

December 15, 2016

The Honorable Dr. Kathryn Sullivan
Administrator
National Oceanic and Atmospheric Administration
Herbert C. Hoover Building, Room 6811
14th Street & Constitution Avenue, NW
Washington, DC 20230

Dear Dr. Sullivan:

On behalf of the NOAA Science Advisory Board (SAB), I am pleased to transmit to you a report from the SAB on Emerging Technologies for NOAA Ocean Research, Operations, and Management in an Ecosystem Context. The SAB approved this report at its November 17-18, 2016 meeting.

The purpose of the report is to highlight some emerging technologies that NOAA may be able to implement now or in the next five years. The report contains information on technologies in 'omics, unmanned marine vehicles (UMVs), digital imaging, and others such as space-borne lidars, cubesats and passive acoustic recorders. These technologies have potential advantages to NOAA for providing more observational coverage in time and space with less human intervention, thus making more efficient use of large infrastructure assets, including ships and moorings, and offering the potential for long-term cost savings.

The report includes five recommendations on emerging technologies. These include new and continued investment in three technologies now – 1) 'omics, 2) robotic vehicles and new sensor technologies and 3) sophisticated data analysis techniques and personnel to utilize the high data volume of new sensing systems.

There are also recommendations to watch for future applications of two technologies - sophisticated imaging systems for shipboard laboratories, moorings and UUVs and *in situ* passive acoustic sensors as well as sensors for new orbital and suborbital platforms useful for ocean observations.

The SAB encourages NOAA to provide feedback, as you deem appropriate, at the first opportunity. Please let me know if you have any questions, comments or concerns.

Sincerely,



Lynn Scarlett, Chair, NOAA Science Advisory Board
Managing Director for Public Policy, The Nature Conservancy

Attachment

cc: Richard Spinrad
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