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5.0 CAPACITY-BUILDING ACTIVITIES

5.1 SCOR Committee on Capacity Building

Feeley, Urban

Terms of Reference

The primary purpose of the SCOR Committee on Capacity Building is to oversee all of SCOR's capacity-building activities and to help the SCOR Secretariat manage these activities, specifically to

- Provide direction for all of SCOR's existing capacity-building activities: participation of scientists from developing countries and countries with economies in transition in SCOR activities, POGO-SCOR Fellowship Program, travel grants, and provision of reports to libraries in developing countries.
- Guide and assist SCOR Executive Director in development of new capacity-building activities, particularly the Regional Graduate Schools of Oceanography activity.
- Assist SCOR-sponsored projects in developing their capacity-building activities.
- Help SCOR arrange funding for existing and new capacity-building activities.
- Assist SCOR in interacting with regional and international groups related to capacity building in ocean sciences, such as the ICSU regional centers, START, IOC regional programs, etc.

Chair:

Claudia Benitez-Nelson (USA)

Other Members: Mary (Missy) Feeley (UK), Vanessa Hatje (Brazil), Venu Ittekkot (Germany), Prasanna Kumar (India), Margareth Kyewalyanga (Tanzania), Sun Song (China-Beijing), Jennifer Verduin (Australia)

Liaisons: Hal Batchelder (PICES), Jim Costopulos (Global Oceans), Julius Francis (WIOMSA), Peter Pissierssens/Claudia Delgado (IODE/IOC), Eric Raes (IIOE-2 Early Career Scientists Network), and Sophie Seeyave (POGO)

In the past year, the committee reviewed two sets of requests for travel support to scientific meetings and also reviewed the 2018 SCOR Visiting Scholar applications.

5.2 SCOR Visiting Scholars

Feeley

SCOR began a program in 2009 to enlist the services of ocean scientists from the SCOR community, from both developed countries and developing countries, both recently retired and active, to teach short courses and to provide more extended on-site education and mentorship at developing country institutions. Some countries and/or individual institutions have requirements for their scientists to retire at a given age, sometimes as early as 60 years of age. Many retired ocean scientists are still interested in teaching and mentoring, and are supported by pensions after their retirement, so do not need salary support. Some active scientists can also use some of their already-supported work time to work in a developing country.

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Hosting visiting scientists, whether retired or active, can have many benefits to host institutions also, such as inspiring, motivating, and informing students and faculty, and leading to future collaborations between the visiting scientist and the host institution.

