



PRESIDENT: Dr. Marie-Alexandrine Sicre
SECRETARY: Dr. Corina Brussaard
EXECUTIVE DIRECTOR: Dr. Edward R. Urban Jr.

Secretariat: College of Earth, Ocean, and
Environment
003 Robinson Hall
University of Delaware
Newark, DE 19716 USA

MEMORANDUM

TO: Attendees, 2018 SCOR Annual Meeting
FROM: Ed Urban, SCOR Executive Director
RE: Background Book for Meeting
DATE: 4 August 2018

I am pleased to enclose the background book for the upcoming SCOR Annual Meeting in Plymouth, UK. I hope that you have a chance to read it before the meeting, although I know that the time is limited and the background materials are extensive. Please be sure to review the annotated agenda following. I have tried to identify the actions that we need to consider at the meeting and have cross-referenced the agenda items to the pages where relevant background information can be found, so we can make the best use of our time together. Please skim the remainder of the book and focus on those sections that are most closely related to your interests and responsibilities. I hope that the book also will be a useful reference to you between SCOR meetings. The background book is also available on the Web, at http://scor-int.org/Annual%20Meetings/2018_SCOR_Meeting/2018_SCOR_Annual_Meeting.htm.

We will not be able to bring extra background books to the meeting, so please bring your copy if you requested one. Please let me know if you think other items should be made available to participants at the meeting.

I look forward to seeing each of you in Plymouth next month!

2018 SCOR ANNUAL MEETING

Plymouth, UK
4-7 September 2018

LIST OF PARTICIPANTS

(as of 1 August 2018)

SCOR Executive Committee:

President:

Marie-Alexandrine Sicre (NM)
CNRS, LOCEAN
Tour 46-00, 5eme étage
4 place Jussieu, 75252 Paris Cedex 05
FRANCE
Marie-Alexandrine.Sicre@locean-ipsl.upmc.fr

Secretary:

Corina Brussaard (NM)
NIOZ - Royal Netherlands Institute for Sea
Research
P.O. Box 59
Den Burg, Texel, 1797 BA
NETHERLANDS
corina.brussaard@nioz.nl

Past-President:

Peter Burkill (NM)
Drake Circus
Plymouth University
Plymouth PL4 8AA
UNITED KINGDOM
Email: peter.burkill@plymouth.ac.uk

Vice Presidents:

David Halpern (NM)
Jet Propulsion Laboratory
4600 Oak Grove Drive
MS 183-501
Pasadena, California 91109
USA
david.halpern@jpl.nasa.gov

Sergey Shapovalov (NM)

P.P. Shirshov Institute of Oceanology
36 Nakhimovskiy ave
Moscow, 117997
RUSSIA
smshap@ocean.ru

Song Sun (NM)

Institute of Oceanology
Chinese Academy of Sciences
7 Nanhai Road
Qingdao, 266071
PEOPLE'S REPUBLIC OF CHINA
sunsong@qdio.ac.cn

Ex-Officio Members:

Patricia Miloslavich (IABO)
Project Officer GOOS Biology &
Ecosystem Panel
Universidad Simon Bolivar / AIMS
PMB No. 3
Townsville, Queensland, 4810
AUSTRALIA
pmilos@usb.ve

Denise Smythe-Wright (IAPSO)

National Oceanography Centre
European Way
Southampton, Hampshire, SO14 3ZH
UNITED KINGDOM
dsw@noc.ac.uk

John Turner (IAMAS)
British Antarctic Survey
High Cross, Madingley Road
Cambridge, CB3 0ET
UNITED KINGDOM
jtu@bas.ac.uk

Co-opted Members

Colin Devey (NM)
Geomar
Wischhofstr. 1-3
Kiel, Schl.-H., 24148
GERMANY
cdevey@geomar.de

Nuria Casacuberta Arola
ETH Zurich
Otto-Stern-Weg, 5
HPK G23
Zurich 8093
SWITZERLAND
ncasacuberta@phys.ethz.ch

SCOR Secretariat:

Ed Urban
SCOR Secretariat
003 Robinson Hall
College of Earth, Ocean, and Environment
University of Delaware
Newark, DE 19716
USA
Email: ed.urban@scor-int.org

Other Participants:

Isabelle Ansoorge (NM)
Oceanography department
University of Cape Town
Cape Town 7701
SOUTH AFRICA
isabelle.ansorge@uct.ac.za

Ruby Asmah
CSIR Water Research Institute
P. O. Box AH 38
Accra GA-018-9651
GHANA
rubyasmah@yahoo.com

Harold (Hal) Batchelder
8624 Bourne Terrace
North Saanich, BC V8L 1M1
CANADA
hbatch@pices.int

Fiona Beckman
POGO
Plymouth Marine Laboratory
Plymouth PL1 3DH, Devon
UNITED KINGDOM
fbe@pml.ac.uk

Elisa Berdalet
Institute of Marine Sciences (CSIC)
Passeig Maratim de la Barceloneta, 37-49
Barcelona 8003
SPAIN
berdalet@icm.csic.es

Kimberley Bird
MBA of the UK
The Laboratory, Citadel Hill
Plymouth PL1 2PB
UNITED KINGDOM
kimbir@mba.ac.uk

Jo Byrne
36 Southland Park Road
Wembury, Plymouth PL9 0HG
UNITED KINGDOM
jbyrne@plymouth.ac.uk

John Claydon
IMBeR International Project Office
Institute of Marine Research
Bergen 5004
NORWAY
john.claydon@hi.no

Stephen de Mora
Plymouth Marine Laboratory
Prospect Place
Plymouth PL1 3DH
UNITED KINGDOM
sjdm@pml.ac.uk

Mary Feeley
126 High Street
Uppermill OL3 6BT, Greater Manchester
UNITED KINGDOM
maryfeeley@att.net

Virendra Goswami
F-82 Sector-41
Noida 201303
Uttar Pradesh
INDIA
vk_goswami1@rediffmail.com

