April 14, 2020

U.S. House of Representatives
Committee on Science, Space, and Technology
2321 Rayburn House Office Building
Washington, DC 20515

Dear Dr. Obermann, Mr. Mathis, and staff of the House Committee on Science, Space and Technology:

Thank you for your bipartisan leadership in ensuring the research enterprise is able to resiliently recover from the COVID-19 crisis. 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 provide input on ideas related to research, development, and innovation funding and policies under your jurisdiction to be included in any near and longer-term economic stimulus package(s).

As we face the critical need for unprecedented economic recovery, we must embrace the opportunity to advance a transformational, new maritime economy that is oriented toward ocean sustainability and ocean health, both of which are crucial to the health and prosperity of all Americans. A transformational recovery of this nature must be founded on the work of our nation’s unmatched ocean science enterprise that includes all public and private maritime sectors and agencies. In addition to enhanced resourcing of the scientific agencies, revolutionary partnerships among the myriad public and private members of the ocean science enterprise will be critical to the success of an effort of this nature and magnitude. This will not be realized without the ardent support of your committee — in both near and longer-term congressional initiatives.

Near-Term Response to COVID Impacts on the Larger Research Enterprise

The need for more funding to support the research enterprise is critical, which involves in large part sustaining the research workforce. This includes undergraduate students mid-science degree, graduate students and post-docs who can no longer complete their data collection, highly specialized technical workers not able to work anymore, early career scientists missing out on opportunities to enter the workforce, and so many more. This workforce also includes small businesses that are vital to the ocean research enterprise. COL asks the committee to continue to support any near-term relief efforts that will ensure these critical small businesses remain viable throughout our nation’s economic recovery.

- COL agrees with the April 7 letter\(^1\) from AAU, APLU, AAMC, and ACE and recommends supplemental appropriations of $26 billion from the major research agencies, which includes NSF, NASA, NOAA, and NIST. This would cover requests for research grant and contract supplements; emergency relief to sustain personnel and base operating costs for core research facilities and use-funded research service; and additional graduate student and postdoc

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\(^1\) [https://www.aau.edu/key-issues/aau-aamc-aplu-ace-covid-19-research-recommendations](https://www.aau.edu/key-issues/aau-aamc-aplu-ace-covid-19-research-recommendations)
fellowships, traineeships, and research assistantships. COL also supports their request for temporary regulatory and audit flexibility now and in the immediate future.

- For undergraduate and graduate students in the science pipeline, COL requests additional support in the form of scholarships and fellowships. Graduate students serve as the backbone of research and innovation and supplementing their fellowship programs may be the only way to help them stay in the pipeline. For those looking at delayed graduations, COL recommends federal agencies offer extensions and supplements to student fellowships and thesis and dissertation grants. Those post-doctoral fellows hoping to join the academic workforce have found that hiring is delayed and likely will be for months, if not years, to come. COL recommends extending the term for all federal postdocs by one year and providing supplementing post-doctoral fellowship programs to increase the number of post-docs in the next cohort. Finally, early career scientists have missed out on opportunities to network and connect with other scientists and program managers at conferences and other events, potentially delaying their development and advancement. COL recommends federal agencies be instructed to create new initiatives to bridge these gaps and help address the potential delayed career progression. While some of these recommendations are out of the committee’s jurisdiction, I hope you will be able to provide support where possible, e.g. increased fellowship and grant opportunities in the agencies under your purview.

- To support the next generation of ocean scientists and experts at all levels of education, COL recommends expanding and increasing funding for important workforce development and training programs like the Sea Grant College Program; the Education Partnership Program; the Environmental Literacy Program; Bay-Watershed Education and Training Grants; education offices at our federal agencies; and public science and formal and informal educational activities at museums, aquariums, and zoos.

- COL recommends agencies find ways to expand support of virtual opportunities for students in the ocean-STEM pipeline. While this is critical to maintaining those in the pipeline today, it is also an opportunity to enhance future opportunities for students and ultimately grow the ocean science workforce as part of a larger, maritime economic revitalization.

