



SCOR Newsletter

October 2015 • #30



2015 SCOR Annual Meeting location at the
National Institute of Oceanography in Goa, India

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News from SCOR Working Groups

SCOR WG 141 on Sea-surface Microlayers—The Schmidt Ocean Institute has approved approximately one month of ship time (tentatively 9 October–12 November 2016) for a cruise of the R/V *Falkor* by a team representing the working group. The cruise will start in Darwin, Australia and finish in Guam. The focus of the cruise will be to study the role of the sea-surface microlayer on air-sea interactions.

SCOR WG 142 on Quality Control Procedures for Oxygen and Other Biogeochemical Sensors on Floats and Gliders met on 16–17 March 2015 in Brest, France. A major outcome of the meeting was a clear agreement among group members to prepare and publish a recommendation to the Argo community to implement an in-air measurement routine during float surfacings as an independent and reliable method to in-situ calibrate/correct oxygen optode data from floats. Based on the evidence provided, such a QC routine would remove any calibration biases, as well as drift issues, to an overall accuracy of approximately 1%. This approach would be a tremendous improvement over the current situation. The group plans to inform the wider Argo and marine biogeochemistry community about this recommendation through an *Eos* article.

SCOR WG 144 on Microbial Community Responses to Ocean Deoxygenation held a workshop in Warnemünde, Germany on 30 August–3 September 2015. The group's workshop at Saanich Inlet (Canada) in 2014 started the process of establishing a minimal core of technologies, techniques, and standard operating procedures (SOPs) to enable compatible process rate and multi-molecular data collection for study of oxygen minimum zones (OMZs). These recommended techniques and SOPs should facilitate future cross-scale comparisons and

time-series efforts that more accurately reflect in-situ microbial community structure and functions, an important consideration for future numerical model development incorporating multi-molecular data. The 2015 workshop in Warnemünde aimed to summarize existing knowledge and to elaborate recommendations for best practices for assessing microbial communities and biogeochemical processes in OMZs.

SCOR WG 145: Chemical Speciation Modelling in Seawater to Meet 21st Century Needs (MARCHEMSPEC)—WG 145 met in Šibenik, Croatia, on 12–13 April 2015, immediately following the closing symposium of WG 139. WG members have submitted 10 reviews of existing speciation calculation programs using a common questionnaire format focusing on the user interface. This material will be used to develop a first draft of desirable features in a “best practice” model, which will be discussed and refined at the WG's second meeting, in February 2016. The group is planning a variety of publications to announce the group's work and encourage participation by the global ocean science community.

SCOR WG 146 on Radioactivity in the Ocean, 5 decades later (RiO5) met for the first time on 15–17 July at the Woods Hole Oceanographic Institution (USA). The group's overarching goal is to improve information available to scientists, students, and the public about radioactivity in the ocean. It will do this by enhancing existing databases and writing a peer-reviewed article to reach the scientific community, develop teaching materials and hold a training workshop to reach students, and seek funding to hold an international symposium on radionuclides in the ocean to bring together academic, nuclear industry, and national laboratory experts. The group is

developing a series of e-lectures on 1) Radioactivity Basics, 2) Introduction to Radionuclides in Marine Systems, 3) Radionuclides as Tracers of Marine Processes, and 4) Impacts and Radioecology. It will hold its next meeting in Xiamen, China in conjunction with public lectures on ocean radioactivity topics on World Ocean Day (8 June 2016) and a short training course for Asian students and young scientists.

SCOR WG 147: Towards Comparability of Global Oceanic Nutrient Data (COMPONUT)—WG 147 has arranged for the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) to sell nutrient certified reference materials (CRMs) at cost to get them out to the global community. WG 147 has distributed a questionnaire to determine the demand for these nutrient CRMs. The questionnaire can be found at http://www.scor-int.org/Working_Groups/Nutrient_CRM_Questionnaire.docx. The group also plans to conduct training on best practices for nutrient measurements in 2017 at the Royal Netherlands Institute for Sea Research (NIOZ).