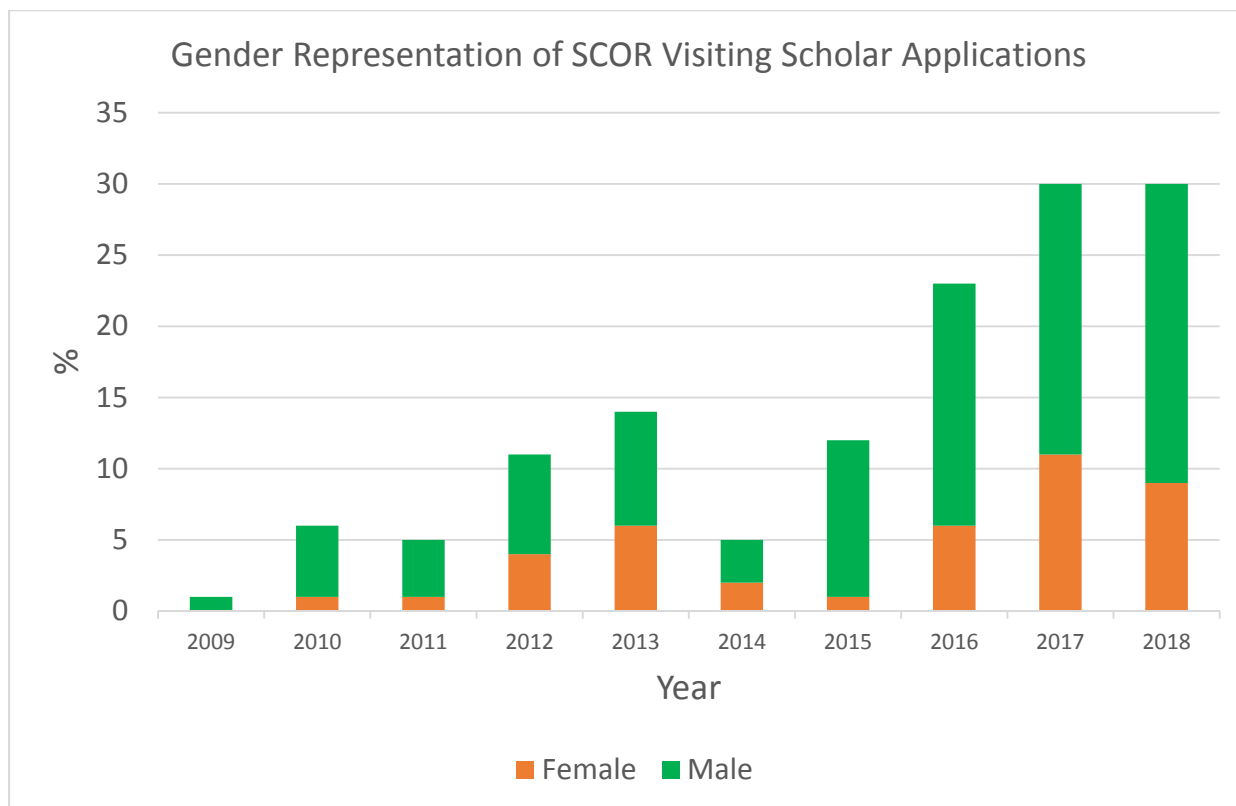
The program is a partnership, with the host institution providing local accommodation and SCOR finding resources to pay for airfares and other local expenses, as necessary. The participating scientists donate their time. SCOR Visiting Scholars might be onsite for as little as two weeks to as long as visa requirements would allow. Applicants may already have selected a host institution or SCOR will help identify hosts. Information about the program is available at http://www.scor-int.org/SCOR_Visiting_Scholars.htm.

The number of Visiting Scholars approved each year has increased from 1 in 2009 to 7 in 2018. The SCOR Visiting Scholars who were approved in 2018 are shown below.

