department of Defense, enabling U.S. interagency counterparts to advance U.S. influence and interests. The program also significantly contributes to the buildout and modernization of the National Security Innovation Base. I strongly appreciate the Navy’s support for this program and respectfully request an addition $8.7 million above the FY 2020 enacted level for a total of $17.5 million.

In closing, our nation’s position as the unequivocal maritime security power is eroding, but prioritizing investments in science and technology can help us maintain our superiority despite advancements by other nations. As pointed out in the 2018 Office of Net Assessment report, Maritime Environment 2050: Implications for U.S. National Security, ocean research and “accelerated mapping and associated observations and data science” can offset general transparency that is eroding surprise and stealth. As the ongoing COVID-19 pandemic has illustrated, the link between environmental, including ocean, and human health must be better understood. Investing in ocean science and technology will do more than ensure our maritime dominance; it will ensure the health of our nation and its people.

As you work to provide funding for these critical programs, I know you face difficult decisions that involve offsets and divestments to achieve a balanced budget. COL and our members stand ready to engage in discussion to help establish priorities around the ocean security framework to support these difficult decisions. Thank you for your exemplary leadership and dedicated work and for the opportunity to provide input into FY 2021 appropriations.
COL Member Institutions: Alaska Ocean Observing System • Alaska SeaLife Center •
Aquarium of the Pacific • ARCUS • ASV Global, LLC • Bermuda Institute of Ocean Sciences •
Bigelow Laboratory for Ocean Sciences • Chevron USA • College of William & Mary •
Consumer Energy Alliance • Cooperative Institute for Research in Environmental Sciences •
Dalhousie University • Dauphin Island Sea Lab • Duke University • Earth2Ocean • East Carolina University • Eastman Chemical Company • Esri • Estuary & Ocean Science Center, San Francisco State University • Exocetus • FAU Harbor Branch Oceanographic Institute • Florida Institute of Oceanography • Harte Research Institute • Hubbs-SeaWorld Research Institute •
IEEE Oceanic Engineering Society • Institute for Global Environmental Strategies • Institute for Marine and Antarctic Studies (UTAS) • JASCO • Johns Hopkins University APL • L-3 MariPro, Inc. • Lamont-Doherty Earth Observatory • Liquid Robotics, Inc. • Louisiana State University •
Louisiana Universities Marine Consortium • MARACOOS • Marine Technology Society •
Massachusetts Institute of Technology • MBARI • MIST Cluster program • Monmouth University Urban Coast Institute • Moore Foundation • Moss Landing Marine Laboratories •
Mote Marine Laboratory • Mystic Aquarium • National Aquarium • NERACOOS • New England Aquarium • NOIA • North Carolina State University • North Pacific Research Board •
Nova Southeastern University • Old Dominion University • Oregon State University •
Pennsylvania State University • Rutgers University • Saildrone • Savannah State University •
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University of Southern Mississippi • University of Texas at Austin • University of Washington •
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