



SCOR Virtual Annual Meeting 2020

20-22 October 2020

Block and Annotated Agenda

Meeting times

7:00-10:00 am EDT (11 am – 2 pm UTC)

Background documents:

<https://scor-int.org/events/2020-scor-annual-meeting/>

SCOR Virtual Annual Meeting 2020

BLOCK AGENDA

(with hyperlinks to reports)

Session 1. Tuesday, 20 October 2020. Chair: Marie A. Sicre / Note taker: Paul Myers

SCOR Executive Committee and National Committee nominated members only

Time (am)	Topic	Presenter
7:00	Welcome and introduction to agenda	M.A. Sicre
7:05	Report from SCOR President	M.A. Sicre
7:10	Report from SCOR Executive Director	P. Miloslavich
7:15	Results of the 2020 election for SCOR Officers	P. Burkill
7:20	Results of the 2020 selection of Early Career Scientist	P. Miloslavich
7:25	Approval of revised SCOR constitution	P. Burkill
	Presentation of new Working Group proposals:	
7:30	1. Analysing ocean turbulence observations to quantify mixing (ATOMIX)	T. McDougall
7:35	2. TRACE element SAMplers and sensors (TRACESAMORS)	J. Zhang
7:40	3. Benthic Foraminifera as Ecological Sentinels of Marine Systems Health (FORAM-ECO)	M. A. Sicre
7:45	4. Elucidating THreats tO Sandy beaches: a global synthesis (ETHOS)	S. Yoo
7:50	5. Integration of international ocean acidification research at CO2 seeps (InterSEEP)	N. Casacuberta
7:55	6. Mapping climate change refugia for marine conservation (MarCCR)	J. Uku
8:00	7. Respiration in the Mesopelagic Ocean (ReMO): Reconciling ecological, biogeochemical and model estimates	P. Burkill
8:05	8. Are global indicators of COastal and Nearshore benthic fish assemblage status in agreement if derived from disparate visual CENSUS techniques? (CoNCENSUS)	E. Montes
8:10	9. Developing an Observing Air-Sea Interactions Strategy (OASIS)	P. Myers
8:15	10. Atmospheric aerosol deposition as forcing factor for microbial ecology and biogeochemistry in the ocean (AEROS)	J. Penner
8:20	Break (10 minutes)	
8:30	Discussion of new Working Group proposals	SCOR Executive and National Committee nominated members
9:50-10:00	Wrap up and final decision	M.A. Sicre

Session 2. Wednesday, 21 October 2020. Chair: Sinjae Yoo / Note taker: Nuria Casacuberta

Open to all registrants

Time (am)	Topic	Presenter / EC liaison
7:00	Introduction to Day 2 session	S. Yoo
	Working Group reports:	
7:05	WG 143. Dissolved N2O and CH4 measurements: a global network of ocean time series measurements	S. Wilson / Casacuberta
7:10	WG 145. Chemical Speciation Modelling in Seawater to Meet 21st Century Needs (MARCHEMSPEC)	D. Turner / M.A. Sicre
7:15	WG 148. International Quality Controlled Ocean Database: Subsurface temperature profiles (IQuOD)	G. Castelão / P. Myers
7:20	WG 150. Translation of Optical Measurements into particle Content, Aggregation & Transfer (TOMCAT)	S. Giering / P. Burkill
7:25	WG 151. Iron Model Intercomparison Project (FeMIP)	Tagliabue / Casacuberta
7:30	WG 152. Measuring Essential Climate Variables in Sea Ice (ECV-Ice)	B. Else / T. McDougall
7:35	WG 153. Floating Litter and its Oceanic Transport Analysis and Modelling (FLOTSAM)	S. Aliani / P. Myers
7:40	10 minutes Q&A	
7:50	WG 154. Integration of Plankton-Observing Sensor Systems to Existing Global Sampling Programs (P-OBS)	A. Waite / E. Montes
7:55	WG 155. Eastern boundary upwelling systems (EBUS)	R. Escibano / Halpern
8:00	WG 156. Active Chlorophyll fluorescence for autonomous measurements of global marine primary productivity	N. Schubak / S. Yoo
8:05	WG 157. Marine zooplankton biodiversity based on DNA (MetaZooGene)	A. Bucklin / E. Montes
8:10	WG 158. Coordinated Global Research Assessment of Seagrass System (C-GRASS)	E. Duffy / J. Zhang
8:15	WG 159. Deep-Sea Biology for the Decade of Ocean Science for Sustainable Development (DeepSeaDecade)	K. Howell / E. Montes
8:20	10 minutes Q&A	
8:30	Break (10 minutes)	
	Research project reports:	
8:40	GEOTRACES – Trace elements and isotopes	A. Tagliabue / Halpern
8:45	SOLAS – Ocean/atmosphere interactions	L. Miller / J. Penner
8:50	IMBeR – Marine biosphere research	C. Robinson / P. Burkill
8:55	IQOE – Quiet Ocean	P. Tyack / D. Halpern
9:00	IIOE-2 – Indian Ocean expedition II	P. Burkill / P. Burkill
9:05	10 minutes Q&A	
	Infrastructural project reports:	
9:15	COBS – Changing ocean on biota	S. Collins / S. Yoo

