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University of Washington fact sheet

Coastal ocean observatory extends miles up Columbia River

The Columbia River is the source of three quarters of the water pouring into the Pacific Ocean from the West Coast. Scientists with a just-announced $19 million grant are poised to develop new technologies and infrastructures to monitor changes in the river below Bonneville Dam and predict how they affect wide swaths of ocean.

Science and Technology Center for Coastal Margin Observation and Prediction

- Will study "coastal margins," which include rivers that flow to the sea, coastal areas with bays and estuaries and the shores along such waterways that are home to both natural ecosystems and human activities.
- Will develop what has been nicknamed SATURN, a river-to-ocean observatory that relies on networks of riverbed and seafloor sensors, mobile platforms, and instruments and unmanned vehicles in the water that are all able to communicate with each other and scientists.

UW's Applied Physics Laboratory helping develop infrastructure and instruments

- UW's Applied Physics Laboratory will be taking up SATURN's infrastructure challenges of supplying power to instruments and communicating with instruments to obtain data and direct research. In addition, UW researchers and engineers will help develop underwater vehicles, miniaturize airborne ocean sensors and deploy new kinds of sensor networks, according to David Martin, an APL associate director and a co-principal investigator for the Science and Technology Center for Coastal Margin Observation and Prediction.
- "We need to be able to profile the whole water column across broad spatial areas to understand its physical, biological, sedimentary and chemical structure so we can begin to compare how things change when something like an El Niño is underway," Martin says.
- Other UW researchers will provide expertise about Columbia River microorganisms, estuary conditions and the Pacific Ocean.

Emerging national initiatives on ocean observing systems

- There is growing interest and funding for long-term, continuous ocean-observation systems. In the United States, the National Science Foundation has mounted an Ocean Observatories Initiative (see http://www.orionprogram.org/OOI/default.html).
- Although not a part of the U.S. Ocean Observation Initiative, SATURN will dovetail with other ocean observing efforts, Martin says. Researchers with the new center, for instance, will collaborate with U.S. and Canadian organizers of the seafloor NEPTUNE project (http://www.neptune.washington.edu/) and with Canadians operating the near-shore observatory called VENUS (http://www.venus.uvic.ca/).

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