Catherine Goyet (NM)
Universite de Perpignan
Via Domitia
IMAGES_ESPACE-DEV
Perpignan 66860
FRANCE
cgoyet@univ-perp.fr

Annalisa Griffa (NM)
CNR-ISMAR
Firte S.Teresa
Pozzuolo Lericci 19032, La Spezia
ITALY
annalisa.griffa@sp.ismar.cnr.it

Jason Hall-Spencer
60 Ladysmith Rd
Plymouth PL4 7NL
UNITED KINGDOM
jhall-spencer@plymouth.ac.uk

Gideon Henderson (NM)
Dept. of Earth Sciences
University of Oxford
Oxford OX13AN
UNITED KINGDOM
gideonh@earth.ox.ac.uk

Chan Joo Jang (NM)
385 Haeyang-ro
Youngdo-gu, Busan 49111 Gyeonggi-do
SOUTH KOREA
cjjang@kiost.ac.kr

David Johns
The Laboratory, Citadel Hill
Plymouth PL1 2PB
UNITED KINGDOM
djoh@mba.ac.uk

Jorma Kuparinen (NM)
Harbonkatu 6 G
Helsinki 980
FINLAND
jorma.kuparinen@helsinki.fi

Victor Martinez-Vicente
Plymouth Marine Laboratory
Plymouth PL1 3DH
UNITED KINGDOM
vmv@pml.ac.uk

Lisa Miller
Institute of Ocean Sciences
CP 6000
Sidney V8L 4B2
CANADA
lisa.miller@dfo-mpo.gc.ca

Archil Morchilladze
Kazbegi Ave. 24
Tbilisi 160
GEORGIA
morchiladze@igg.ge

Paul Myers (NM)
Department of Earth and Atmospheric
Sciences
1-26 ESB, University of Alberta
Edmonton, Alberta T6G 2E3
CANADA
pmyers@ualberta.ca

Louise Tecle Ngo Mboui

5 rue du roi
Versailles 78000
FRANCE
lebeaupehmhathina@hotmail.com

Lebeau Pemha Thina

06, Rue Ambroise Croizat
Saint Denis 93200
FRANCE
partenariats-emergences@hotmail.com

Daniel Phillips

Plymouth Marine Laboratory
Prospect Place
Plymouth PL1 3DH
UNITED KINGDOM
dph@pml.ac.uk

Trevor Platt

Plymouth Marine Laboratory
Prospect Place
Plymouth PL1 3DH
UNITED KINGDOM
treatt@pml.ac.uk

Marie-Fanny Racault

Plymouth Marine Laboratory
Prospect Place
Plymouth PL1 3DH
UNITED KINGDOM
mfrrt@pml.ac.uk

Shubha Sathyendranath

Plymouth Marine Laboratory
Prospect Place
Plymouth PL1 3DH
UNITED KINGDOM
ssat@pml.ac.uk

Sophie Seeyave

Plymouth Marine Laboratory
Prospect Place
Plymouth PL1 3DH
UNITED KINGDOM
ssve@pml.ac.uk

Stefan Simis

Prospect Place, The Hoe
Plymouth PL1 3DH
UNITED KINGDOM
stsi@pml.ac.uk

Xiaoxia Sun

No. 7 Nanhai Road
Qingdao 266071 Shandong
CHINA
xsun@qdio.ac.cn

Kamil Szafranski

InterRidge IPO
15, rue Lamande
Paris 75017
FRANCE
szafranski@ipgp.fr

Gavin Tilstone

Plymouth Marine Lab
West Hoe
Plymouth PL13DH
UNITED KINGDOM
ghti@pml.ac.uk

Robert Upstill-Goddard

School of Natural and Environmental
Sciences
Ridley Building
Newcastle-upon-Tyne NE47 9BL
UNITED KINGDOM
rob.goddard@ncl.ac.uk

Willie Wilson

The MBA
The Laboratory, Citadel Hill
Plymouth PL1 2PB
UNITED KINGDOM
wilwil@mba.ac.uk

Charel Wohl

37 Cecil Avenue
Plymouth PL4 8SG
UNITED KINGDOM
charel.wohl@gmail.com

Malcolm Woodward
Prospect Place, The Hoe
Plymouth PL1 3DH
UNITED KINGDOM
m.woodward@pml.ac.uk

Toshio Yamagata (NM)
3173-25 Showa-machi, Kanazawa-ku
Yokohama 236-0001, Kanagawa
JAPAN
yamagata@jamstec.go.jp

Sinjaee Yoo (NM)
2670, Iljudongro
Gujwa-eup, Jeju 63349
SOUTH KOREA
sjyoo@kiost.ac.kr

Jing Zhang (NM)
Graduate School of Science and Engineering
University of Toyama
Toyama 9308555
JAPAN
jzhang@sci.u-toyama.ac.jp

