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SCOR Working Group Proposals Available for Review

Seven proposals were submitted for new working groups to be considered at the 2012 SCOR General Meeting:

1. [Surface waves in ocean circulation and climate system](#)
2. [An "International Nutrients Scale System" to improve the global comparability of nutrient data](#)
3. [Marine ecosystem reorganisation under climate change](#)
4. [Sea-Surface microlayers](#)
5. [Quality control procedures for oxygen and other biogeochemical sensors on floats and gliders](#)
6. [Identify ecosystem Essential Ocean Variables for measuring change in the biological properties of marine ecosystems](#)
7. [The reassessment of marine dinitrogen fixation methodology and measurements](#)

These proposals are being considered by national SCOR committees, but comments also are welcome from anyone from the global ocean science community. Instructions for proposal review can be found on the SCOR General Meeting Web site (www.scor-int.org/2012GM/2012GM.htm). Comments on the proposals are due to Ed Urban (Ed.Urban@scor-int.org) by 1 September 2012. Each proposal will be represented by a member of the SCOR Executive Committee at the General Meeting.

Nominations for 2012 SCOR Elections

The Nominating Committee for the 2012 election of SCOR Officers received nominations for all SCOR offices. The nominations closed on 22 June and the slate of proposed candidates will be distributed to National SCOR committees for approval shortly.

SCOR Working Groups

WG 139 on Organic Ligands—A Key Control on Trace Metal Biogeochemistry in the Ocean: The group met for the first time in February 2012 in conjunction with the Ocean Sciences meeting in Salt Lake City, Utah, USA. An article about the group's plans and progress has been published in *EOS* (see Publications section) and another is being prepared for *Chemistry International*, the newsletter of the International Union of Pure and Applied Chemistry (IUPAC). The group has identified three overarching goals to be pursued over a four-year term: (1) promote improvements in quality, accessibility, and development of analytical methodologies for characterizing metal-binding ligands in seawater; (2) characterize which components of the dissolved organic matter pool make a significant contribution to biogeochemistry of trace metals in the oceans; and (3) identify the role of ligands in microbial ecology and marine biogeochemical cycles. Following its first meeting, the Working Group has begun working toward building a database to link trace metal biogeochemistry and organic geochemistry data at established time-series stations, advancing the ligand intercalibration program initiated by GEOTRACES, and summarizing methodological approaches to assess metal-binding ligands in seawater. The next Working Group meeting will be held on 16 February 2013, preceding the ASLO Aquatic Sciences Meeting in New Orleans, Louisiana.

News from SCOR Committee on Capacity Building

The SCOR Visiting Scholars program is in its third year and some observations so far are the following:

- There is an untapped pool of individuals—from early-career scientists to retired scientists—who are passionate about teaching and mentoring, and interested in working in developing countries for a short period. So far, five

individuals have successfully completed their assignments, with three more expected this year, and one who was delayed from this year to next.

- Although the cost of the program is modest, its outcomes have been significant, in terms of students helped and new contacts made.
- The requirement for hosts to provide lodging does not seem to make it difficult to find hosts.
- Not every applicant can be matched and sometimes successful matches fall through due to political/safety/timing issues. We need to be flexible in timing and willing to admit that we will not have a 100% success rate in matching approved applicants.

The Ocean Summer Schools Web site is available at <http://www.oceansummerschools.org/> and we are looking for additional summer schools to list.

The SCOR Committee on Capacity Building will be meeting just prior to the SCOR annual meeting, on 20 October 2012. We will be holding a regional meeting for southern Africa in November 2012, to discuss opportunities for SCOR to extend its work in the region and to provide an opportunity for representatives of countries in the region to discuss how they might cooperate in a regional network for graduate education.

Ocean Carbon Activities

The SCOR/IGBP/IOC **Third Symposium on The Ocean in a High-CO₂ World** in September 2012 has attracted about 500 registrants so far. 419 abstracts were submitted for presentations; 136 of these were selected for oral presentations to be given in three parallel sessions. Approximately 50 early-career scientists will receive travel support to participate in the symposium, thanks to funding from the U.S. National Science Foundation, the UK Ocean Acidification program, the Gordon and Betty Moore Foundation, and Beta Analytic, Inc. Forty early-career scientists will give presentations in the plenary sessions and will make up about 30% of the total number of participants.