9:20	GlobalHAB – Harmful Algal Blooms	E. Berdalet / S. Yoo
9:25	IOCCP – Ocean carbon	M. Ishii / D. Halpern
9:30	SOOS – Southern Ocean observing	Hofmann / McDougall
9:35	JCS – Joint Committee on Seawater	Pawlowicz / McDougall
9:40	10 minutes Q&A	
9:50-10:00	Wrap up and final decision	S. Yoo

Session 3. Thursday, 22 October 2020. Chair: Peter Burkill / Note taker: Enrique Montes

Session 3a. SCOR Executive Committee and National Committee nominated members only

Time (am)	Topic	Presenter
7:00-7:15	Report of Ad Hoc Finance Committee (10 minutes)	Nominated member

Session 3b. Reports from affiliated and partner organizations and capacity development activities - Open to all registrants

Time (am)	Topic	Presenter / EC liaison
7:15	Introduction to Day 3 session	P. Burkill
	<i>Affiliated projects reports:</i>	
7:20	IOCCG – Ocean colour	V. Stuart / S. Yoo
7:25	InterRidge – Ridge studies	S.M. Lee / J. Zhang
7:30	GACS – Alliance of Plankton Recorders	A. Richardson / P. Burkill
7:35	10 minutes Q&A	
	<i>Affiliated organizations reports:</i>	
7:45	IABO – Biological Oceanography	E. Montes
7:50	IAPSO – Physical Oceanography	T. McDougall
7:55	IAMAS – Meteorology and Atmosphere	J. Penner
8:00	10 minutes Q&A	
	<i>Partner organization updates:</i>	
8:10	IOC – Intergovernmental Oceanographic Commission	S. Arico / M.A. Sicre
8:15	PICES - North Pacific Marine Science Organization	H. Batch / S. Yoo
8:20	GESAMP – Group on marine environmental protection	B. Duce / TBD
8:25	POGO – Partnership for Observation of the Global Ocean	S. Seeyave / S. Yoo
8:30	<i>Break (10 minutes)</i>	
8:40	ISC – International Science Council	M. Visbeck / M.A. Sicre
8:45	SCAR – Scientific Committee Antarctic Research	E. Griffin / P. Myers
8:50	Future Earth-Ocean	C. Brousse / M.A. Sicre
8:55	WCRP – World Climate Research Program	M. Sparrow / D. Halpern
9:00	15 minutes Q&A	

9:15	Report on SCOR capacity development activities	P. Miloslavich
9:20	2021-2023 meetings: Korea 2021, Ecuador 2022, suggestions for 2023	Open discussion
9:30-10:00	Close of meeting and summary of actions	M.A. Sicre

SCOR Virtual Annual Meeting 2020

ANNOTATED AGENDA

SESSION 1. Tuesday, 20 October 2020

Chair: Marie A. Sicre / Note taker: Paul Myers

SCOR Executive Committee and National Committee nominated members only

1. OPENING TOPICS

1.1 Opening Remarks: welcome, agenda, and virtual session logistics - Sicre

The agenda along with all written reports, documents and narrated presentations from WGs, projects and affiliated organizations are available at the SCOR website (<https://scor-int.org/events/2020-scor-annual-meeting/>) to be reviewed before the meeting. During the virtual sessions, each WG, project and organization representative will give a 5-minute synthesis with the main highlights and the required actions.

The new WG proposals are available on the SCOR website. Narrated presentations of the new WGs by the corresponding SCOR Executive member are available for SCOR Executive and Nominated members only. A 5-minute synthesis of each WG proposal will be provided at the virtual session in preparation for the group discussion. The synthesis includes the Terms of Reference, membership and a summary of the reviews/recommendations by the national SCOR committees and affiliated organizations.

In Memoriam

SCOR pays tribute to the life and contributions of eight members of the oceanographic community who passed away in the last year:

- **Sir Anthony Laughton** (1927-2019) (UK) - Nominated member to SCOR for the UK and associate member of Working Group 107 on Improved Global Bathymetry
- **Robert (Bob) Dickson** (1941-2019) (UK) - Nominated member to SCOR for the UK, a full member of WG 68 on North Atlantic Circulation, and a member of the Scientific Steering Committee of the Global Ocean Ecosystem Dynamics (GLOBEC) project.
- **Karl Föllmi** (1954-2019) (Switzerland) - Nominated member to SCOR for Switzerland.
- **Taro Takahashi** (1930-2019) (Japan / USA) - A member of the Scientific Steering Committee of the Joint Global Ocean Flux Study (JGOFS) and a full member of the Joint Committee on Climatic Changes and the Ocean (CCCO).
- **Trevor Platt** (1942-2020) (UK) - Vice-chair of WG 73 on Ecological Theory in Relation to Biological Oceanography, the chair and a member of the Joint Global Ocean Flux Study (JGOFS) between SCOR and the International Geosphere-Biosphere Programme (IGBP), a full

member of the Joint SCOR/IOC Committee on Climatic Changes and the Ocean (CCCO) with SCOR, IAMAP, and IAPSO, and a member of the SCOR/IGBP/WCRP ad Working Group For the Global Ocean Euphotic Zone Study.