NM = Nominated Member

Agenda for 2018 SCOR Annual Meeting in Plymouth, UK

	Mon., Sept. 3	Tues., Sept. 4	Wed., Sept. 5	Thurs., Sept. 6	Fri., Sept 7.	
9:00		Welcome, Logistics, and Introductions	WG Proposals – Feedback to Proponents	GlobalHAB JCS SCOR Capacity Building Activities		
9:15		President's Report				SOOS
9:30		Executive Director's Report		Tour of Plymouth University Coast facility		
9:45		Results of 2018 SCOR Elections and Vote on SCOR Constitution				BREAK
10:00		Current WGs	GEOTRACES SOLAS IQOE	IOC PICES WCRP SCAR	Coach to Citadel Hill for tour of MBA	
10:15						United Nations Decade of Ocean Science
10:30		LUNCH	LUNCH	LUNCH	Lunch in Common Room	
10:45						WG Proposals – Develop Short List and Select Proposals
11:00		BREAK	BREAK	BREAK		
11:15					Welcome desk and tea at Marine Station	WG Proposals – Develop Short List and Select Proposals
11:30		SCOR Executive Committee Meets in Closed Session	BREAK	BREAK		
11:45					Icebreaker BBO at Marine Station	Tours of old Plymouth start from Marine Station
12:00		LUNCH	LUNCH	LUNCH		
12:15	WG Proposals – Develop Short List and Select Proposals				Tea and drinks at poster session by young Plymouth scientists	2019 SCOR Meeting Close of Meeting
12:30		BREAK	BREAK	BREAK		
12:45	Welcome desk and tea at Marine Station				WG Proposals – Develop Short List and Select Proposals	Tea and drinks at poster session by young Plymouth scientists
13:00		Icebreaker BBO at Marine Station	Tours of old Plymouth start from Marine Station	SCOR Executive Committee Meets in Closed Session		
13:15	LUNCH				LUNCH	LUNCH
13:30		WG Proposals – Develop Short List and Select Proposals	Talks by G. Henderson, R. Thompson, S. de Mora, W. Wilson	POGO		
13:45	BREAK				BREAK	BREAK
14:00		Welcome desk and tea at Marine Station	WG Proposals – Develop Short List and Select Proposals	Tea and drinks at poster session by young Plymouth scientists		
14:15	Icebreaker BBO at Marine Station				Tours of old Plymouth start from Marine Station	SCOR Executive Committee Meets in Closed Session
14:30		LUNCH	LUNCH	LUNCH		
14:45	WG Proposals – Develop Short List and Select Proposals				Talks by G. Henderson, R. Thompson, S. de Mora, W. Wilson	POGO
15:00		BREAK	BREAK	BREAK		
15:15	Welcome desk and tea at Marine Station				WG Proposals – Develop Short List and Select Proposals	Tea and drinks at poster session by young Plymouth scientists
15:30		Icebreaker BBO at Marine Station	Tours of old Plymouth start from Marine Station	SCOR Executive Committee Meets in Closed Session		
15:45	LUNCH				LUNCH	LUNCH
16:00		WG Proposals – Develop Short List and Select Proposals	Talks by G. Henderson, R. Thompson, S. de Mora, W. Wilson	POGO		
16:15	BREAK				BREAK	BREAK
16:30		Welcome desk and tea at Marine Station	WG Proposals – Develop Short List and Select Proposals	Tea and drinks at poster session by young Plymouth scientists		
16:45	Icebreaker BBO at Marine Station				Tours of old Plymouth start from Marine Station	SCOR Executive Committee Meets in Closed Session
17:00		LUNCH	LUNCH	LUNCH		
17:15	WG Proposals – Develop Short List and Select Proposals				Talks by G. Henderson, R. Thompson, S. de Mora, W. Wilson	POGO
17:30		BREAK	BREAK	BREAK		
17:45	Welcome desk and tea at Marine Station				WG Proposals – Develop Short List and Select Proposals	Tea and drinks at poster session by young Plymouth scientists
18:00		Icebreaker BBO at Marine Station	Tours of old Plymouth start from Marine Station	SCOR Executive Committee Meets in Closed Session		
18:15	LUNCH				LUNCH	LUNCH
18:30		WG Proposals – Develop Short List and Select Proposals	Talks by G. Henderson, R. Thompson, S. de Mora, W. Wilson	POGO		
18:45	BREAK				BREAK	BREAK
19:00		Welcome desk and tea at Marine Station	WG Proposals – Develop Short List and Select Proposals	Tea and drinks at poster session by young Plymouth scientists		
	Icebreaker BBO at Marine Station				Tours of old Plymouth start from Marine Station	SCOR Executive Committee Meets in Closed Session

2018 SCOR ANNUAL MEETING

Plymouth, UK
4-7 September 2018

ANNOTATED AGENDA

1.0 OPENING

1.1 Opening Remarks and Administrative Arrangements, p 1-1

Thompson, Sicre, Urban

1.2 Approval of the Agenda, p. 1-11

Sicre

Additions or modifications to the agenda as distributed may be suggested prior to approval of the final version.

1.3 Report of the President of SCOR, p. 1-11

Sicre

The President will briefly review her activities for SCOR since the SCOR Annual Meeting in September 2017 in Cape Town, South Africa.

1.4 Report of SCOR Executive Director, p. 1-11

Urban

The Executive Director will report on his activities for SCOR since the 2017 SCOR Annual meeting, and on the current condition of SCOR.

1.5 Appointment of an *ad hoc* Finance Committee, p. 1-14

Sicre

The SCOR Constitution requires that a Finance Committee be appointed at every SCOR meeting. It must consist of at least three members of SCOR who are not members of the Executive Committee. The Finance Committee reviews the administration of SCOR finances during the previous fiscal year and the current year, and will propose a budget for 2019 activities and dues for 2020. Members of the 2018 Finance Committee approved by the Executive Committee are Isabelle Ansoorge (South Africa), Annalisa Griffa (Italy), Paul Myers (Canada), and Toshio Yamagata (Japan). The Committee will report to the meeting under agenda item **8.3**.

1.6 2018 Elections for SCOR Officers and Approval of Proposed Changes to SCOR Constitution, p. 1-14

Burkill

The SCOR Secretary and all three Vice-President positions were open for nominations for the 2018 elections. Proposed changes to the SCOR Constitution were disseminated to national SCOR Committees.

Action: Announce new SCOR officers and vote on proposed changes to SCOR Constitution.

2.0 WORKING GROUPS

2.1 Current Working Groups

The Executive Committee Reporter for each working group (or a member of the group) will present an update on working group activities and progress, and will make recommendations on actions to be taken.

2.1.1 SCOR/InterRidge WG 135 on Hydrothermal energy transfer and its impact on the ocean carbon cycles, p. 2-1 *Smythe-Wright*

WG 135 has submitted the final report. The primary activity of the group for the last several years has been the preparation of a second peer-reviewed paper, which has now been submitted to *Frontiers in Marine Sciences*.

