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Ocean Research – Perspectives from an international Ocean Research Coordination Network

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The need for improved coordination in ocean observations is more urgent now given the issues of climate change, sustainable food sources and increased need for energy. Ocean researchers must work across disciplines to provide policy makers with clear and understandable assessments of the state of the ocean. With advances in technology, not only in observation, but also communication and computer science, we are in a new era where we can answer questions asked over the last 100 years at the time and space scales that are relevant. Programs like GLOBEC moved us forward but we are still challenged by the disciplinary divide. Interdisciplinary problem solving must be addressed not only by the exchange of data between the many sides, but through levels where questions require day-to-day collaboration.

A National Science Foundation-funded Research Coordination Network (RCN) is addressing approaches for improving interdisciplinary research capabilities in the ocean sciences. During the last year, the RCN had a working group for Open Data led by John Orcutt, Peter Pissierssens and Albert Williams III. The teams has focused on three areas:

1. Data and Information formats and standards;
2. Data access models (including IPR, business models for open data, data policies,...);
3. Data publishing, data citation.

There has been a significant trend toward free and open access to data in the last few years. In 2007, the US announced that Landsat data would be available at no charge. Float data from the US (NDBC), JCOMM and OceanSites offer web-based access. The IODE is developing its Ocean Data Portal giving immediate and free access to ocean data.

However, from the aspect of long-term collaborations across communities, this global trend is less robust than might appear at the surface. While there are many standard data formats for data exchange, there is not yet widespread uniformity in their adoption. Use of standard data formats can be encouraged in several ways: sponsors of observational science programs can encourage or require standard formats for data storage; scientific journals can require that data in support of publication be deposited in a standard format; and finally, communities of scientists can recognize that observational or model-developed data sets are professional contributions deserving citation.

Even with standards for exchange, the availability of data and models can limited by cultural and policy issues. Investigators on NSF grants are expected to share with other researchers the primary data, samples, physical collections and other supporting materials created under their grants. Broader approaches to data availability are seen in the model of the human genome project; according to the Bermuda Agreement (1996), the funding agencies required that all scientists working on the human genome make the data quickly and openly available. Is this a model for ocean data?

This presentation will examine the steps forward in stimulating interdisciplinary research through data exchange and better addressing the gaps in communication and approaches that are still common across the ocean sciences.