- **Ron O'Dor** (1944-2020) (Canada) - Senior Scientist for the Census of Marine Life, a SCOR affiliated project 2000-2010.
- **George Hemmen** (1926-2020) (UK) - The first Executive Director of SCOR from 1972-1980 (called Executive Secretary then). He also served the Scientific Committee on Antarctic Research (SCAR) for more than 27 years, first as Assistant Secretary then as Executive Secretary. In the picture below, three generations of SCOR Executive Directors.
- **Jacco Kromkamp** (1956-2020) (The Netherlands) - Full Member of SCOR Working Group 156 on Active Chlorophyll fluorescence for autonomous measurements of global marine primary productivity

1.2 Report of the President of SCOR - *Sicre*

The President will briefly review her activities for SCOR since the SCOR Annual Meeting in September 2019 in Toyama, Japan.

1.3 Report of SCOR Executive Director - *Miloslavich*

The Executive Director will report on her activities for SCOR since taking the position in January 2020, and on the current condition of SCOR.

1.4 Appointment of ad hoc Finance Committee - *Miloslavich*

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 2021 activities and dues for 2022. Members of the 2020 Finance Committee approved by the Executive Committee (on the 14th of September 2020) are Isabel Ansoorge (South Africa), Peter Croot (Ireland), Daniel Weihs (Israel) and Sun Song (China). The Committee will report to the meeting on Day 3.

Action: None. The Finance Committee will present their report of the SCOR finances on Session 3 (22 October)

1.5 Results of the 2020 Elections for SCOR Officers - *Burkill*

The SCOR President and all three Vice-President positions were open for nominations for the 2020 elections. The Nominating Committee chaired by Past President Peter Burkill and with Isabelle Ansoorge (South Africa), Dr Lennart De Nooijer (The Netherlands) and Dr Sun Xiaoxia (China) as members reviewed the nominations, prepared a final slate of candidates and confirmed their availability to serve in the SCOR Executive Committee. The slate of candidates was sent to all nominated members for their comment / approval.

Action: Approve new slate of officers proposed by the Nominating Committee.

1.6 Results of the 2020 selection of the Early Career Scientist to the SCOR Executive - Miloslavich

39 applications to the position of ECS to the SCOR Executive Committee were received. Each applicant was reviewed by three members of the EC and the reviews were ranked. The top three candidates were interviewed by SCOR President (Sicre), Secretary (Myers) and Vice-president (Yoo). The selected applicant is Dr. Charlotte Laufkotter currently working at Bern University, Switzerland as an Ambizione Fellow. Her area of expertise is marine biogeochemistry, in particular biological carbon cycling and plankton communities, extreme events, and marine plastic pollution.

Action: Welcome Charlotte Laufkotter to the SCOR EC and acknowledge Nuria Casacuberta-Arola for her services.

1.7 Changes in the SCOR constitution - Burkill

The Constitution Committee composed by Peter Burkill (Chair), Bob Duce, Julie Hall, Danielle Su, and Xiaoxia Sun have drafted a revised SCOR Constitution following recommendation by the ICS review to SCOR.

Action: Approve the proposed changes.

2. WORKING GROUPS

2.1. New Working Group proposals

2.1.1. Analysing ocean turbulence observations to quantify mixing (ATOMIX) - *McDougall*

Action: Consider as new SCOR working group.

2.1.2. TRACE element SAMplers and sensors (TRACESAMORS) - *Zhang*

Action: Consider as new SCOR working group.

2.1.3. Benthic Foraminifera as Ecological Sentinels of Marine Systems Health (FORAM-ECO) - *Sicre*

Action: Consider as new SCOR working group.

2.1.4. Elucidating THreats tO Sandy beaches: a global synthesis (ETHOS) - *Yoo*

Action: Consider as new SCOR working group.

2.1.5. Integration of international ocean acidification research at CO₂ seeps (InterSEEP) –
Casacuberta-Arola

Action: Consider as new SCOR working group.

2.1.6. Mapping climate change refugia for marine conservation (MarCCR) - *Uku*

Action: Consider as new SCOR working group.

2.1.7. Respiration in the Mesopelagic Ocean (ReMO): Reconciling ecological, biogeochemical and model estimates - *Burkill*

Action: Consider as new SCOR working group.

2.1.8. Are global indicators of COastal and Nearshore benthic fish assemblage status in agreement if derived from disparate visual CENSUS techniques? (CoNCENSUS) - *Montes*

Action: Consider as new SCOR working group.

2.1.9. Developing an Observing Air-Sea Interactions Strategy (OASIS) - *Myers*

Action: Consider as new SCOR working group.

2.1.10. Atmospheric aerosol deposition as forcing factor for microbial ecology and biogeochemistry in the ocean (AEROS) - *Penner*

Action: Consider as new SCOR working group.

SESSION 2. Wednesday, 21 October 2020

Chair: Sinjae Yoo / Note taker: Nuria Casacuberta

2.2. 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.

2.2.1. WG 143 on Dissolved N₂O and CH₄ measurements: Working towards a global network of ocean time series measurements of N₂O and CH₄ – *Sam Wilson / Casacuberta*

The group presented a poster at OceanObs19 and participated in an OCB workshop in October 2019. The group met during Ocean Sciences 2020. ToRs 1, 2 and 4 are completed and the group is working on completing ToR 3 which are the Standard Operating Procedures (SOPs) for methane and nitrous oxide. They are also preparing a perspective paper for Biogeosciences.

Action: Consider disbanding when the two planned products for 2021 are completed.

