

UCSD Unveils Center for Earth Observations and Applications

New center set to kickoff at inaugural symposium Nov. 20-22 at Calit2 Scripps Institution of Oceanography, UCSD

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As Earth becomes increasingly tested on a variety of environmental fronts—climate warming, global pollution and natural hazards, to name a few—new ways of observing and monitoring planetary changes have become critical to developing solutions for science and society.

In an effort to organize and enhance these efforts, the University of California, San Diego (UCSD) is spearheading a new center based at UCSD's Scripps Institution of Oceanography focused on monitoring and analyzing aspects of Earth and its environment on a global scale. The mission of the new Center for Earth Observations and Applications (CEOA) is to "stimulate, support and coordinate sustained research and applications in Earth observations at (UCSD)."

"Scripps has been a leader in studying and deciphering important environmental changes since its founding more than a century ago," said Marye Anne Fox, chancellor of UCSD. "The new Center for Earth Observations and Applications will continue this leadership and will give UCSD a launching pad for important programs that will provide vital information for populations around the world."

CEOA capitalizes on Scripps' long history of researchers and programs that have made key discoveries about important changes in the natural world. In the 1950s, Charles David Keeling initiated a program monitoring carbon dioxide concentrations in Mauna Loa, Hawaii, that has become the benchmark of global warming studies. The California Cooperative Oceanic Fisheries Investigations (CalCOFI), a partnership between Scripps Institution, the California Department of Fish and Game and the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service launched more than 50 years ago, has made the waters off California one of the most-studied environments in the world. The IDA (International Deployment of Accelerometers) project, a global network of broadband and very long period seismometers that make-up approximately a third of the global seismic network, is the longest operating digital seismic network in the world.

To further develop such effective programs that will benefit society, CEOA will provide a collaborative framework for the development of large-scale environmental initiatives involving partnerships with government agencies, business and industry leaders, other academic institutions and from within UCSD.

In addition to participation from a variety of scientists and programs at Scripps, CEOA will include researchers and initiatives from the various schools and divisions at UCSD, including centers such as the California Institute for Telecommunications and Information Technology (Calit2), San Diego Supercomputer Center (SDSC) and the National Center for Microscopy and Imaging Research (NCMIR).

"As the science of Earth observations moves toward more complex and integrated research programs, it was imperative to create an infrastructure within UCSD that provides scientists with support for large-scale projects," said CEOA Director John Orcutt, deputy director at Scripps Institution of Oceanography.

CEOA will be officially launched Nov. 20-22 at its inaugural symposium at the newly opened Calit2 building on the UCSD campus. "Science and Technology in Global Earth Observation System of Systems: The Role of Universities" will feature some of the world's top scientists and administrators in global observations.

The symposium will include a presentation by Jose Achache, head of the Global Earth Observation System of Systems (GEOSS), on GEOSS's current status, vision and challenges; Vice Admiral Conrad Lautenbacher, administrator for NOAA, speaking on the U.S.'s role in global observations; and Samuel Schuchat, executive officer, State Coastal Conservancy, elaborating on California and environmental monitoring initiatives.

"Calit2 already has a number of significant projects underway with CEOA to drive innovation in Earth system sciences," said Larry Smarr, Calit2 director and one of the featured speakers at the CEOA symposium. "We will be showcasing these projects in a joint CEOA/Calit2 booth at Supercomputing '05 in Seattle, November 14-18, and the American Geophysical Union meeting in San Francisco, December 5-9."

Background

Earlier this year, representatives from nearly 60 countries signed an agreement indicating their intention to move Earth monitoring into a new age with the creation of GEOSS. With networks of instruments taking measurements from space, on land, in the oceans and in the atmosphere, GEOSS will elicit details about the planet by coordinating and integrating data previously obtained in isolation. Such integration will provide new perspectives to scientific, public and governmental users across the globe on a variety of topics, including ocean monitoring, resource management, weather forecasting and air quality, water resource management, disaster reduction, biodiversity conservation, sustainable land use and management, climate change and other areas.

"The GEOSS initiative will be crucial in the decades ahead for keeping an eye on the planet's vital signs and monitoring key aspects of environmental systems," said Orcutt. "As GEOSS develops and expands, universities will play a leading role not only in scientific and technological development, but in operational aspects of the observation systems. CEOA will be well positioned to develop strategic collaborations to advance these crucial environmental observations."

As an integrator of global observation efforts, CEOA also will tap into California's rich base of industrial and academic leadership to stimulate new techniques and technologies for environmental monitoring. CEOA will in turn promote California's leadership capabilities at a national and international level. In addition to CalCOFI, another example of a successful regional observation system is the Southern California Coastal Ocean Observing System (SCCOOS), which will be presented at the CEOA symposium by Scripps scientist Eric Terrill. SCCOOS researchers are using coastal observation instruments—from radar to measurement stations to underwater glider vehicles—to monitor changes important for coastal water quality, marine life resources and coastal hazards. With the goal of improved management of the coastal ocean environment, SCCOOS officials are not only working with scientists, but with local, state and federal agencies, resource managers, policy makers, educators and members of the general public.

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