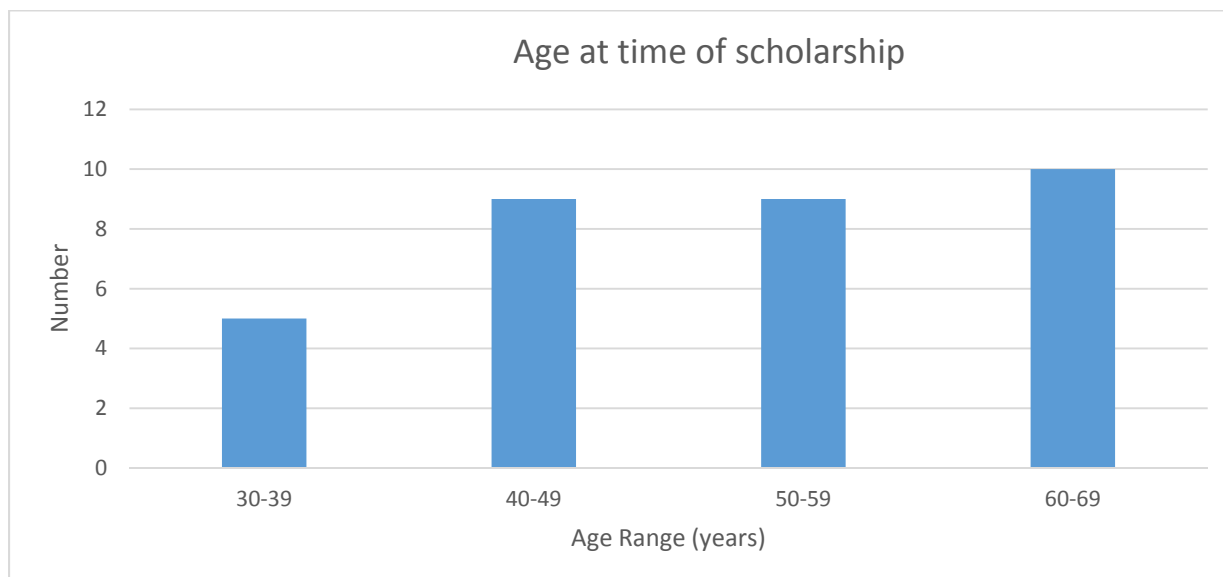
SCOR Visiting Scholars Approved in 2018

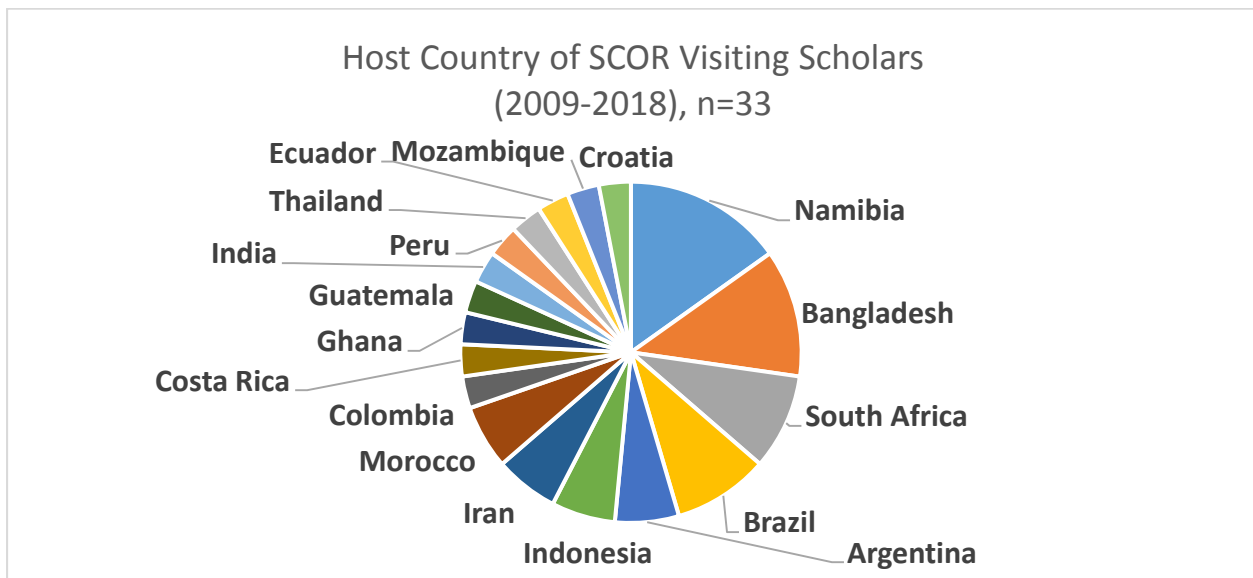
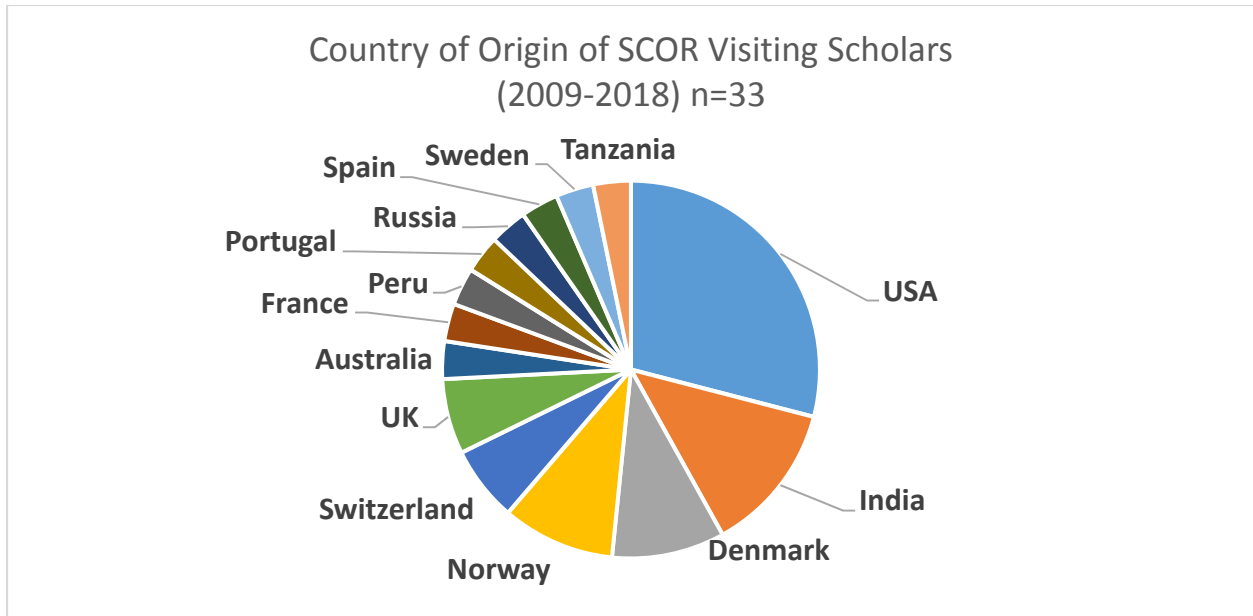
2018	Baban Ingole	India	Bangladesh	TBD	Benthic ecology and biological oceanography
2018	Cristian A. Vargas Gálvez	Chile	Ecuador	April-May	Ocean acidification lectures, lab, and field work
2018	Julia M. Diaz	USA	Morocco	May	Phosphorus biogeochemistry in the ocean
2018	Manuel António E. Malaquias	Norway	Mozambique	September	Curating marine biodiversity collections
2018	Kedarnath Mahapatra	Japan	Indonesia	11-26 August	Combining satellite and in situ data from the Indian Ocean
2018	Stuart P. Bishop	USA	Brazil	May-August	Physical oceanography
2018	Ana Širović	USA	Croatia	Spring 2019	Marine mammal bioacoustics