2.2.2. WG 145 on Chemical Speciation Modelling in Seawater to Meet 21st Century Needs (MARCHEMSPEC) – *David Turner / 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 (grant ends in 2022). The group has also enlisted the help of several national laboratories in its work and is also cooperating with the Joint Committee on Seawater on pH issues (see **agenda item 4.5**). The group met at the 2020 Ocean Sciences Meeting and organized a Town Hall along with tutorials at the SCOR booth providing software demonstrations. Four activities are planned for next year including extending the modelling to trace metals, document key knowledge gaps, complete the Best Practice paper, and the general release of the speciation software (planned for early 2022)

Action: Consider providing an extension to the WG until April 2022 when the products planned for 2021 and early 2022 are completed.

2.2.3. WG 148 on International Quality Controlled Ocean Database: Subsurface temperature profiles (IQuOD) – *Guilherme Castelhão / Myers*

The group had a workshop in Brest, France (October 2019) focused on the developing a roadmap for the v1.0 data release. The group published 4 papers in 2019-2020 and has several products planned to be released in 2021 (e.g. Publication of the IQuOD v1.0 product, of the Auto QC paper associated with the v1.0 product, and of the Uncertainties paper associated with the v0.1 product). The group is actively looking for more funding and seeking endorsement from the UN Decade. May request letter of support from SCOR for funding proposals in the future.

Action: Consider a one-year extension of WG with funding, and provision of letter of support. The WG could apply to be a SCOR-affiliated project after the WG is disbanded next year. To consider as a potential SCOR contribution to the UN Decade?

2.2.4. WG 150 on Translation of Optical Measurements into particle Content, Aggregation & Transfer (TOMCAT) – *Sara Giering / Burkill*

The group produced 3 publications since the last annual meeting and most of the ToRs have achieved either totally or partially. For next year they are planning a Summer School and may potentially meet one more time back to back during the Summer School. They share publishing optical methods via the JETZON data sharing platform (www.jetzon.org) which will continue to be used as to share data and methods.

Action: Consider funding for 2021 meeting held with Summer School.

2.2.5. WG 151: Iron Model Intercomparison Project (FeMIP) – *Alessandro Tagliabue / Casacuberta-Arola*

The group met during the Ocean Sciences meeting and made good progress however subsequent events due to the pandemic reduced their momentum on plans. They are planning to meet next year. The group is asking for the feasibility of SCOR hosting a FeMIP specific website to group all code and fields for public availability.

Action: Consider funding for 2021 WG meeting and to use funds to develop through Castle Builder (same as SCOR website) a site that they can control and can interface with the SCOR website.

2.2.6. WG 152 on Measuring Essential Climate Variables in Sea Ice (ECV-Ice) – *B. Else / McDougall*

The group published three papers and have continued to update the website. They met on 16-18 August 2019 in Winnipeg, Canada along with BEPSII. They are expecting to have 2-3 virtual meetings and were planning to meet in August 2020 in Hobart with BEPSII but this was postponed to 2021. They will attempt to make another intercalibration experiment in 2021 in Cambridge Bay, Canada. The group requests support for a last meeting in 2021.

Action: Consider supporting the 2021 meeting and disbanding after the intercalibration products are completed.

2.2.7. WG 153 on Floating Litter and its Oceanic Transport Analysis and Modelling (FLOTSAM) – *Stefano Aliani / Myers*

This group has participated in many workshops, conferences, and symposia, including a keynote talk at Ocean Sciences 2020. The group has published 10 papers. The third meeting was planned for 2020 in Japan but was postponed for 2021, co-sponsored by the Lounsbery Foundation grant.

Action: Consider funding for 2021 meeting.

2.2.8. WG 154 on Integration of Plankton-Observing Sensor Systems to Existing Global Sampling Programs (P-OBS) – *Anya Waite / Montes*

Most of the ToRs have been finalized and still working on documenting potential applications and measurement protocols. The manual for OceanSites is currently being drafted. The GO-SHIP manual for plankton measurements was uploaded at the Ocean Best Practice platform. The group met this year at Ocean Science and had a tutorial session, they want to continue to do more outreach activities. They also met virtually in September 2020. The meeting planned in Halifax in fall 2020 was postponed to 2021.

Action: Consider funding for 2021 WG meeting.

2.2.9. WG 155 on Eastern boundary upwelling systems (EBUS): diversity, coupled dynamics and sensitivity to climate change – *Rubén Escribano / Halpern*

The group cancelled the Summer School planned in Senegal and plans are in standby for 2021. The group met virtually in June and produced three papers in 2019-2020. Will continue to work online until meetings can be rescheduled.

Action: Consider funding for 2021 WG meeting.

2.2.10. WG 156 on Active Chlorophyll fluorescence for autonomous measurements of global marine primary productivity - *Yoo*

The group met at Ocean Sciences 2020 and have made significant progress to achieve ToRs. The groups has created a new shared Wiki page to organize the content of their SCOR WG activities (<http://scor156.com/>), currently password protected, but aiming to share resources. Currently working on their first publication and drafting a second high-profile perspective type publication on how fluorometry can transform understanding of marine primary productivity. New meta-data compiled for this publication may also contribute to other papers led by the WG ECR members. Will continue to meet virtually if travel limitations persist but if not, will meet in 2021.

Action: Consider funding for 2021 WG meeting.

2.2.11. WG 157: Toward a new global view of marine zooplankton biodiversity based on DNA metabarcoding and reference DNA sequence databases (MetaZooGene) – *Ann Bucklin / Montes*

The group met in Gothenburg in September 2019 and organized a SCOR Symposium. It met again at Ocean Sciences 2020 and they provided demonstrations at the SCOR booth. The group has one publication in press. ToRs are in progress, and for next year there are several planned publications, including a special issue in the ICES journal and capacity building workshops.

