December 2023 SCOR Newsletter # 52



News & Updates

I am pleased to say the SCOR 2023 Annual Meeting recently held from 14-16 October in Guayaquil, Ecuador was a success. The hybrid format allowed for participation from 98 attendees from 27 countries! All documents, reports and narrated presentations from the 2023 SCOR Annual Meeting can be found at the **SCOR website**.

As reported at the meeting, SCOR working groups and projects have been returning to in-person meetings, trainings, and collaborations, but are also taking advantage of virtual meetings to make progress on their objectives. Working groups have worked hard to catch up from delays imposed by COVID-19, with seven completing their work in 2023.

Mark your calendars for the 2024 SCOR Annual Meeting: 16-18 October 2024 in Qingdao, China with a public symposium on 15 October, in recognition of the 40th anniversary of the China-Beijing SCOR National Committee. See you there!



Participants of the 2023 SCOR Annual Meeting in front of the Guayas River, Guayaquil, Ecuador.



Visit to INOCAR (Oceanographic Institute of the Navy)





Presentations at the INOCAR-SCOR Symposium on Marine Sciences in Ecuador. Participants of the 2023 SCOR Annual Meeting at the venue, Wyndham Guayaquil.

Three new Working Groups were approved at the SCOR 2023 Annual Meeting

The three working groups are currently finalizing their terms of reference and membership with SCOR based on feedback from the reviews:

SCOR WG 168, Coordinating the Development of Gridded Four-Dimensional Data Products from Biogeochemical-Argo Observations (4D-BGC): The WG will enhance access and utility of BGC-Argo observations through 4D-BGC products, and thus refine our understanding of ocean biogeochemistry, improve models and reanalysis products, and inform policy decisions

SCOR WG 169, Global Library of Underwater Sounds (GLUBS): This WG will collate underwater sounds and develop practices and AI tools for categorizing sounds.

SCOR WG 170, Physiology and Rates in Microbial Oceanography (PRIMO): This WG will develop a community and framework for co-designing physiological metrics as currency converters to link 'omics datasets and BGC models. **Note this WG was proposed under the acronym NEMOO*

Each WG will have a page with more information on the SCOR website

News from the SCOR Secretariat

Now Accepting 2024 Visiting Scholar Applications

The SCOR Visiting Scholar program enlists the services of ocean scientists, from both developed countries and developing countries, to teach short courses and to provide more extended on-site education and mentorship at developing country institutions.

Submit an application by 29 December!

SCOR Travel Grants

SCOR has recently implemented quarterly deadlines for travel grant applications. The next deadline is upcoming on **31 December for review by the SCOR Capacity Development Committee in January.** Applications are accepted from <u>meeting organizers</u> to support early-career scientists from low- to medium-income countries to attend ocean science meetings, conferences, workshops, and trainings.

Travel Grant Website and Application

Recipients of the 2023 POGO-SCOR Fellowships

Congratulations to the five POGO-SCOR Fellows selected in 2023:

- Toufik Zeghloul (Algeria) to visit Leibniz Centre for Tropical Marine Research (Germany).
- Roma Varghese (India) to visit Japan Agency for Marine-Earth Science and Technology (Japan)
- **Tobias Sérvulo (Brazil)** to visit Laboratorie d'Oceanographie de Villefranche, Sorbonne University, (France)
- Kranthikumar Chanda (India) to visit CSIRO Environment (Australia)
- **Daniel Bernal (Colombia)** to visit Laboratoire d'Oceanographie et du Climat: Experimentations et Approches Numeriques Sorbonne University (France)

POGO-SCOR Fellowships are provided to support training in oceanographic observations for developing country scientists. Applications are due annually in May. More information can be found <u>here</u>.

