



SCOR Newsletter No. 14

September 2009

Update on SCOR Finances

At this time of difficult finances throughout the world, SCOR is maintaining its financial stability, thanks to continued contributions from all SCOR nations and additional contributions from a few. The SCOR Executive Committee and Secretariat staff also manage SCOR's finances conservatively to ensure our long-term financial sustainability. The dues from all 36 nations that participate in SCOR are used to fund the management of SCOR, the Secretariat, an annual meeting of the Executive Committee, representation at the meetings of other organizations, and some working groups and joint meetings with our partner organizations.

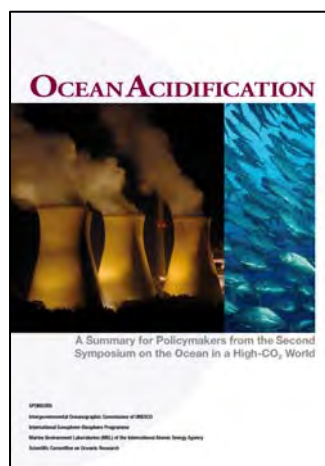
Special funding is provided for our research projects from agencies and institutions in the United States, France, the United Kingdom, Germany, and Spain, and from co-sponsorship by our international partners: the International Geosphere – Biosphere Program (IGBP), the Intergovernmental Oceanographic Commission, and the World Climate Research Programme. We appreciate this support, without which we could not maintain international project offices and scientific steering committees that carry out the important work of international ocean research planning and coordination. We need more national partners for these activities, as most of our projects do not have enough funding to carry out all the activities they have planned.

Support for SCOR working groups comes from SCOR dues, the U.S. National Science Foundation, and partner organizations that co-sponsor the groups (current examples include the International Association for the Physical Sciences of the Ocean, the Land-Ocean Interactions in the Coastal Zone project, the InterRidge Project, and the International Marine Aspects of Global Change project). In the past few years, a new national partner has emerged in the funding of working groups: Chinese institutions are now co-funding two SCOR

working groups, by supporting all the costs for one meeting of the group in China and by paying for the travel of any Full Members of the groups who are from China. We hope that other national funding agencies and even research institutions identify working groups they would like to support and take a similar approach.

Finally, SCOR is known in the global ocean science community for its capacity-building activities, beginning with the International Indian Ocean Expedition in the early 1960s. Most of these activities are funded from U.S. sources, with a small amount of funding from SCOR dues also contributing. The SCOR Committee on Capacity Building has a lot of ideas, but needs to identify more national funding to implement new activities. SCOR national committees could be very helpful in identifying new national funding sources for SCOR capacity-building activities.

Products from High-CO₂ Symposium



The *Summary for Policymakers* has recently been released (see cover at left); thanks to IGBP for their excellent work in laying out and printing this document!

The special issue of the journal *Biogeosciences* from the symposium now has 29 papers submitted and undergoing community comment and review. All of the documents and materials

from the meeting are available at <http://www.ocean-acidification.net/>. Planning for the third symposium, in 2012, will begin late in 2010.

SCOR Panel on New Technologies for Observing Marine Life

The SCOR Panel on New Technologies for Observing Marine Life continues work on its synthesis of the technologies used by the Census of Marine Life. A series of synthesis papers will be published in the open-access journal *PLoS One*.

The Panel is planning a Workshop on Ocean Biology Observatories, to be held in Mestre, Italy on 16-18 September 2009 (see http://www.scor-int.org/OBO_Workshop.htm). The goal of the workshop is to bring together biologists, the observing community, and the technology community to develop ocean biology observatories that could address the challenges of observing ocean life and its response to global change. Discussions will include observation systems designed to detect changes in ocean biology that result from ocean acidification and oxygen depletion, as well as changes in community structure, from microbes to zooplankton; distribution and movement of marine organisms and changes in ocean properties; vertical movements of predators and prey in relation to physical/chemical structures; trophic structures; and benthic dynamics. The results of the workshop will be documented in a workshop report and a summary paper, and will be reported to the OceanObs'09 conference the following week in Venice.

The new Web site for the Panel is available at <http://www.coml.org/scortechpanel/>. The site provides links to documents created by the Panel, as well as photos, videos, and animations of technology used by the Census of Marine Life.

SCOR Visiting Scholar Program



SCOR appointed its first Visiting Scholar, Dr. Paulo Relvas, an assistant professor at the University of the Algarve, Portugal. Dr. Relvas was invited by the Centro de Estudos del Mar

y Acuicultura, Universidad de San Carlos de Guatemala to provide an intensive course in Physical Oceanography during July 2009.

Applications will be open for 2010 Scholars soon. One or two individuals will be appointed in 2010, depending on funding availability.