Action: Consider funding for 2021 WG meeting.

2.2.12. WG 158: Coordinated Global Research Assessment of Seagrass System (C-GRASS) – Emmett Duffy / Zhang

The group had planned the first international C-GRASS meeting in Colombia in early May but had to cancel due to COVID restrictions. They met virtually throughout September and have organized in four core teams: data analysis and synthesis, best practices, data schema, and community of practice. s organized in subgroups by themes and tasks. Several members of the WG—including the co-PIs—were involved the production and launch of the Out of the Blue global seagrass synthesis report. While not a direct output of the C-GRASS WG, the report will form the basis of the WG’s work moving forward. There has been significant progress of the ToRs and these will continue next year.

Action: Consider funding for 2021 WG meeting.

2.2.13. WG 159: Roadmap for a Standardised Global Approach to Deep-Sea Biology for the Decade of Ocean Science for Sustainable Development (DeepSeaDecade) – Kerry Howell / Montes

The group held its first meeting 22-24th Jan 2020 in Portugal. The group outlined two papers to be developed over the next 4 months. One outlining a blue print for the UN Decade and one focused on barriers to deep-sea science for developing nations. The last day of the meeting was given over to a public event discussing needs and plans for the Decade. Many students and early career researchers were invited to this meeting. The second meeting was planned in Brazil in August 2020 but was cancelled and will be rescheduled for 2021.

Action: Consider funding for 2021 WG meeting.

3. LARGE-SCALE OCEAN RESEARCH PROJECTS

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 – Alessandro Tagliabue / Halpern

GEOTRACES organized a Summer School in September 2019, and in 2020 it organized a special session at Ocean Sciences and had live demonstrations at the SCOR booth. Due to COVID, all the rest of the meetings (SSC and data management team) was done virtually. GEOTRACES is preparing the release of the third Intermediate Data Product for 2021, and continues its scientific activities related

to publications, intercalibration, data management and capacity building. The SSC received the SCOR review and has addressed its recommendations in a response to the SCOR Executive.

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

3.2. Surface Ocean – Lower Atmosphere Study (SOLAS) (SCOR/Future Earth)– *Lisa Miller / Penner*

SOLAS organized live demonstrations at the SCOR booth at Ocean Sciences and has held all meetings since virtually including the SSC meeting. The IPO is working on organizing the SOLAS Summer School 2021 to be held in Cape Verde if travel restrictions allow. SSC Chair Lisa Miller ends her term in December and two new SSC co-chairs were approved by SCOR and the other SOLAS sponsors. They will begin their terms in January 2021 (Minhan Dai and Cliff Law).

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

3.3. Integrated Marine Biosphere Research (IMBeR) (SCOR/Future Earth) – *Carol Robinson / Burkill*

The IMBeR IPO moved to its new host institution, Dalhousie University in Canada. Four new members joined the SSC in January 2020 including an early career researcher, and two African (female) scientists. The group organized a special session and had live demonstration at the SCOR booth during Ocean Sciences 2020. The SSC met virtually in June 2020 and addressed nine common tasks leading to development of publications, strategic direction for IMBeR, ability to assess IMBeR's impact and planning for the next conference in IMBeR's innovative IMBIZO series.

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

3.4. International Quiet Ocean Experiment (IQOE) (SCOR/POGO)– *Peter Tyack / Halpern*

IQOE working groups have continued their activities virtually. IQOE scientists presented at the Ocean Sciences meeting and the ocean soundscapes related session resulted in in a Research Topic on the journal *Frontiers of Marine Science*. A paper on Changes in Ambient Sound in the Ocean from the COVID-19 Pandemic was submitted to *JASA Express letters*, and the group is preparing a workshop in 2021 to plan the implementation of ocean sound as an Essential Ocean Variable (EOV).

Action: Consider supporting the 2021 activities (workshop) with the unused 2020 approved funds.

3.5 Second International Indian Ocean Expedition (IIOE-2) (SCOR/IOC)– *Peter Burkill*

The IIOE-2 Core Group has met virtually four times since November 2019 to deal with strategic issues. The SSC meeting to be held along with the Indian Ocean Science Conference earlier this year was postponed until further notice. Cruises have also been postponed; however the community has remained productive with several publications. The Core Group has discussed a replacement for the leadership of the Data and Information Management WG (former lead Cyndy Chandler retired). Peter Burkill will step down as co-chair of IIOE-2 on behalf of SCOR and will be replaced by Marie Alexandrine Sicre.

Action: Consider 2021 support from SCOR to IIOE-2.

4. INFRASTRUCTURAL PROJECTS

4.1. Changing Ocean Biological Systems (COBS) – Philip Boyd / Yoo

The group has drafted the new ToRs and a proposed membership as it transitions from a WG to a SCOR project. The group has carried out mentoring and capacity building in national and international venues (e.g. IAEA, Ocean Sciences 2020) and developed a 24-slide workshop template for the growing team of national advocates. The online ‘Experimenting with multistressors’ resource (<https://meddle-scor149.org/>) has been used for publicity, lecturing and research.

Action: None. Funding is provided from NSF specifically for the group through SCOR.