The Scientific Steering Group of the SCOR/IOC **International Ocean Carbon Coordination Project (IOCCP)** met in Sopot, Poland, home of the new IOCCP project office, on 12-13 June. IOCCP's focus is on ocean carbon observations and data, including production of quality-controlled sets of global ocean carbon data, stimulating input to the Intergovernmental Climate Change Panel (IPCC) process and to the Global Carbon Project (GCP). IOCCP is going through a period of transition, decreasing scientific staff from two to one, refreshing its Web site, and becoming established in its new home. SCOR appreciates the service of Dr. Kathy Tedesco, who will complete her time as IOCCP Director on 30 September 2012.

Large-Scale Ocean Research Projects

The **Global Ecology and Oceanography of Harmful Algal Blooms (GEOHAB)** Scientific Steering Committee (SSC) held its 2012 meeting on 14-16 June in the historic Kronborg Castle in Helsingør, Denmark. GEOHAB will be completed as a joint SCOR-IOC project at the end of 2013, and is planning a final Open Science Meeting for 25-27 April 2013 at UNESCO Headquarters in Paris, France. The SSC also is planning a series of synthesis documents to be completed in late 2013 or early 2014. The SSC discussed a new mode of cooperation between SCOR and IOC beyond 2013, with SCOR establishing (with agency funding) a program of working groups focused on the science of harmful algal blooms, modeled on the well-established SCOR working group process.



It is a pleasure to announce that Dr. Bernard Avril joined the SCOR/IGBP **Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)** project as the Executive Officer in June. Dr. Avril's academic background is in marine biogeochemistry, bio-optics, and ecology. He comes to IMBER from the European Science Foundation, where he was Science Officer for Environmental Sciences, Geosciences and Sustainability Research. Prior to his position with the European Science Foundation, Dr. Avril was the Deputy Executive Director of the International Project Office for the Joint Global Ocean Flux Study (JGOFS), which was located at the University of Bergen in Norway. Dr. Avril brings to IMBER experience with global environmental change programs and management of international science programs. The IMBER IPO at the University of Bergen

opened in June. Lisa Maddison will serve as the IPO Deputy Director and an administrative assistant will be added to the office in the near future. Thanks to Lisa for her work as the second IPO Executive Officer and in moving the office from Brest to Bergen! The IMBER Scientific Steering Committee met in June in La Paz, Mexico.

The SCOR/IGBP/WCRP/CACGP **Surface Ocean-Lower Atmosphere Study (SOLAS)** held its 2012 Open Science Conference on 7-10 May in Cle Elum, Washington State, USA. The meeting attracted about 200 participants from 28 nations. The SOLAS Summer School 2013 will take place on 23 August-2 September 2013 in the new location of the State Key Laboratory of Marine Environmental Science, Xiamen University, China. The school will follow much the same format as previous schools, with a mixture of presentations from SOLAS scientists and practical sessions introducing many aspects of SOLAS research.

A Workshop on "An Interdisciplinary Assessment of Climate Change Impacts on the Arctic Ocean" was held in Vancouver (Canada) on 2-4 May 2012. The workshop advanced the coordination of an international **GEOTRACES** effort in the Arctic Ocean, coordination of GEOTRACES with other relevant Arctic projects (e.g., Arctic Great Rivers Observatory and "Arctic in Rapid Transition"), and initiation of the organization of a follow-up workshop in Moscow. Forthcoming GEOTRACES Workshops and meetings are

- GEOTRACES Latin America Workshop (12-15 November 2012, Rio de Janeiro, Brazil)
- GEOTRACES-COST Workshop on Stable isotopes of biologically important trace metals (13-14 September 2012, London, UK)
- GEOTRACES-COST Voltammetry Workshop (6-9 October 2012, Šibenik, Croatia)
- 2012 GEOTRACES Data Management Committee and Scientific Steering Committee meeting (Goa, India, 29-31 October 2012).