SCOR History



Roger Revelle (USA), First SCOR President 1957-1960. (credit W. Wooster, 1971)



Paul Tchernia (France), SCOR Vice President 1976-1980, Luis Capurro (Argentina/USA), SCOR President 1964-1968, and Henry Charnock (UK), SCOR Secretary 1978-1980 and Vice President 1980-1982. (credit W. Wooster, 1974)

A photographic collection from Warren S. Wooster (USA), SCOR President from 1968 to 1973, was shared with SCOR by his daughter Susan Wooster Allen. The photos are now available on the SCOR website.

View photos from SCOR's history

News from the Working Groups and Projects

WG 167 RUSTED is now calling for manuscripts to contribute to its special issue on "Reducing the Uncertainty in aerosol Soluble Trace Element Deposition"

This is a Copernicus inter-journal special issue lead by the journal "Atmospheric Measurement and Techniques," but submissions are also welcome in "Atmospheric Chemistry and Physics," "Aerosol Research," and "Biogeosciences." More information can be found <u>here</u>.

The inaugural SOOS Symposium 2023 was concluded with a joint statement encouraging the expansion of Southern Ocean science

Read the statement here.

The Southern Ocean is a critical component of the global climate system. The Southern Ocean controls to a large extent the uptake of human generated heat and carbon into the ocean. Yet, we are currently observing critical changes in the Southern Ocean that are seen in the record low levels of sea-ice extent, record high temperatures and dramatic shifts in penguin populations, among other striking changes. The chronic lack of observations for the Southern Ocean challenges our ability to detect and assess the consequences of change. As such, it is more pressing than ever to have a sustained and coordinated Southern Ocean observing system to provide an understanding of current conditions, inform predictions of future states, and support policies and regulations for the benefit of society.

New Marine Sample Analysis Videos

A set of educational videos were produced as part of the GEOTRACES summer school 2022, organised by Walter Geibert and Claudia Hanfland, at the Alfred Wegener Institute (AWI, Germany) and supported by the Volkswagen Stiftung. The videos explain methods for trace element analysis of seawater samples used in the GEOTRACES programme. They have been developed with the aim of providing a useful

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resource for teachers and an attractive method for those willing to learn about trace metal sample analysis. Three videos are available:

- ICP-MS and ICP-OES for analysing marine samples.
- Calibrating and validating analysis of marine samples.
- Trace metal clean preparation of marine samples.

Read more and find links here.

Latest news from the projects at:

SCOR Research projects:

- Marine biogeochemical cycles of trace elements and their isotopes (GEOTRACES)
- Integrated Marine Biosphere Research (IMBeR)
- Surface Ocean Lower Atmosphere Studies (SOLAS)
- International Indian Ocean Expedition II (IIOE-2)
- International Quiet Ocean Experiment (IQOE)

SCOR Infrastructural projects:

- International Ocean Carbon Coordination Project (IOCCP)
- Global Harmful Algal Blooms (GlobalHAB)
- Southern Ocean Observing System (SOOS)
- Changing Ocean Biological Systems (COBS)
- Joint Committee on Seawater (JCS)

Publications



WG 161: Guo, H., Kriest, I., Oschlies, A., & Koeve, W. (2023). Can oxygen utilization rate be used to track the long-term changes of aerobic respiration in the mesopelagic Atlantic Ocean? *Geophysical Research Letters*, 50, e2022GL102645. <u>https://doi.org/10.1029/2022GL102645</u>.

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GlobalHAB: GlobalHAB. (2023). Fish-Killing Marine Algal Blooms: Causative Organisms, Ichthyotoxic Mecha-nisms, Impacts and Mitigation. (eds G.M. Hallegraeff, et al). Paris, UNESCO-IOC/SCOR, 96pp. (IOC Manuals and Guides, 93). <u>http://dx.doi.org/10.25607/OBP-1964</u>.