WG 147 Meeting in Vienna

Ocean Sciences 2016

The biennial Ocean Science meetings have become an important venue for SCOR-supported projects to hold side meetings and to present their research results. The 2016 Ocean Sciences meeting will include many SCOR-related activities:

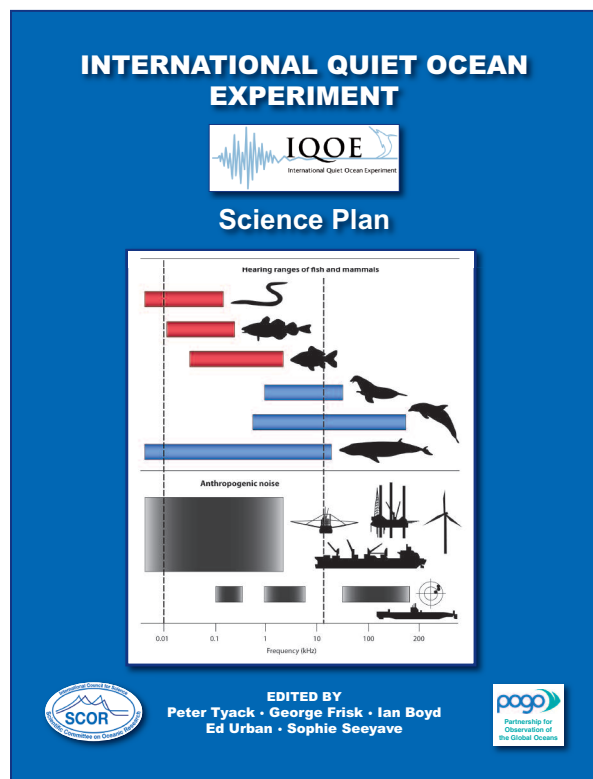
- The IMBER Scientific Steering Committee, and SCOR WGs 141, 142, and 145 will meet in conjunction with the Ocean Sciences meeting.
- SCOR-sponsored research projects have had many project-related sessions approved for the meeting
- GEOTRACES, the Second International Indian Ocean Expedition, and WGs 139/145 have submitted proposals for Town Hall sessions.

Large-Scale Ocean Projects

International Quiet Ocean Experiment (IQOE)—The IQOE Science Plan has been printed and released by SCOR and the

Partnership for Observation of the Global Ocean (POGO). The document is available in printed and electronic formats.

Tyack, P., G. Frisk, I. Boyd, E. Urban, and S. Seeyave (eds.). 2015. International Quiet Ocean Experiment Science Plan (see http://www.scor-int.org/IQOE/IQOE_Science_Plan-Final.pdf).



Editors and sponsors met in July in Woods Hole, Massachusetts (USA) to discuss implementation steps and formation of a Steering Committee for the project. An important initial task for the project will be to locate datasets on ambient sound in the ocean and determine how the data can be used to help meet project goals.

The Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)—The IMBER project is continuing work on its second phase Science Plan and is preparing for its fourth Imbizo Open Science Meeting, which will be held in Trieste, Italy on 26-30 October 2015 (see <http://www.imber.info/index.php/Meetings/IMBIZO/IMBIZO-IV>).

The Surface Ocean – Lower Atmosphere Study (SOLAS)—The 2015 SOLAS Open Science Conference (OSC) was held in Kiel, Germany on 7-11 September at the Christian-Albrechts-University of Kiel. The conference brought together more than 270 scientists from 35 countries to discuss progress made on SOLAS-related research since the previous OSC in 2012. The OSC included plenary talks, discussion sessions, and poster presentations. The SOLAS Scientific Steering Committee (SSC) meeting followed in Hamburg, Germany. The SOLAS SSC is completing its response to reviewers' comments for the SOLAS Phase II Science Plan.