4.2. GlobalHAB (SCOR/IOC) – Elisa Berdalet / Yoo

The GlobalHAB SSC has renewed its composition and has organized around strategic themes. The GlobalHAB symposium on automated in situ observations of plankton to be held in June 2020 in Sweden was postponed to 2021. For this year, the SSC met virtually, and for 2021, the project is planning to hold a face to face SSC meeting as well as Modelling Workshop.

Action: None. SCOR still holds past funds from GlobalHAB to support the activities in 2021.

4.3. International Ocean Carbon Coordination Project (IOCCP) (SCOR/IOC)– Masao Ishii / Halpern

The IOCCP incorporated new members in the SSG, and one of the co-chairs (Masao Ishii) will rotate off in 2021. The review of IOCCP by SCOR and IOC was completed and the IOCCP will be sending a formal response letter on how it plans to address all recommendations. The group had a special session at Ocean Sciences 2020. The SSG had planned to meet in Auckland in November 2020 but this meeting will be held virtually.

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

4.4. The Southern Ocean Observing System (SOOS) (SCOR/SCAR)– Eileen Hofmann / McDougall

The SOOS SSC had a renewal process, with two new co-chairs coming in along with other three members. The 2020 SSC meeting was going to be held in Hobart in conjunction with the SCAR meeting, but this was held virtually. The data portal for the Southern Ocean, SOOSMap, continues to be used and all SOOS WGs continue to be active virtually. Several opportunities have been advertised with the Weddell Sea/Dronning Maud Land and the Amundsen/Bellingshausen Sea groups.

Action: None. SCOR has already committed funding for SOOS for 2021.

4.5. Joint Committee on Seawater (JCS) (IAPWS/SCOR/IAPSO) – Rick Pawlowicz / McDougall

This group was formed to continue the work of SCOR/IAPSO WG 127 on Thermodynamics and Equation of State of Seawater. SCOR provides a small amount of funding each year to enable the JCS chair and others to attend annual meetings of the International Association for the Properties of Water and Steam (IAPWS). The JCS has been responsible for continued implementation of TEOS-10, as well as conducting experimentation and modeling for proper description of seawater properties in models. The JCS has been working with SCOR WG 145 in terms of pH and its effects on trace metals and other components of seawater and held a workshop together at Ocean Sciences 2020. Plans to meet at the 2020 IAPWS Annual Meeting (Turin Italy, September 2020) were abandoned as the meeting was cancelled due to COVID-19.

Action: Consider funding for 2021.

SESSION 3. Thursday, 22 October 2020

Chair: Peter Burkill / Note taker: Enrique Montes

Opening: Report of Ad Hoc Finance Committee – Chair of Finance Committee

The 2020 Finance Committee having reviewed (1) the SCOR 2019 auditor's report, (2) the final vs actual 2019 budget, (3) financial reports and charts from the Secretariat, (4) the 2020 revised budget and draft of 2021 budget, will consider approval of 2020 revised budget and of 2021 draft budget, and determine increase in dues for 2022.

Actions: Present (1) the final 2019 SCOR financial statement, (2) recommendations related to revisions to the 2020 SCOR budget, (3) recommendations for the 2021 SCOR budget, and (4) recommendations for dues levels in 2022.

5. AFFILIATED PROJECTS AND NON-GOVERNMENTAL ORGANIZATIONS

5.1. International Ocean Colour Coordinating Group (IOCCG) – Venetia Stuart / Yoo

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 annual IOCCG-25 Committee meeting was scheduled to take place from 27–29 March 2020 in Tokyo, Japan hosted by the Japan Aerospace Exploration Agency (JAXA) but had to be cancelled. There are plans to conduct several teleconferences with various groups to discuss pressing matters. The next full IOCCG Committee meeting is scheduled to take place in early February 2021. SCOR manages NASA grants for IOCCG.

Action: None.

5.2. InterRidge - International, Interdisciplinary Ridge Studies – *Sang-Mook Lee / Zhang*

The InterRidge Steering Committee met online in May 2020 and Seung-Sep Kim from Korea joined the SC. The SC approved a new WG focused on biological issues, MacroCHESS to expand on the current IR Vents Database.

Action: None

5.3. Global Alliance of CPR Surveys (GACS) – *Anthony Richardson / Burkill*

The most recent GACS annual meeting was held in November 2019 in Hobart and it was followed by a molecular workshop. COVID has made the work challenging but the community is currently working in several papers using CPR data to validate a global ecosystem size spectrum model, test ecological theory, and a global CPR methods paper. There is now a global CPR database, with all data from CPR surveys globally and the latest taxonomic identifiers. GACS has been endorsed by GEOBON engaged with SOOPIP (SOOP Implementation Panel), contributing to Ocean Best Practices and continues to be strongly engaged with POGO.

Action: None

5.4. International Association for Biological Oceanography (IABO) – *Enrique Montes*

IABO has focused on the implementation of the new organizational structure following the Terms of References (ToRs) approved during the previous year by the IABO Executive Committee. Several updates have been made to the IABO site to highlight information of new members, new logo and about the upcoming 5th World Conference on Marine Biodiversity to be held in Auckland, New Zealand in December 2020 (mix of virtual and attended). SCOR is providing \$5,000 USD for registration of scientists from developing countries to attend the 5th WCMB. IABO recognized two scientists with the Carlo Heip Award for 2019 (Graham Edgar) and 2020 (Steve Hawkins).

Action: Identify areas of future cooperation with IABO.