Action: Consider disbanding group

2.1.2 SCOR/IGBP WG 138: Modern Planktic Foraminifera and Ocean Changes, p. 2-7 *Brussaard*

No annual report was received from WG 138 by the time the background papers were printed.

Action: Consider disbanding the group.

2.1.3 WG 139: Organic Ligands – A Key Control on Trace Metal Biogeochemistry in the Ocean, p. 2-8 *Devey*

No annual report was received from WG 139 by the time the background papers were printed.

Action: Consider disbanding group

2.1.4 WG 141 on Sea-Surface Microlayers, p. 2-10 *Burkill*

No annual report was received from WG 141 by the time the background papers were printed.

Action: Consider disbanding group

2.1.5 WG 142 on Quality Control Procedures for Oxygen and Other Biogeochemical Sensors on Floats and Gliders, p. 2-14 *Burkill*

No annual report was received from WG 142 by the time the background papers were printed.

Action: Consider disbanding group

2.1.6 WG 143 on Dissolved N₂O and CH₄ measurements: Working towards a global network of ocean time series measurements of N₂O and CH₄, p. 2-15 *Turner*

This group held its final meeting in conjunction with the Ocean Sciences meeting in Portland, Oregon, USA in Feb. 2018. They submitted an article on “A global inter-comparison of oceanic methane and nitrous oxide measurements” to the journal *Biogeosciences* in June 2018 (see <https://www.biogeosciences-discuss.net/bg-2018-274/>). Group members are leading a workshop on methane and nitrous in October 2018 at Lake Arrowhead, California, USA, funded by the U.S. Ocean Carbon and Biogeochemistry (OCB) program. The group is participating in preparation of a white paper for OceanObs’19. The group has requested to extend its term until the 2019 SCOR annual meeting to complete activities underway.

Action: Consider no-cost extension to keep the group open until the 2019 SCOR annual meeting

2.1.7 WG 144 on Microbial Community Responses to Ocean Deoxygenation, p. 2-19 *Miloslavich*

The group's major product, a special issue of the journal *Deep-Sea Research II*, is nearing completion and the group has asked to be disbanded.

Action: Consider disbanding group

2.1.8 WG 145 on Chemical Speciation Modelling in Seawater to Meet 21st Century Needs (MARCHEMSPEC), p. 2-22 *Sicre*

Members of the group received a three-year grant from the U.S. National Science Foundation and the UK Natural Environment Research Council to conduct research related to the group's work. The group has also enlisted the help of several national laboratories in its work. The group would like to postpone its next meeting until after the research is completed; they will have a special session, Town Hall, and/or tutorial at the 2020 Ocean Sciences Meeting.

Action: Consider their request to delay next meeting until 2020 Ocean Sciences Meeting

2.1.9 WG 146 on Radioactivity in the Ocean, 5 decades later (RiO5), p. 2-27 *Smythe-Wright*

The group has completed its work in three areas related to its terms of reference. It has (1) published a major review article,¹ (2) held several training workshops and created a series of four *Limnology and Oceanography* eLectures, and (3) has created a [cookbook of methods](#).

Action: Consider disbanding group.

2.1.10 WG 147: Towards comparability of global oceanic nutrient data (COMPONUT), p. 2-30 *Sicre*

The group held its third meeting in February 2018 in conjunction with the 2018 Ocean Sciences Meeting in Portland, Oregon. Their work continues on the nutrient analysis portion of the GO-SHIP manual and on international nutrient intercalibration exercises.

Action: Consider funding for 2019 meeting

2.1.11 WG 148 on International Quality Controlled Ocean Database: Subsurface temperature profiles (IQuOD), p. 2-36 *Shapovalov*

No annual report was received from WG 148 by the time the background papers were printed.

Action: Consider funding for 2019 WG meeting.

2.1.12 WG 149 on Changing Ocean Biological Systems (COBS): how will biota respond to a changing ocean?, p. 2-37 *Miloslavich*

No annual report was received from WG 149 by the time the background papers were printed.

Action: Consider funding for 2019 WG meeting.

2.1.13 WG 150 on Translation of Optical Measurements into particle Content, Aggregation & Transfer (TOMCAT), p. 2-38 *Burkill*

WG 150 met in conjunction with the 2018 Ocean Sciences Meeting. They have open a Research Focus topic in *Frontiers in Marine Science* (see <https://www.frontiersin.org/research->

¹Buesseler, K., M.H. Dai, M. Aoyama, C. Benitez-Nelson, S. Charmasson, K. Higley, V. Maderich, P. Masqué, D. Oughton and J. N. Smith. 2016. Fukushima Daiichi-Derived Radionuclides in the Ocean: Transport, Fate, and Impacts. *Annual Review of Marine Science* 9:1-31.

[topics/7817/we-shed-light-optical-insights-into-the-biological-carbon-pump#overview](https://doi.org/10.1002/lob.10243)); The anticipated submission deadline is the 19 April 2019. Members of TOMCAT are actively involved in shaping a Community White Paper on Observational Needs as part of OceanObs'19. The next meeting of the group is planned for early 2019.

Action: Consider funding for 2019 WG meeting.

2.1.14 WG 151: Iron Model Intercomparison Project (FeMIP), p. 2-43 *Devey*

WG 151 held its first meeting in February 2018, in conjunction with the Ocean Sciences Meeting in Portland, Oregon. The WG has formed three subgroups, on (1) external input, (2) biological cycling (incl. uptake and regeneration), and (3) speciation/scavenging (including ligand aspects). A review article is being planned to recommend how to include these factors for iron in ocean models. The group is compiling information on created software routines to assess skill metrics.

Action: Consider funding for 2019 WG meeting.