GEOTRACES—The GEOTRACES Data Management Committee and Scientific Steering Committee were hosted in July by the Department of Earth, Ocean, and Atmospheric Sciences of the University of British Columbia.



GEOTRACES DMC and SSC at Locarno Beach, Vancouver, BC, Canada

Canada, Germany, and the United States conducted cruises in the Arctic Ocean this summer. The results of a 2013 GEOTRACES cruise were shown on the cover of *Nature* on 9 July 2015:

Resing, J., Sedwick, P.N., German, C.R., Jenkins, W.J., Moffett, J.W., Sohst, B.M., & Tagliabue, A. (2015). Basin-scale transport of hydrothermal dissolved metals across the South Pacific Ocean. *Nature*, 523(7559), 200–203. doi:10.1038/nature14577

GEOTRACES is beginning mid-term project synthesis activities with an open meeting at the Royal Society in London (<https://royalsociety.org/events/2015/12/ocean-chemistry/>) on 7-8 Dec. 2015 and a smaller meeting following at Chicheley Hall (<https://royalsociety.org/events/2015/12/trace-metal-cycling/>) on 9-10 Dec. GEOTRACES has released a timeline for data submission and quality control for the 2017 GEOTRACES Intermediate Data Product (<http://www.geotraces.org/dp/intermediate-data-product-2017>).

Workshop on Seafloor Ecosystem Functions and their Role in Global Process

Processes that occur at, immediately above, and just below the seafloor play an important role in global biogeochemical cycles, from coastal areas to the deep ocean. SCOR supported a workshop convened by several seafloor ecologists (Paul Snelgrove, Simon Thrush, and Alf Norkko) to consider seabed ecosystem functioning on a global scale. The workshop brought together the interdisciplinary expertise necessary to address this issue and identify priority research topics. Twelve experts in seabed biology, chemistry, and geology from North America, Europe, Asia and New Zealand met for 2.5 days, hosted by Roberto Danovaro at the historic Stazione Zoologica in Naples,

Italy. The group began to develop a set of priority research questions on the role of seafloor processes in ocean functioning. Discussions began with short presentations on modelling ecosystem functions (how to go about it), processes and key

functions, available data and gaps, scaling functions, approaches to generating large-scale metrics of biological activity, and model systems that have been well sampled. Workshop participants then discussed links between seabed processes, functions, and services and quickly zeroed in to ask how we can evaluate and predict seafloor ecosystem functions in the global ocean, to the extent that this assessment can inform debate on the consequences of environmental change. The group focused primarily on carbon cycling and nutrient regeneration, and the role that sedimentary organisms from microbes to megafauna play in those key

processes. Next, they considered how to build maps—or at least define testable functional relationships—that might allow extrapolation of a sparsely sampled seabed to regional and global scales. The goal of the workshop was to produce an article for a peer-reviewed journal that could form the basis for a more inclusive discussion by interested scientists, and the workshop places the group in an excellent position to achieve this goal.

Capacity Building

The 2016 Call for SCOR Visiting Scholars have been issued ([see http://scor-int.org/SCOR_Visiting_Scholars.pdf](http://scor-int.org/SCOR_Visiting_Scholars.pdf)). There is funding available to support three new SCOR Visiting Scholars to serve in any developing country in the world. However, SCOR is especially interested in receiving applications for service in countries of the Indian Ocean region, to support the Second International Indian Ocean Expedition (IIOE-2).