5.5. International Association for the Physical Sciences of the Oceans (IAPSO) – *Trevor McDougall*

IAPSO was actively organizing the IAPSO-IAMAS-IACS Joint Assembly in Busan, South Korea, 18-23, July 2021, but they all agreed to cancel this in-person joint assembly, due to the COVID-induced uncertainty surrounding international travel, the meeting may be either organized virtually or postponed 12 months. This IAPSO ECS group has now produced a website (<https://www.iapsoecs.org>) and a twitter account (https://twitter.com/iapso_ecs?s=20) for this working group, where the newsletters, job and research cruise opportunities and ECS-related events get routinely updated.

Action: Identify future areas for SCOR cooperation with IAPSO.

5.6. International Association for Meteorology and Atmospheric Sciences (IAMAS) – *Joyce Penner*

The IAMAS sponsored meetings have had the following changes: (1) Quadrennial International Radiation Symposium planned to be held in Thessaloniki, Greece (July 2020) postponed to 14 to 18

June 2021, (2) Quadrennial Ozone Commission planned for October 2020 at Yonsei University, South Korea, postponed until October 3 to 9, 2021, (3) International Commission on Clouds and Precipitation conference planned for August 3 to 7 2020 in Pune, India postponed to 2021, and (4) International Global Atmospheric Chemistry (in collaboration with the IAMAS sponsored Commission on Atmospheric Chemistry and Global Pollution) meeting planned for September 14 – 18, 2020 in Manchester, U. K. postponed to September 12 – 16, 2021.

Actions: Identify future areas of cooperation with IAMAS.

6. INTERGOVERNMENTAL AND PARTNER ORGANIZATIONS

6.1. Intergovernmental Oceanographic Commission (IOC) – *Salvatore Arico / Sicre*

The IOC and SCOR have long successfully cooperated and thereby strengthened research and scientific programmes. The IOC Secretariat looks forward to sharing with SCOR its views on those proposals for new and to-be-renewed SCOR Working Groups that more closely reflect the current priorities of IOC in ocean science and support the UN Decade for Ocean Science and Sustainability. IOC co-supports with SCOR GlobalHAB, the IOCCP, and the IIOE-2.

Actions: None

6.2. North Pacific Marine Science Organization (PICES) – *Hal Batchelder / Yoo*

SCOR and PICES have developed cooperative methods that have made it possible for an international non-governmental organization and a regional intergovernmental organization to share their strengths. Continuing and expanding collaboration between PICES and SCOR is based on the recognition that PICES can play an important role in bringing a North Pacific perspective to the global activities of SCOR, and that by participating in and implementing these activities in the region, PICES can advance its own scientific agenda.

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: As determined from presentation and discussions at the SCOR Annual Meeting.

6.3. Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) – *Bob Duce /*

During the past year GESAMP WG 38 focused its attention in three areas: 1) Development of a workshop on the ocean management and policy implications of the air/sea exchange of chemicals; 2) Development of a workshop on the atmospheric transport of microplastics to the ocean; and 3) Completion of the peer-reviewed publications arising from the 2017 workshop "The impact of the changing acidity of the ocean and atmosphere on the air/sea exchange of chemicals", as well as from other WG 38 activities. GESAMP WG38 was planning a workshop in South Africa in Fall 2020 but this was postponed to 2021. SCOR is holding funding for this workshop and granted the extension of their use to 2021.

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

6.4. Partnership for Observation of the Global Oceans (POGO) – *Sophie Seeyave / Yoo*

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

Action: None

6.5. International Science Council (ISC) – *Martin Visbeck, Mathieu Denis / Sicre*

The International Science Council (ISC) was launched in June 2018 and has since been focused on establishing a new governing structure. The SCOR Executive Committee and Executive Director responded to the ICSC review of SCOR. One of the issues to address was the updating of the SCOR Constitution which is to be approved in this annual meeting. The ISC was organizing an 'International Initiatives Leadership' (IIL) meeting for March 2020 in Paris to discuss the science we need for sustainability and how the science community can strengthen its collective impact on global decision-making. The meeting was cancelled due to COVID. The SCOR President and ED were going to attend this meeting.

Actions: Identify SCOR contributions to the topics of the IIL meeting.

6.6. Scientific Committee on Antarctic Research (SCAR) – *Chandri Nath, Eoghan Griffin / Myers*

SCOR and SCAR currently co-sponsor the Southern Ocean Observing System (SOOS). The Covid-19 pandemic has had several impacts on SCAR including the cancellation of its 2020 Open Science Conference and Delegates meeting in Hobart. However, key elements of the conference were moved online during the original conference dates 3-7 August. SCAR's current Scientific Research Programs are ending in 2020 and SCAR is in the process of reviewing proposals for three new proposed Scientific Research Programmes, for consideration by the SCAR Delegates.

Action: Confirm co-support for SOOS in 2021.

6.7. Future Earth – Ocean – *Clément Brousse / Sicre*

Future Earth Secretariat is carrying activities related to ocean science on a regular basis. In addition of liaising with the research projects SOLAS and IMBeR (through funding, sharing of opportunities etc.), Future Earth Secretariat is working in close relation with the Ocean KAN (Knowledge Action Network). The Ocean Kan Development Team recently developed their Implementation Plan in which all sponsors including SCOR provided input. Future Earth is currently in the process with the other sponsors of reviewing applications to host the Ocean KAN IPO.