The GEOTRACES Standards and Intercalibration Committee examined 3,600 data points from 6 crossover stations in the Atlantic Ocean that were sampled in 2009–2011, and concluded that the agreement between data examined is reasonable.

The science plan for the SCOR/POGO **International Quiet Ocean Experiment (IQOE)** is being completed for external review.

Publications

WG 125 on Global Comparisons of Zooplankton Time Series has completed its work with a special issue

of *Progress in Oceanography*.¹ The group was able to access time series of zooplankton biomass and/or species abundance from more than 100 locations and statistical regions. The group's analyses showed correlation between populations within individual basins, but no global-scale synchrony in zooplankton populations. Many of the basin-scale synchronies seem to be related to climate features such as the Pacific Decadal Oscillation and the North Atlantic Oscillation. The analyses also showed evidence for changes in species composition at specific sites and directional shifts in species' geographic ranges.

This working group is the second of three SCOR working groups focused on analysis of time series of marine organisms. The first group, WG 98 on Worldwide Large-scale Fluctuations of Sardine and Anchovy Populations, found evidence for linkages among anchovy and sardine populations in different parts of the world, presumably due to climate connections among regions.² The third SCOR working group on time series, WG 137 on Patterns of Phytoplankton Dynamics in Coastal Ecosystems: Comparative Analysis of Time Series Observation, is focused on phytoplankton time series, using some of the same methods as used by WG 125, and is mid-way through its work.

SCOR/IAPSO WG 127 on Thermodynamics and Equation of State of Seawater completed its work in 2012 and an interesting account was published in *Ocean Science* of how the working group contributed to the development of the revised thermodynamic equation of seawater: Pawlowicz, P., T. McDougall, R. Feistel, and R. Tailleux. 2012. An historical perspective on the development of the Thermodynamic Equation of Seawater – 2010. *Ocean Science* 8:161–174 (see <http://www.ocean-sci.net/8/161/2012/>).

GEOTRACES has produced a special issue of *Limnology and Oceanography: Methods* on "Intercalibration in Chemical Oceanography" (see <http://www.aslo.org/lomethods/si/intercal2012.html>).

Although not a SCOR product, an action item from the 2011 SCOR Executive Committee meeting was to make known the document on marine scientific research and the Law of the Sea, which Bjørn Sundby helped revise (http://www.un.org/depts/los/doalos_publications/publicationstexts/msr_guide%202010_final.pdf).

¹ Pepin, P., D. Mackas, and H. Verheye. 2012. Global Comparisons of Zooplankton Time Series. *Progress in Oceanography* Volumes 97-100, pp. 1-186.

² Schwartzlose, R.A., J. Alheit, A. Bakun, T.R. Baumgartner, R. Cloete, R.J.M. Crawford, W.J. Fletcher, Y. Green-Ruiz, E. Hagen, T. Kawasaki, D. Lluch-Belda, S.E. Lluch-Cota, A.D. MacCall, Y. Matsuura, M.O. Nevarez-Martinez, R.H. Parrish, C. Roy, R. Serra, K.V. Shust, M.N. Ward, and J.Z. Zuzunaga. 2009. Worldwide large-scale fluctuations of sardine and anchovy populations, *South African Journal of Marine Science* 21: 289-347. Cited 214 times, according to the *Web of Science*SM.

Three recent articles in EOS provide updates on SCOR projects:

- **Southern Ocean Observing System (SOOS)** project: Schofield, O., M. Meredith, L. Newman, M. Sparrow, and E. Urban. 2012. Implementing a Southern Ocean Observing System. *EOS Trans. AGU* 93(26):241.
- **WG 139 on Organic Ligands—A Key Control on Trace Metal Biogeochemistry in the Ocean:** Sander, S., K.N. Buck, and M. Lohan. 2012. Improving understanding of organic metal-binding ligands in the ocean. *EOS Trans. AGU* 93(26):244.
- **SCOR/IAPSO WG 133 (OceanScope):** Rossby, T. 2012. Partnership proposed for ocean observation, *EOS Trans. AGU* 93(14):144.