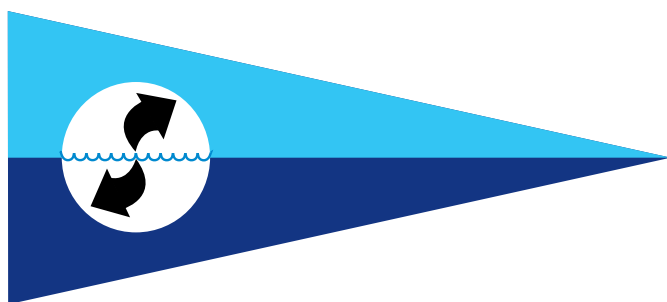
The 2nd African Discovery Camp for research-based Training on the Sustainable Use and Management of Marine Ecosystems was held at the Sam Nujoma Campus and Marine Research Center of the University of Namibia on 3 May-4 June 2015. The training included lecture and laboratory sessions at the Henties Bay Campus, ship-board experience on R/V *Mirabilis* owned by Namibia's Ministry of Fisheries & Marine Resources (NatMIRC) and research presentations at NatMIRC's headquarters in Swakopmund, Namibia. Instructors were from Chile, Namibia, Switzerland, and the United States. Trainees came from Brazil, Estonia, Germany, Italy, Namibia, Portugal, Switzerland, and the United States. This was the second of four annual training courses hosted by the University of Namibia and NatMIRC, and funded by the Agouron Institute and other sponsors. SCOR extends its thanks to the University of Namibia for hosting the Research Discovery Camps and to all those organizations that provided funding and in-kind support.



*Participants in
Second Research
Discovery Camp*

IIOE and IIOE-2

The International Indian Ocean Expedition (IIOE) used variations of its logo for a variety of purposes, including for reports, 100 brass stencils to label equipment boxes to ease customs clearance, and banners to fly from ships engaged in IIOE research. The IIOE banner was commissioned to be produced by the Tanaka Senyohin company of Tokyo, Japan. The August 1962 issue of the *IIOE Newsletter of Japan* gives the design parameters of the pennant, which looked something like this (the shades of blue are uncertain):



The banner was available in lengths of 154 and 220 cm. If anyone has a color photo of the original banner, please email it to Ed Urban in the SCOR Secretariat.

The Science Plan for the Second International Indian Ocean Expedition (IIOE-2) has been approved by SCOR and accepted by the Intergovernmental Oceanographic Commission (IOC). The plan is being formatted for printing. The IOC Interim Planning Committee is developing the IIOE-2 Implementation Plan. SCOR President Peter Burkill and Raleigh Hood (chair of the Science Plan Development Committee) are members of the Interim Planning Committee. The Implementation Plan will be completed by the launch of the IIOE-2 on 4 December 2015. The launch will include a formal ceremony in Goa, India, including the departure of the first IIOE-2 cruise, from Goa to Mauritius by the ORV *Sagar Nidhi*.

Publications

Klais, R., J.E. Cloern and P.J. Harrison. 2015. Global Patterns of Phytoplankton Dynamics in Coastal Ecosystems. *Estuarine, Coastal and Shelf Science* 162:1-160. Special issue from WG 137. See <http://www.sciencedirect.com/science/journal/02727714/162>.

Future SCOR Annual Meetings

2015—SCOR will hold its 2015 Executive Committee Meeting in Goa, India on 7-9 December.

2016—SCOR will hold its 2016 General Meeting in Sopot, Poland on 5-7 September 2016, at the Institute of Oceanology of the Polish Academy of Sciences.

The SCOR Executive Committee is accepting invitations from national SCOR committees to host the 2017 SCOR annual meeting.

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).

ACRONYMS

CRM	certified reference material
iCACGP	international Commission on Atmospheric Chemistry and Global Pollution
IGBP	International Geosphere-Biosphere Programme
IIOE	International Indian Ocean Expedition
IMBER	Integrated Marine Biogeochemistry and Ecosystem Research project (co-sponsored by SCOR and IGBP)
IOC	Intergovernmental Oceanographic Commission
IQOE	International Quiet Ocean Experiment
JAMSTEC	Japan Agency for Marine-Earth Science and Technology
POGO	Partnership for Observation of the Global Oceans
SCOR	Scientific Committee on Oceanic Research
SOLAS	Surface Ocean – Lower Atmosphere Study (Co-sponsored by SCOR, IGBP, WCRP, and iCACGP)
SOP	standard operating procedure
WCRP	World Climate Research Programme
WG	working group