2.1.15 WG 152 on Measuring Essential Climate Variables in Sea Ice (ECV-Ice), p. 2-46

Turner

The group held an intercalibration exercise in March 2018. It has submitted one article, to *Polar Biology*, on the intercalibration, and has two additional publications in preparation. The group has created a Website in the past year: <https://sites.google.com/view/ecv-ice/>. The group met in conjunction with the June 2018 POLAR2018 meeting in Davos, Switzerland.

Action: Consider funding for 2019 WG meeting.

2.1.16 WG 153 on Floating Litter and its Oceanic Transport Analysis and Modelling (FLOTSAM), p. 2-51

Smythe-Wright

This group met for the first time in April 2018 in conjunction with another meeting on marine litter. They have established a Website for the group (<http://scor-flotsam.it>). The group is preparing several publications, including participating in a white paper on marine litter for OceanObs'19, to be published in *Frontiers in Marine Science*. The group is planning to meet next in Utrecht, The Netherlands in Spring 2019.

Action: Consider funding for 2019 WG meeting.

2.1.17 WG 154 on Integration of Plankton-Observing Sensor Systems to Existing Global Sampling Programs (P-OBS), p. 2-57

Miloslavich

The group met for the first time in conjunction with the Ocean Sciences Meeting in Portland, Oregon in February 2018. It published an article about the group in *Limnology and Oceanography Bulletin*.² A subgroup of the group will meet in Villefranche-sur-Mer, France, in November 2018 to finalize a draft section for the GO-SHIP Manual, summarizing existing technology that could be incorporated into GO-SHIP cruises to measure plankton-relevant parameters, the relevant best-practice documents, associated costs and effort, and to organize its 2nd in-person meeting, possibly in conjunction with Ocean Obs'19.

Action: Consider funding for 2019 WG meeting.

²Boss, E., A. Waite, F. Muller-Karger, H. Yamazaki, R. Wannikof, J. Uitz, S. Thomalla, H. Sosik, B. Sloyan, A. Richardson, P. Miloslavich, J. Karstensen, G. Gregori, K. Fennel, H. Claustre, M. Cornejo, I. Berman-Frank, S. Batten, S. Acinas, 2018. Beyond Chlorophyll Fluorescence: The Time is Right to Expand Biological Measurements in Ocean Observing Programs. Community news, *Limnology and Oceanography Bulletin*, <https://doi.org/10.1002/lob.10243>

2.1.18 WG 155 on Eastern boundary upwelling systems (EBUS): diversity, coupled dynamics and sensitivity to climate change, p. 2-60 *Halpern*

The group met for the first time in June 2018, in conjunction with the 4th International Symposium on the Effects of Climate Change on the World's Oceans (ECCWO) in Washington, D.C. As a result of the June 2018 meeting, the group is working on a review paper about Knowledge of EBUS systems, a second paper on EBUS models, ideas for a summer school and open science meeting, a data portal, and a data and monitoring needs report,

Action: Consider funding for 2019 WG meeting.

2.2 Working Group Proposals

2.2.1 Active Chlorophyll fluorescence for autonomous measurements of global marine primary productivity, p. 2-63 *Smythe-Wright*

Action: Consider as new SCOR working group.

2.2.2 The Surface Ocean CO₂ Mapping intercomparison initiative: Phase 2 (SOCOMv2), p. 2-81 *Smythe-Wright*

Action: Consider as new SCOR working group.

2.2.3 Ocean Governance and Policy Analysis for Ocean Deoxygenation (WG-OGOD), p. 2-99 *Shapovalov*

Action: Consider as new SCOR working group.

2.2.4 Carbonate system intercomparison forum (CSIF) p. 2-116 *Burkill*

Action: Consider as new SCOR working group.

2.2.5 Toward a new global view of marine zooplankton biodiversity based on DNA metabarcoding and reference DNA sequence databases (MetaZooGene), p. 2-132 *Miloslavich*

Action: Consider as new SCOR working group.

2.2.6 The Caribbean Upwelling Research Network (CURNet), p. 2-147 *Halpern*

Action: Consider as new SCOR working group.

2.2.7 A Framework for Ocean Observation for the Next Generation - expanding quantifiable methods and Best Practices (FOO-BP), p. 2-162 *Burkill*

Action: Consider as new SCOR working group.

2.2.8 Coordinated Global Research Assessment of Seagrass Systems (C-GRASS), p. 2-176 *Sun*

Action: Consider as new SCOR working group.

2.2.9 Co-ordinated approach for Aerosol Trace element Solubility and Bioavailability Research in Oceanography (CoATS-BRO), p. 2-193 *Casacuberta Arola*

Action: Consider as new SCOR working group.

3.0 LARGE-SCALE SCIENTIFIC PROGRAMS

SCOR currently sponsors five large-scale research projects; four of them are co-sponsored by other organizations. Each project has its own scientific steering committee (SSC) to manage the project. SCOR and other co-sponsors are responsible to oversee the projects, which they do primarily through responsibility for the project SSC memberships and terms of reference, although sponsors also oversee the results of the projects' activities. Any proposed changes in membership or terms of reference are considered by the SCOR Executive Committee, in partnership with other co-sponsors, throughout the year. The SCOR Secretariat oversees the use of grant funds provided to the projects through SCOR. SCOR uses solely grant funds for IMBER, SOLAS, and GEOTRACES, but is providing SCOR support for IQOE and IIOE-2 until they are self-supporting.

3.1 GEOTRACES, p. 3-1

Henderson, Devey

GEOTRACES released its 2017 Intermediate Data Product (IDP) just before the 2017 SCOR Annual Meeting and its next IDP is planned for 2021. GEOTRACES is convening a [joint workshop with PAGES](#) in December 2018 on the implications of GEOTRACES observations for paleoceanography, one of GEOTRACES's three main themes. The GEOTRACES SSC met in Taipei on 23-25 July 2018 and will meet next on 9-11 September 2019 in Hobart, Tasmania, Australia. SCOR has begun the mid-term review process for GEOTRACES.