SCOR Visiting Scholars can be from developed or developing countries. SCOR will provide some travel support and will help make arrangements for insurance,

if required. Host institutions are expected to provide local support.

Working Groups

Six proposals for new working groups were submitted for consideration by SCOR national committees (see <http://www.scor-int.org/2009EC/2009EC.htm> for proposals):

1. Evaluating the ecological status of the world's fished marine ecosystems
2. Coupled climate-to-fish-to-fishers models for understanding mechanisms underlying low-frequency fluctuations in small pelagic fish
3. Sea ice biogeochemistry
4. Climatic Importance of the Greater Agulhas System
5. Patterns of Phytoplankton Dynamics in Coastal Ecosystems: Comparative Analysis of Time Series Observation
6. Coastal Lagoons

The proposals are being evaluated by national SCOR committees in terms of scientific merit and quality, timeliness, relevance to SCOR, and achievability of the proposed terms of reference. Decisions about new working groups will be made at the 2009 SCOR Executive Committee Meeting in Beijing, China in October. Everyone in the international ocean science community is welcome to comment on the proposals and comments should be sent to Ed Urban by **15 September**.

WG 126 on The Role of Viruses in Marine Ecosystems—The group held its final meeting in conjunction with a symposium on aquatic viral ecology, in Newark, Delaware (USA). It has been focusing on the production of an online, freely available publication currently entitled *Methods in Aquatic Virus Ecology*. The special volume (funded by the *Gordon and Betty Moore Foundation*) will be assembled and published by ASLO (*Advancing the Science of Limnology and Oceanography*). The publication is expected to be completed by the end of 2009.

WG 127 on Thermodynamics and Equation of State of Seawater—WG127 has continued to make great progress in the past 12 months and is within sight of achieving virtually all its objectives. During the past year its International Thermodynamic Equation of Seawater 2010 (TEOS-10) has been adopted as the standard definition of seawater for engineering purposes by the International Association for the Properties of Water and Steam (in September 2008), and in late June 2009 by the Intergovernmental Oceanographic Commission (IOC) of UNESCO as the oceanographic definition of seawater. A TEOS-10 Web site has been created (see

<http://www.teos-10.org>) and a comprehensive TEOS-10 manual is being written. UNESCO/IOC plans to publish this TEOS-10 manual in 2010. The next meeting of the working group is planned for 2–5 September in Arnhem, The Netherlands, to discuss finalization of computer code and some aspects of the publication of its work; SI traceability of the measurement of Absolute and Practical Salinity; and introduction of the new thermodynamic definition of seawater for oceanographic instruments. Thank you to IOC and the U.S. National Oceanic and Atmospheric Administration for funding a fourth meeting of this group.

WG 128 on Natural and Human-Induced Hypoxia and Consequences for Coastal Areas—The major activity for this Working Group after its second meeting has been to prepare the manuscripts of synthesis papers. Ten synthesis papers will be submitted to *Biogeosciences* and posted on its Web site (http://www.biogeosciences-discuss.net/special_issue33.html) as discussion papers:

- Historical record of coastal eutrophication-induced hypoxia (Leading author: Andy Gooday)
- Effects of natural and human-induced hypoxia on coastal benthos (Leading author: Lisa Levin)
- Coastal hypoxia and sediment biogeochemistry (Leading author: Jack Middelburg)
- Impacts of hypoxia on the structure and processes in the pelagic community – zooplankton, macro-invertebrates and fish (Leading author: Werner Ekau)
- Coastal hypoxia responses to remediation (Leading author: Mike Kemp)
- Global oxygen trends in the coastal ocean (Leading author: Denis Gilbert)
- Hypoxia/anoxia as a source of N₂O and CH₄ greenhouse gases (Leading author: Wajih Naqvi)
- Modeling of hypoxia/anoxia (Leading author: Angelica Peña)
- Dynamics and distribution of natural and human-induced coastal hypoxia (Leading author: Nancy Rabalais)
- Overall summary (Leading author: Jing Zhang)

WG 129 on Deep Ocean Exchanges with the Shelf—The group held its final meeting in conjunction with the IAMAS-IAPSO-IACS Joint Assembly in Montreal. The group is working on a special issue of the journal *Ocean Science*. It is advocating the creation of a *World Shelf Atlas* and a searchable database of references related to deep ocean exchanges with the shelf, and is seeking a graduate student to help with this effort.

