

SURA Statement on Coastal and Ocean Research to the Office of the President-Elect

In *Priorities for the Incoming Administration*, the Ocean Research and Resources Advisory Panel (ORRAP) detailed five priorities for ocean science that are critical for the U.S. to respond to the present and emerging challenges of climate change, energy independence and national security. These are: basic ocean research, full implementation of an Integrated Ocean Observing System (IOOS), ocean education, ocean renewable energy, and transitioning from research to applications. Three objectives are necessary to successfully implement the five priorities: interagency collaboration, NOAA leadership, and critical legislation. The Southeastern Universities Research Association (SURA) wholeheartedly endorses the ORRAP recommendations.

However, to better maximize scarce science funding, SURA further emphasizes the need for a comprehensive and **overarching cyber infrastructure** to support the integration, archiving and dissemination of data obtained by IOOS and other observing systems, as well as computer modeling results. Informatics resources must be evolved to ensure that new observational data are distributed rapidly and in standard, readily understood formats. The resulting infrastructure must be trans-disciplinary – not agency-specific – and universally accessible and searchable. This is the only way to interconnect the eight priorities identified by ORRAP and to **maximize cost effectiveness and minimize duplication** of significant national investments. It is essential that the nation advance a universal informatics network to facilitate computation, data access, and predictions across science domains. This will fundamentally change the way we conduct earth systems science, advise policy decisions and serve critical information to problem solvers. **New information access and improved science** will lead to **better understanding** by the broadest possible scientific community, as well as policymakers and operational entities. By serving coastal and ocean information in common formats to a large, diverse community of scientists, engineers and operational users, a system (which we term a “distributed coastal laboratory” or DCL) can support the vision of **safe and healthy coasts**. This DCL could provide an informatics infrastructure to assist **commerce** and the development of innovative **renewable energy technologies** (e.g., offshore wind turbines, tapping of tidal, ocean wave energy, etc.)

“Safe” coasts translate to reducing the risk of life threatening disasters through improved predictability and mitigation of both natural and manmade events. By “healthy,” we are referring to both ecosystem health (e.g. water quality, fisheries) and human health (e.g. controlling water-borne pathogens.) A DCL will enable better approaches to dynamic, adaptive coastal management by providing information and modeling of multiple facets of coastal behaviors. Thereby, the alternative solutions and impacts can be considered and prioritized. Emergency managers will benefit from ready access to predicted information concerning water levels, waves and currents. These data will support informed decisions as to which coastal areas are most vulnerable and can assist with search and rescue operations or planning evacuation routes. As 50 percent of our citizens live within 50 miles of a coast, the **tangible benefits to society** will include reduced human tragedy related to coastal inundation, reduced erosion and property loss, safer navigation and recreation, cleaner coastal and estuarine waters, improved commercial fisheries and more efficient harnessing of energy from winds and waters. A National Academies report earlier this year calls for a nationally “integrated education-research-extension model” to develop “a powerful alternative to the current pattern of investment in expensive short-term and disconnected ‘projects’.” SURA’s DCL offers that glue to bring together the disparate parts of this ocean science puzzle.

Established in 1980, SURA is a consortium of over 60 colleges and universities in 16 states and Washington, DC. Our mission is to foster excellence in scientific research, to strengthen the scientific capabilities of the region and nation, and to provide outstanding training opportunities for the next generation of scientists. SURA enables universities to partner with one another, government and industry to expand and apply knowledge in the physical, biological, and other natural sciences. In addition to expertise in information technology and coastal research, SURA is the controlling and administrative member of Jefferson Science Associates, LLC, which is the management and operating contractor for the U.S. Department of Energy of the Thomas Jefferson National Accelerator Facility in Newport News, Virginia. Originally awarded the contract to design, build and manage Jefferson Lab in 1983, SURA has been the co-owner of JSA, along with Computer Sciences Corporation/Applied Technologies since December 2005.