Action: None. GEOTRACES support is provided by specific funding from an NSF grant to SCOR.

3.2 Surface Ocean – Lower Atmosphere Study (SOLAS), p. 3-33

Miller, Turner

SOLAS activities since the 2017 SCOR meeting have included the SOLAS SSC Meeting, held in May 2018 in Victoria, BC, Canada and the SOLAS Summer School, held on 23 July-4 August 2018 in Corsica, France. In the coming year, SOLAS is planning workshops on [SOLAS Core Themes 4 and 5](#) (Theme 4: Interconnections between aerosols, clouds, and marine ecosystems and Theme 5: Ocean biogeochemical control on atmospheric chemistry) in November 2018 in Rome, Italy; and the [2019 SOLAS Open Science Conference](#) in April 2019 in Sapporo, Japan.

Action: None. SOLAS funding is provided by specific funding from NSF and NASA grants to SCOR.

3.3 SCOR/POGO International Quiet Ocean Experiment (IQOE), p. 3-49

Urban, Shapovalov

IQOE is still ramping up its activities, through its working groups. IQOE submitted an abstract on passive acoustics for OceanObs'19, which will be combined with abstracts on active acoustics to create a white paper. The IQOE Science Committee will meet in conjunction with OceanObs'19 in September 2019. IQOE is supported primarily by the Urban Coast Institute (Monmouth University, New Jersey USA) and the Program for the Human Environment (The Rockefeller University, New York USA), with supplemental support from SCOR.

Action: Consider 2019 support from SCOR to IQOE.

**3.4 SCOR/IOC/IOGOOS Second International Indian Ocean Expedition (IIOE-2),
p. 3-53 *Burkill***

SCOR has helped support the first two annual meeting of the IIOE-2 Steering Committee and will support a meeting of the IIOE-2 WG on Science and Research, to be held in Kiel, Germany at the end of November 2018.

Action: Consider 2019 support from SCOR to IIOE-2.

**3.5 SCOR/Future Earth Integrated Marine Biosphere Research, p. 3-55
*Claydon, Burkill***

The IMBeR Scientific Steering Committee met most recently in Hobart, Tasmania, Australia in April 2018. The 6th IMBeR ClimeCO summer school took place on 1-8 August 2018 and the 2nd IMBeR Open Science Conference will take place on 23-27 June 2019. A new IMBeR Executive Officer, John Claydon, began his service in June 2018. IMBeR has issued a request for bids for moving its International Project Office in March 2020.

Action: None. IMBeR support is provided by specific funding from NSF and NASA grants to SCOR.

4.0 INFRASTRUCTURAL ACTIVITIES

**4.1 IOC/SCOR International Ocean Carbon Coordination Project, p. 4-1
*Telszewski, Halpern***

IOCCP is currently being reviewed by SCOR and IOC for the first time. IOCCP is leading an effort to re-evaluate international coordination for ocean carbon observations and research, which will involve SOLAS, IMBeR, and other projects.

Actions: None. IOCCP funding is provided by specific funding from an NSF grant to SCOR.

4.2 GlobalHAB, p. 4-35 *Berdalet, Sun*

The GlobalHAB SSC met in Villefrance-sur-Mer, France in March 2018 to continue implementing its science plan. The funding for GlobalHAB from NSF has been terminated, so the project is seeking new sources of funding.

Action: Suggest new sources of funding for GlobalHAB.

4.3 IAPWS/SCOR/IAPSO Joint Committee on Seawater (JCS), p. 4-51 *Smythe-Wright*

This group was formed to continue the work of SCOR/IAPSO WG 127 on Thermodynamics and Equation of State of Seawater. Normally, SCOR support is used for opportunistic meetings of group members, but SCOR and IAPSO provided funding in 2018 for the entire group to meet during the same week as the annual SCOR meeting in September 2018, in the Czech Republic.

Action: Consider funding for 2019.

4.4 Workshop on Seafloor Ecosystem Functions and their Role in Global Processes, p. 4-53

Urban

This activity has been completed, by publication of an article from the workshop in the journal *Trends in Ecology and Evolution*.³

Action: None

4.5 SCAR/SCOR Southern Ocean Observing System (SOOS), p. 4-64

Newman, Miloslavich

SOOS has implemented Regional working groups—for Southern Ocean Indian Sector, West Antarctic Peninsula, and Ross Sea—and Capability working groups for Censusing Animal Populations from Space, Southern Ocean Fluxes (SOFLUX), Benchmarking, and Observing and Understanding the Ocean below Antarctic Sea Ice and Ice Shelves. The SOOS SSC met in Hangzhou, China in May 2018 and held a variety of opportunistic meetings at POLAR2018 in June 2018 in Davos, Switzerland

Action: Consider 2019 funding for SOOS.

5.0 CAPACITY-BUILDING ACTIVITIES

5.1 SCOR Committee on Capacity Building, p. 5-1

Feeley

The Committee worked by email this year, evaluating two sets of requests for travel support for ocean science meetings and applications for the SCOR Visiting Scholars Program. SCOR support made it possible for representatives of the Committee to attend the launch of the Namibian SCOR Committee in March 2018 and the annual SCOR meeting.

Action: Consider funding for 2019 activities of the committee.

5.2 SCOR Visiting Scholars, p. 5-1

Feeley

Seven SCOR Visiting Scholars were approved this year, to work in Bangladesh, Brazil, Croatia Ecuador, Indonesia, Morocco and Mozambique. The amount of crowdfunding increased from last year and the number of qualified applicants approved is still below the number that could have been approved if more funding were available. Ed Urban and Sophie Seeyave (POGO Executive Director) are working on a publication describing the SCOR Visiting Scholars program and POGO Visiting Professors program.

Action: Funding for this activity is provided from a variety of sources. Identify sources of funding for the program from other countries to expand the program.