WG 130 on Automatic Plankton Visual Identification—The greatest impediment to widespread adoption of new imaging hardware has been the lack of intuitive, low-cost/no-cost software capable of harnessing the torrent of information that imaging systems can provide. The challenge that this group has accepted is to combine the best features of the currently available software packages. Through the activities of the group and research in related laboratories, it is rapidly moving to demonstrate to the broader oceanographic community how automatic image classification can provide ecologically meaningful data that could not otherwise be obtained in a reasonable time frame. At the group's most recent meeting, in Baton Rouge, Louisiana (USA), participants discussed progress in studies designed to be published in a dedicated volume of the *Journal of Plankton Research*. The group's final meeting will be held in 2010 in conjunction with either the Zooplankton Production Symposium in Chile, the ASLO Aquatic Sciences Meeting in Puerto Rico, or the ICES Annual Science Conference.

SCOR/IAPSO OceanScope WG 133—All eleven Full Members and an additional 12 individuals participated in the group's first meeting, in Montreal in July. The group had lively discussions about how to fulfill its terms of reference and is planning its next meeting in London in April 2010. Leaders and teams have been assigned to carry forward work on each term of reference, developing a white paper for each one. The goal is to create a draft Implementation Plan by the time of the next meeting for discussion there.

Large-Scale Ocean Research Projects

GEOHAB—The GEOHAB Modeling Workshop was held in Galway, Ireland in June. There were approximately 75 participants, of which 15 were students or post-doctoral fellows. The purpose of the workshop was to advance GEOHAB modeling activities and to provide opportunities for modelers and field scientists to work together. The GEOHAB SSC has approved a planning committee on HABs in Benthic Environments, to be held next year in Hawaii. Paul Bienfang (USA) has agreed to lead the planning committee. Benthic HABs, such as those causing ciguatera, are a serious problem in tropical areas worldwide and not much research has been conducted on the oceanographic controls on, and the ecology of, benthic HAB species.

IMBER—Lisa Maddison has assumed the responsibilities of the Executive Officer for IMBER. Several papers and special issues are underway from the first Imbizo, held last year, and IMBER is planning its second Imbizo open



science meeting, to be held in Crete, Greece, in September/October 2010. As with the previous Imbizo, the meeting will consist of three interdisciplinary workshops held in parallel, as well as plenary and poster sessions. Workshops will include oral presentations showing current research and knowledge about each topic and discussion sessions to identify questions to be addressed by IMBER.

SOLAS—SCOR and the other co-sponsors of the Surface Ocean – Lower Atmosphere Study (SOLAS) are considering new members of the SOLAS SSC. SOLAS has a busy year, with SOLAS Science 2009 planned for Barcelona, Spain on 16-19 November 2009 and the 4th SOLAS Summer School, which was held on 3-15 August 2009. At its mid-life, SOLAS is promoting scientific advances on 7 topics:

1. Sea-ice biogeochemistry and interactions with the atmosphere
2. Ocean-derived aerosols: production, evolution and impacts
3. Atmospheric control of nutrient cycling and production in the surface ocean
4. Ship plumes: impacts on atmospheric chemistry, climate and nutrient supply to the oceans
5. Activity of oxygen minimum (OMZ) in the Pacific (AMOP-SOLAS)
6. SOLAS Observatory and MOIN: the Minimalist OceanSITES Interdisciplinary Network
7. SOLAS large-scale field experiments - A compendium of proposals

SOLAS has limited funding for its activities, so in some cases is stimulating work on these topics that will be carried out outside SOLAS, such as in the case of the first topic above, which is the focus of a proposal for a new SCOR working group.

Other Activities

Ocean Mixing Group—SCOR approved the Ocean Mixing Group as an affiliated group at the 2008 SCOR General Meeting. This group is a follow-on to IAPSO/SCOR WG 121 on Ocean Mixing. It met in Montreal in July 2009 in conjunction with the IAMAS-IAPSO-IACS Joint Assembly and has begun discussing a symposium for 2010.

SCOR Annual Meetings

2009—The 2009 SCOR Executive Committee Meeting will be held in Beijing, China, on 20-22 October, in conjunction with an open science meeting of the GEOHAB Core Research Project on HABs in Eutrophied Systems and a meeting of the SCOR/LOICZ WG 132 on Land-based Nutrient Pollution and the Relationship to

Harmful Algal Blooms in Coastal Marine Systems. The annual SCOR meeting will mark the 25th anniversary of China-Beijing's entry to SCOR. The Web site for the meeting can be found at <http://www.scor-int.org/2009EC/2009EC.htm>. The background book for the meeting can be accessed on the meeting Web site.

2010—SCOR has accepted an offer from the French SCOR Committee to hold the 2010 SCOR General Meeting in Toulouse, France.

2011—The Finnish SCOR Committee has invited SCOR to hold its 2011 Executive Committee meeting in Finland.

For additional information about SCOR activities, please see the SCOR Web site: <http://www.scor-int.org>.

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Photos:

Page 1: Great Wall at Badaling, China, by Ed Urban

Page 4: Wuzhen, China, by Ed Urban

