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## **“Turning the Headlights on ‘High’: Improving an Ocean Acidification Observing System in Support of Pacific Coast Shell Fish Growers”**

Rising anthropogenic atmospheric CO<sub>2</sub> changes ocean chemistry and negatively impacts shelled organisms like oysters, clams, and mussels making it more difficult to produce or maintain their shells. Effects of this process known as ocean acidification or “OA” are detectable in Pacific Coast and Alaska waters now, and these effects will continue to grow as CO<sub>2</sub> continues to increase. Each of the IOOS Regional Associations along the western Pacific coast, Northwest Association of Networked Ocean Observing Systems (NANOOS), Alaska Ocean Observing System (AOOS), Central and Northern California Ocean Observing System (CeNCOOS), and Southern California Coastal Ocean Observing System (SCCOOS), has seen the impacts of OA on regional shellfish industries. The shellfish industry is a major economy along the Pacific coast; as well this condition presents a cultural threat for coastal tribes and an ecological threat for the food web.

To adapt to this change in ocean chemistry, shellfish growers have turned to monitoring seawater in order to make better decisions for their growing operations, likened to putting “headlights on a car.” This project will provide growers with more robust, lower cost instruments. Working across four IOOS Regional Associations in partnership with the shellfish industry and other groups affected by OA, the project expands technical capacity and the development of new technology. Our proposed work includes development of observing technology, expert oversight intelligence, data dissemination, and outreach. The project is funded by IOOS and NOAA’s Ocean Acidification Program, in collaboration, to the University of Washington for anticipated three years.

The specific goals of the project are to:

- develop new lower cost and higher accuracy sensor technology for OA monitoring and expand them to new sites;
- utilize regional partnerships to implement and provide Quality Assurance/Quality Control (QA/QC) tests of the new OA sensors;
- establish data handling and dissemination mechanisms that provide user-friendly and standards-based web service access;
- provide education and outreach services to stakeholders concerned about and potentially impacted by OA.

Project partners include Pacific Coast Shellfish Growers Association, Sunburst Sensors, Oregon State University, University of Washington, Applied Physics Laboratory/UW, University of California-Davis, Scripps Institute of Oceanography, NOAA Pacific Marine Environmental Laboratory, AOOS, CeNCOOS, SCCOOS, and NANOOS. MSI awards are designed to allow academic, governmental, stakeholder, and sensor industry partners to bring sensors in development into operational use.

Year 1 funding for this effort is **\$318,000**.