5.3 POGO-SCOR Visiting Fellowships for Oceanographic Observations, p. 5-5

Urban

Four Fellows were funded in 2018, selected by reviewers from SCOR and POGO. SCOR and POGO have been cooperatively funding this program since 2001.

³Snelgrove, P.V.R., K. Soetaert, M. Solan, S. Thrush, C.-L. Wei, R. Danovaro, R.W. Fulweiler, H. Kitazato, B. Ingole, A. Norkko, R.J. Parkes, and N. Volkenborn. 2018. Global Carbon Cycling on a Heterogeneous Seafloor. *Trends in Ecology and Evolution* 33(2):96-105. DOI: <http://dx.doi.org/10.1016/j.tree.2017.11.004>.

Actions: None. Funding for this activity is provided by an NSF grant to SCOR.

5.4 NSF Travel Support for Developing Country Scientists, p. 5-14 *Urban*

Funding from the U.S. National Science Foundation made it possible to provide support in the amount of \$61,462 since the 2017 SCOR meeting for participation of students and early-career scientists in ocean science meetings. The second year of funding in the current grant was awarded by NSF on 31 July 2018.

Action: None. Funding for this activity is provided by an NSF grant to SCOR.

5.5 Research Discovery Camps at the University of Namibia, p. 5-16 *Urban*

The 5th Research Discovery Camp was held at the University of Namibia and National Marine Information and Research Centre (NatMIRC). Some of the funding this year was devoted to training activities for local teachers in Swakopmund, Namibia. Funding is available for at least three additional annual Research Discovery Camps.

Action: None. Funding for this activity is provided by grants from the Agouron Institute and Simons Foundation to SCOR.

6.0 RELATIONS WITH INTERGOVERNMENTAL ORGANIZATIONS

6.1 Intergovernmental Oceanographic Commission (IOC), p. 6-1 *Sicre, Arico*

Marie-Alexandrine Sicre and Ed Urban attended the IOC Executive Council meeting in July to represent SCOR. At that meeting, SCOR expressing support for the UN Decade of Ocean Science for Sustainable Development. SCOR and IOC co-fund several activities: IIOE-2 (see item 3.5), IOCCP (see item 4.1), and GlobalHAB (see item 4.2). IOC also provided full support for one SCOR Visiting Scholar in 2017.

Actions: None

6.2 Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), p. 6-1 *Urban*

GESAMP WG 38 convened two concurrent workshops in Norwich, UK on 27 February to 2 March 2017. Workshop participants are still working on publications from the workshop, although one peer-reviewed paper has already been published.⁴ The goal of WG 38 for the next year is to complete the submission and publication of all papers resulting from the 2017 workshop at the University of East Anglia. There is a small amount of funding left in the NSF grant for this activity for presentation of results at scientific meetings.

Action: None. Funding for this activity is provided by an NSF grant to SCOR.

⁴Kim, J.-M., K. Lee, Y.-S. Suh, and I.-S. Han. 2018. Phytoplankton do not produce carbon-rich organic matter in high CO₂ oceans. *Geophysical Research Letters* 45:4189-4197.

6.3 North Pacific Marine Science Organization (PICES), p. 6-7 *Sun*

PICES and SCOR have been cooperating since PICES was created. PICES has been helpful in regionalizing several international SCOR projects. SCOR and PICES have provided capacity building support for each other's activities, and have cooperated more broadly in capacity building. Hal Batchelder serves as a liaison to the SCOR Committee on Capacity Building.

Actions: Determine whether SCOR will be represented at the 2018 PICES annual meeting on 25 Oct.-4 Nov. in Yokohama, Japan.

7.0 RELATIONS WITH NON-GOVERNMENTAL ORGANIZATIONS

7.1 International Council for Science *Sicre*

The International Council for Science and International Social Science Council were merged this year to form the International Science Council (ISC). Marie-Alexandrine Sicre and Ed Urban attended the launch of the ISC in Paris in July 2018.

The SCOR Executive Committee and Executive Director continue to work on actions to respond to the ICSU review of SCOR. Potential changes to the SCOR Constitution will be voted on at this meeting. A new SCOR Website will be launched at the SCOR meeting. A survey to SCOR partners is being prepared to clarify SCOR's "partnership landscape". Two new national SCOR committees—in Ireland and Namibia—have been established since the time of the ICSU region. Reviews have been initiated of IOCCP and GEOTRACES. SCOR added an early-career scientist to the SCOR Executive Committee in 2018.

Actions: Discuss SCOR actions to respond to ICSU review.

7.1.1 World Climate Research Programme (WCRP), p. 7-1 *Sparrow, Halpern*

WCRP is finalizing the draft of its new Strategic Plan 2019-2029, which has been made available to the community (including SCOR) for comment until August 31 2018 (<https://www.wcrp-climate.org/wcrp-sp-pc>). A five-year Implementation plan is also being developed. WCRP has identified overarching Grand Challenges, of which the one on Regional Sea-Level Change and Coastal Impacts is most relevant to SCOR. Of WCRP's Core Projects, the Climate Variability (CLIVAR) project is particularly relevant to SCOR. SCOR WG 155 on Eastern Boundary Upwelling Systems (EBUS) and the CLIVAR EBUS Research Focus have determined how to conduct non-overlapping, complementary activities.

Action: None.

7.1.2 Scientific Committee on Antarctic Research (SCAR), p. 7-9 *Brussaard*

SCOR and SCAR currently co-sponsor the Southern Ocean Observing System (SOOS).

Action: Discuss whether SCOR should offer to help with other SCAR activities.

7.1.3 Future Earth Initiative *Sicre*

No information was received from Future Earth.

Action: None.