COL also urges the committee to take the needed steps to maintain ocean observing systems and their associated human infrastructure. Ocean observations touch every part of our lives: weather forecasts, maritime commerce, national and homeland security, ecosystem health monitoring, and disaster response all depend on data from ocean observing systems — our people and our nation are at risk without them.

- The Integrated Ocean Observing System (IOOS) regional coastal observing network is crucial to weather forecasting, hurricane modeling, maritime transportation, Coast Guard search and rescue, and much more. COVID-19 has affected the ability to repair, maintain, and upgrade sensors and platforms, leading to a backlog in servicing and calibration that could cause aging systems in need of support to fail, with immediate impacts to the health and safety of Americans around the country. COL agrees with the IOOS request from the IOOS Association, which includes “$25 million for restoring, sustaining, and building resiliency for critical observations in support of weather forecasting, safe and efficient marine operation, and search and rescue missions.” This includes $12 million for high frequency radars, $7 million for gliders,
and $6 million for coastal moorings. COL also recommends the committee begin considering how to address the needs of the global observing community, not just the coastal system.

- In addition to IOOS, there are a number of ocean and atmospheric observing programs, and COL suggests increasing funding to fill their infrastructure and equipment needs. This includes modernizing research vessels, observing platforms, unmanned surface and subsurface vehicles, and artificial intelligence and quantum computing deployment and operationalizing observations of emerging technologies such as e-DNA and ‘omics for ecosystem and fisheries observing programs. In addition to reviving the academic research fleet (see below), the rapid insertion of these new technologies could help to advance the gaps in ocean monitoring caused by COVID-19.

- COL requests $50 million for US Academic Research Fleet (ARF), which consists of 18 vessels supporting 59 University-National Oceanographic Laboratory System (UNOLS) partner institutions that are utilized for at-sea research across multiple federal agencies, including NSF and NOAA. The fleet is on stand down until at least July 1 due to COVID-19, with a number of additional costs anticipated for operations to both ramp down and ramp up fleet readiness in addition to the impacts to research projects. Funds could also be used to modernize cyber infrastructure across the ARF, allowing for more rapid provision of crucial ocean data across the ocean science enterprise, as it can currently take up to a year for datasets to be shared with the larger science community. Funding would also enable data streams to be accessed in real-time and in perpetuity and two-way communications between scientists on land and at sea.

- In addition to the impacts on observing infrastructure are the impacts on human infrastructure. As supplemental allocations are determined, COL hopes the committee will support money for the people who keep the systems running, from technicians to early career scientists to those at academic institutions and small businesses.

Long-term Economic Stimulus/Recovery

The immediate needs described above, for both the workforce and observing infrastructure, should be carried into the future as appropriate to ensure adequate support is provided as we transition into a new blue economy. Therefore, COL requests support for increased investment in our ocean science agencies. As we move into a post-COVID world, it’s critical that the necessary increases to COVID-19 funding don’t come at the expense of understanding our ocean. This includes increased investment in multi-sector partnership efforts such as those under the National Oceanographic Partnership Program (NOPP) that coordinates efforts between sectors and ensures wise use of funds.

Additionally:

- COL agrees with the IOOS request from the IOOS Association, which estimates $75.65 million over the next one to three years. This includes $32 million for high frequency radars, $11.57 million for gliders, $25 million for coastal moorings, $5 million for shore stations, and $2.15 million for modeling/computing capacity to reach full resiliency.

- Additional support is needed in terms of extending observational programs, ocean and otherwise, that currently have assets deployed to maintain important time series through and beyond the crisis to track recovery and return to pre-COVID-19 levels.

- COL recommends $10 million appropriated to NOAA specifically for a NOPP program focused on recovery. This could include topics such as fishery enhancements, ocean exploration and
mapping, coastal health and resilience monitoring, ocean modeling and predictions, and other projects as identified by leadership of the NOPP program.

Thank you again for your leadership and for the opportunity to provide input in any near and longer-term economic stimulus package(s). I would be happy to discuss these ideas further at any stage.

Respectfully,

Jonathan W. White, RADM (Ret.), USN
President and CEO
Consortium for Ocean Leadership

Consortium for Ocean Leadership Member Institutions
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