News from National SCOR Committees

Australia—The Australian Academy of Science, parent of the Australian SCOR Committee, announces the following meeting:

Second Australian Earth System Outlook Conference:
Ticking Time Bombs in the Human-Earth System
26–27 November 2012

Shine Dome, Australian Academy of Science, Canberra

Canada—The Canadian National Committee for SCOR (CNC-SCOR) provides travel support to a Canadian school teacher to participate in Project Maury, which involves oceanographic training at the U.S. Naval Academy in Annapolis, Maryland. Project Maury promotes understanding of the physical foundations of oceanography through a dedicated training course directed at school teachers. The workshop includes a wide range of oceanographic topics and activities on-site (classroom and lab) and off-site, including a field trip on a research vessel. The intention of CNC-SCOR is to make accessible up-to-date ocean science to school curricula through selected teacher training. In return, teachers commit to expanding the reach of their new training by offering a workshop to other teachers in their area. The teacher selected for 2012 is Thea Black, from Kalamalka, British Columbia.

CNC-SCOR awards a scholarship supplement of \$5,000 a year, available for two years, to a Canadian graduate student studying in Canada or abroad. The winner for 2012 is Cara Manning. She received her BSc from the University of Victoria and is now pursuing PhD studies with the MIT-WHOI Joint Program in Chemical Oceanography in Woods Hole, Massachusetts, USA. Cara's dissertation research involves the use of at-sea mass spectrometers to obtain continuous measurements of biological production and air-sea gas exchange. Cara is currently building a mass spectrometer to measure the noble gases Ne, Ar, Kr, and Xe in surface waters. Measurements of several noble gases can be used to develop a parameterization of air-sea gas exchange,

due to the unique physiochemical properties of each gas. Cara intends to use these instruments during seasonal ice melt in Canada's Arctic and the Bras d'Or Lake in Nova Scotia.

France—The French SCOR Committee (French acronym: CNFRO) met in Paris on 12 June to evaluate the 7 Working Group proposals, discuss the CNFRO budget, and discuss rotation of the committee's membership. Catherine Jeandel and Marie-Alexandrine Sicre have been renewed as president and secretary of CNFRO, with a desire to find replacements for their positions.

SCOR Annual Meetings

2012—CNC-SCOR will host the 2012 General Meeting of SCOR, October 20-24, in Halifax/Dartmouth, NS. It will be the first time SCOR has met in Canada since 1994 and the first time in the Halifax/Dartmouth area since 1982. The SCOR meeting will be held at Dalhousie University on Oct. 21-22, at the Bedford Institute of Oceanography (BIO) on Oct. 23, and can attend BIO's 50th Anniversary Symposium on Oct. 24. A dinner reception is planned for the evening of Oct. 22 at the Maritime Museum of the Atlantic.

2013—The site of the 2013 SCOR Executive Committee meeting has not yet been decided, but a formal offer is expected soon.

2014—SCOR will hold its 2014 General Meeting in Bremen, Germany.

For additional information about SCOR activities, please see the SCOR Web site: <http://www.scor-int.org>. To reach Secretariat staff, please send an email to Ed Urban (Ed.Urban@scor-int.org) or Lora Carter (Lora.Carter@scor-int.org).

Acronyms:

CACGP	Commission on Atmospheric Chemistry and Global Pollution
CNC-SCOR	Canadian National Committee for SCOR
GEOHAB	Global Ecology and Oceanography of Harmful Algal Blooms project
IAPSO	International Association for the Physical Sciences of the Oceans
IGBP	International Geosphere-Biosphere Programme
IMBER	Integrated Marine Biogeochemistry and Ecosystem Research project
IOC	Intergovernmental Oceanographic Commission
IOCCP	International Ocean Carbon Coordination Project
POGO	Partnership for Observation of the Global Ocean
SCAR	Scientific Committee on Antarctic Research
SCOR	Scientific Committee on Oceanic Research
SOLAS	Surface Ocean – Lower Atmosphere Study
WCRP	World Climate Research Programme
WG	working group

Acknowledgements of Figures:

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<http://museum.gov.ns.ca/mmanew/en/home/whattoseedo/permanentexhibits/cssacadia/default.aspx>

Page 2—GEOHAB SSC at Kronborg Castle