WG 140, SOLAS, SOOS: Henley, S. F., Cozzi, S., Fripiat, F., Lannuzel, D., Nomura, D., Thomas, D. N., Meiners, K. M., Vancoppenolle, M., Arrigo, K., Stefels, J., Leeuwe, M. van, Moreau, S., Jones, E. M., Fransson, A., Chierici, M., & Delille, B. (2023). Macronutrient biogeochemistry in Antarctic land-fast sea ice: Insights from a circumpolar data compilation. *Marine Chemistry*, 257, 104324. https://doi.org/10.1016/j.marchem.2023.104324.

WG 161: Herndl, G. J., Bayer, B., Baltar, F., & Reinthaler, T. (2023). Prokaryotic Life in the Deep Ocean's Water Column. *Annual Review of Marine Science*, *15*(1), 461–483. <u>https://doi.org/10.1146/annurev-marine-032122-115655</u>.

WG 150, WG 161: Iversen, M. H. (2023). Carbon Export in the Ocean: A Biologist's Perspective. *Annual Review of Marine Science* 15 (1): 357–81. <u>https://doi.org/10.1146/annurev-marine-032122-035153</u>.

GEOTRACES: Moriyasu, R., John, S. G., Bian, X., Yang, S.-C., & Moffett, J. W. (2023). Cu Exists Predominantly as Kinetically Inert Complexes Throughout the Interior of the Equatorial and North Pacific Ocean. *Global Biogeochemical Cycles*, 37. <u>https://doi.org/10.1029/2022GB007521</u>.

GEOTRACES: Moriyasu, R., Bolster, K. M., Hardisty, D. S., Kadko, D. C., Stephens, M. P., & Moffett, J. W. (2023). Meridional Survey of the Central Pacific Reveals Iodide Accumulation in Equatorial Surface Waters and Benthic Sources in the Abyssal Plain. *Global Biogeochemical Cycles*, 37. https://doi.org/10.1029/2021GB007300.

WG 161: Sulpis, O., Trossman, D. S., Holzer, M., Jeansson, E., Lauvset, S. K., & Middelburg, J. J. (2023). Respiration patterns in the dark ocean. *Global Biogeochemical Cycles*, 37, e2023GB007747. <u>https://doi.org/10.1029/2023GB007747</u>.

GEOTRACES: Tian, H.-A., van Manen, M., Bunnell, Z. B., Jung, J., Lee, S. H., Kim, T.-W., Reichart, G.-J., Conway, T. M., & Middag, R. (2023). Biogeochemistry of iron in coastal Antarctica: isotopic insights for external sources and biological uptake in the Amundsen Sea polynyas. *Geochimica et Cosmochimica Acta*. <u>https://doi.org/10.1016/j.gca.2023.10.029</u>.

WG 156: Tortell, P. D., Schuback, N. and Suggett, D.J. (eds) (2023) Application of Single Turnover Active Chlorophyll Fluorescence for Phytoplankton Productivity Measurements. Version 2.0, June, 26, 2023. Vancouver, Canada, University of British Columbia, Department of Earth, Ocean and Atmospheric Sciences for SCOR Working Group 156, 160pp. <u>http://dx.doi.org/10.25607/OBP-1914</u>.

GEOTRACES: Wang, W., Lough, A. J. M., Goring-Harford, H., Flanagan, O., González-Santana, D., Resing, J., Connelly, D., Lohan, M. C., Tagliabue, A., & James, R. H. (2023). Fractionation of iron and chromium isotopes in hydrothermal plumes from the northern Mid-Atlantic Ridge. *Earth and Planetary Science Letters*, 624, 118468. <u>https://doi.org/10.1016/j.epsl.2023.118468</u>

SOLAS mid-term special issue "Boundary Shift: The Air-Sea Interface in a Changing Climate"

SOLAS organized this special issue to assess the current state of air-sea exchange science, highlight critical future research directions, and identify emerging opportunities for new collaborations, technologies, and discoveries. Four of the 12 planned articles are now available.



For updates on SCOR activities, see our <u>Latest News</u> section Follow us on <u>X (Twitter)</u>

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