7.2 Affiliated Organizations

7.2.1 International Association for Biological Oceanography (IABO), p. 7-11 *Miloslavich*

IABO held its General Assembly held at the 4th World Conference on Marine Biodiversity in Montreal, Canada on 13-16 May 2018. A new IABO Executive Committee was elected, including Patricia Miloslavich as the new IABO President and Suchana Chavanich (Thailand) as the new IABO Secretary. The World Conference on Marine Biodiversity is the major focal assembly for sharing research outcomes, management and policy issues, and for discussions of the role of biodiversity and biodiversity conservation in sustaining ocean ecosystems. The 1st Carlo Heip Award Recipient was Prof. Carlos M. Duarte, Director of the Red Sea Research Center and Tarek Ahmed Juffalli Chair in Red Sea Ecology of King Abdullah University of Science Technology of the Kingdom of Saudi Arabia. The 5th WCMB will be held on the 13-16 December 2020 and will be hosted by the University of Auckland under the auspices of IABO.
Action: Identify areas of future cooperation with IABO.

7.2.2 International Association for Meteorology and Atmospheric Sciences (IAMAS), p. 7-14

Turner

IAMAS, IAPSO and IAGA held a successful joint assembly in Cape Town, South Africa on 27 August–1 September 2017, just prior to the SCOR annual meeting in Cape Town. Since the Cape Town assembly, the IAMAS Bureau, commissions and Executive have been heavily involved in planning of the IUGG assembly, which will be held in Montreal, Canada on 8–18 July 2019. In 2019, both IUGG and IAMAS will be 100 years old and several special events are being planned. The conference web site can be found at <http://iugg2019montreal.com/>.
Actions: Identify future areas of cooperation with IAMAS.

7.2.3 International Association for the Physical Sciences of the Oceans (IAPSO), p. 7-16

Smythe-Wright

The Joint IAPSO-IAMAS-IAGA Scientific Assembly entitled ‘Good Hope for Earth Sciences’ was held in Cape Town, South Africa, during the week of 27 August-1 September 2017. IAPSO presented the Prince Albert I Medal 2017 to Professor Lynne Talley (United States) and the Eugene LaFond Medal 2017 to Dr Jonathan Durgadoo from Mauritius. Like IAMAS, IAPSO is preparing for the IUGG Centenary meeting in Montreal in 2019. IAPSO’s 2021 Assembly will be held in Busan, Korea.

Action: Identify future areas for SCOR cooperation with IAPSO.

7.3 Affiliated Program

7.3.1 InterRidge - International, Interdisciplinary Ridge Studies, p. 7-27 *Devey*

InterRidge scientific activities are currently being conducted within the framework of the 3rd Decadal Plan 2014-2023 ‘From Ridge Crest to Deep-Ocean Trench: Formation and Evolution of the Oceanic Crust and Its Interaction with the Ocean, Biosphere, Climate and Human Society’, launched in 2012. The InterRidge Office will remain in France through the end of 2019. SCOR and InterRidge are co-sponsoring a meeting on "Mid-Ocean Ridges and Other Geological Features of the Indian Ocean" on 14-16 November 2018, in Goa, India. This meeting aims to encourage involvement of the scientists involved in marine geology and geophysics the second

International Indian Ocean Expedition (IIOE-2).

Action: None

7.3.2 International Ocean Colour Coordinating Group (IOCCG), p. 7-36 *Sun*

IOCCG has a system of working groups that produce scientific monographs to advance the field of ocean color observations from satellites. IOCCG and the SCOR/IOC GlobalHAB project co-sponsor a working group on WG on Harmful Algal Blooms. Another important IOCCG activity in recent years have been the biennial International Ocean Colour Science meetings, which are open meetings designed to bring together the international ocean color community to discuss important issues related to their science. The fourth International Ocean Colour Science meeting will take place in Busan, South Korea in April 2019. SCOR manages NASA grants for IOCCG.

Action: None.

7.3.3 Global Alliance of CPR Surveys (GACS) *Burkill*

No report was received from GACS.

Action: None

7.4 Other Organizations

7.4.1 Partnership for Observation of the Global Oceans (POGO), p. 7-42

Seeyave, Shapovalov

SCOR and POGO co-sponsor the POGO-SCOR Operational Oceanography Fellowships, as well as the International Quiet Ocean Experiment (IQOE).

Action: None

8.0 ORGANIZATION AND FINANCE

8.1 Membership *Urban*

8.1.1 National Committees, p. 8-1

Report on Membership Changes since 2017 SCOR Annual Meeting, p. 8-1

Member Nations and Nominated Members, p. 8-2

Actions: Suggest nations that could be recruited to SCOR.

8.2 Publications Arising from SCOR Activities, p. 8-2 *Urban*

SCOR projects and working groups have produced many publications in the past year. Several SCOR working groups have special issues or significant papers under development, which will appear in the next year.

Action: None

8.3 Finances, p. 8-3

Finance Committee, Urban

The SCOR Executive Committee approved a Finance Committee consisting of Isabelle Ansoorge (South Africa), Annalisa Griffa (Italy), Paul Myers (Canada), and Toshio Yamagata (Japan).

This committee will conduct its work during the SCOR meeting and will report on (1) the 2017 Audit report, (2) recommendations related for revisions to the 2018 SCOR budget, (3) recommendations for the 2019 SCOR budget, and (4) recommendations for dues levels in 2020.

Actions: Present (1) the 2017 Audit report, (2) recommendations related to revisions to the 2018 SCOR budget, (3) recommendations for the 2019 SCOR budget, and (4) recommendations for dues levels in 2020.

9.0 SCOR-RELATED MEETINGS

9.1 SCOR Annual Meetings

9.1.1 2018 General Meeting: Plymouth, UK, p. 9-1

Burkill

Action: Thank hosts of the meetings

9.1.2 2019 Executive Committee Meeting: Toyama, Japan, p. 9-1

Zhang

9.1.3 Future SCOR Annual Meetings

Urban

Discussions are underway with potential hosts for the 2020 and 2021 annual SCOR meetings.

9.2 Locations of Past SCOR Annual Meetings, p. 9-1

9.3 SCOR-Related Meetings Since the 2017 SCOR Annual Meeting and Planned for the Future, p. 9-2