Actions: As determined from presentation and discussions at the SCOR Annual Meeting.

6.8. World Climate Research Program (WCRP) – *Mike Sparrow /*

WCRP is implementing its new research strategy (WCRP Strategic Plan 2019-2028) by reviewing its entire structure and improving its functionality, including its interaction with partners. Major elements of the implementation plan include strengthening support for core research, and to extend and deepen our engagement with scientific partners at the national and international levels.

WCRP carries most of its activities through four core projects: CLIVAR (oceans and climate - www.clivar.org), CliC (cryosphere and climate - www.climate-cryosphere.org), GEWEX (water and climate www.gewex.org) and SPARC (upper atmosphere and climate - <http://www.sparc-climate.org>). Both CLIVAR and CliC are endorsers of the SCAR/SCOR Southern Ocean Observing System (SOOS). Of these core projects the work of CLIVAR is of relevance to SCOR. WCRP has gone almost wholly online since the start of the COVID-19 crisis. Major meeting such as the Joint Scientific Committee meeting were held with over 80 people attending remotely.

Actions: As determined from presentation and discussions at the SCOR Annual Meeting.

7. CAPACITY BUILDING ACTIVITIES

7.1. SCOR Committee on Capacity Building - *Miloslavich*

In the past year, the committee reviewed one set of requests for travel support to scientific meetings and reviewed the 2020SCOR Visiting Scholar applications. The committee helped compile information on examples of capacity-building activities carried out by SCOR working groups (see <https://scor-int.org/work/groups/capacity-dev-examples/>). The committee is also discussing potential new sources of funding for SCOR capacity-building activities. Rui Seabra, from Portugal, one of the finalists for the Early Career Scientist position to the SCOE Executive will join the Capacity Building Committee.

Action: Consider funding for 2021 activities of the committee.

7.2. SCOR Visiting Scholars - *Miloslavich*

Five SCOR Visiting Scholars were approved in 2019, to work in Angola, Argentina, Brazil, Ecuador, and Mauritius. In 2020, six Visiting Scholars were approved to work in Fiji, Angola, India, Philippines, and India. Due to COVID none of them was able to travel but SCOR will support their travel when they reprogram for 2021. This is the first year that SCOR Visiting Scholars will be sent to Fiji and the Philippines, and the first time a Visiting Scholar from China-Beijing has been selected. The call for 2021 VS was issued and closes in December 2020. Ed Urban and Sophie Seeyave (POGO Executive Director) submitted an article on the SCOR Visiting Scholar Program and POGO Visiting Professor Program for to Oceanography magazine and are now working on revisions to the article.

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.

7.3. POGO-SCOR Fellowships for Oceanographic Observations - *Miloslavich*

Four Fellows were funded in 2019. In 2020, 45 applications were received this year, 40% of which were from female candidates. Applications were received from 24 countries in all continents, except Oceania.

With the combined available budget from POGO and SCOR, 5 candidates were selected from India, Venezuela, Argentina, Colombia and Morocco. The review of the applications was done by SCOR and POGO. None of the selected candidates has been able to travel this year but SCOR/POGO will support their travel when they reprogram for 2021. SCOR and POGO have been cooperatively funding this program since 2001.

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

7.4. NSF Travel Support for Developing Country Scientists -*Miloslavich*

A renewal proposal to NSF was submitted in early 2020 and approved. Since the 2019 SCOR meeting, 8 requests have been received for a total amount of \$47,911 to support attendance of scientists from developing countries to attend SCOR relevant conferences or meetings.

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

7.5. Research Discovery Camps at the University of Namibia - *Miloslavich*

The 2020 Research Camp was postponed from April to December 2020, and then to 2021 because of the pandemic. For now, it appears that the camp will have access to the Namibian government research vessel at that time, which has become an integral part of the program. This program is supported through grants from the Agouron Institute and the Simons Foundation.

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

8. SCOR ORGANIZATION

8.1. Membership - *Miloslavich*

Report on current Member Nations and Nominated Members and changes in composition of the Nominated Members since the 2019 SCOR Annual Meeting. The SCOR Executive discusses on a regular basis how to recruit new nations to participate in SCOR.

Actions: Suggest nations that could be recruited to SCOR.

8.2. Publications Arising from SCOR Activities - *Miloslavich*

SCOR projects and working groups have produced many publications in the past year. All WG publications are updated on the SCOR website (<https://scor-int.org/work/publications/>). Several SCOR working groups have special issues or significant papers under development, which will appear in the next year.

Action: None

9. SCOR RELATED MEETINGS

The SCOR 2020 meeting was originally planned to be in Guayaquil, Ecuador hosted by the Instituto Nacional de la Armada (INOCAR). Due to the COVID pandemic, the meeting had to be held virtually. The 2021 meeting is scheduled to be in Busan, Korea hosted by the Korea Institute of Ocean Science and Technology (KIOST). The INOCAR hosts remain enthusiastic about having a SCOR meeting in Ecuador and could organize it in 2022. Invitations are open for locations for SCOR Annual Meetings after 2022. See full section in Tab 9 for locations of past SCOR meetings and a summary of the SCOR-related meetings since the 2019 Annual SCOR Meeting in Toyama and planned for 2021 within the uncertainties of COVID limitations.

Actions: Confirm 2021 and 2022 venues for SCOR Annual Meeting and invite ideas for venues beyond 2022. Set tentative date for 2021 meeting.