The seven SCOR Visiting Scholars approved in 2018 will be supported by US\$7,500 from the U.S. National Science Foundation, \$5,000 from the main SCOR budget, \$2,500 from the Intergovernmental Oceanographic Commission, \$1,650 from the Committee on Capacity Building's budget, and \$850 from crowdfunding.



The percentage applicants from 2009 to 2018 is 30% female to 70% male. The percentage of approved Scholars is the same.





The call for applications for 2019 Visiting Scholars will be made after the SCOR meeting in Plymouth. We will attempt to increase the crowdfunding portion in 2019. Ed Urban and Sophie Seeyave (POGO Executive Director) are preparing an article on the SCOR Visiting Scholar Program and POGO Visiting Professor Program for submission to *Oceanography* magazine.

5.3 POGO-SCOR Visiting Fellowships for Oceanographic Observations

Seeyave



Report on the 2017 POGO-SCOR Fellowship Programme and summary of selected candidates for the 2018 POGO-SCOR Fellowship Programme

This year saw the eighteenth fellowship programme jointly supported by POGO and SCOR. As the POGO Members had to be consulted on this year's budget expenditure at POGO's annual meeting at the end of January 2018, the announcement was posted on 13 February 2018, with a closing date of 9 April 2018.

A total of 29 applications were received this year (28 applications received in 2017). Applications were received from 15 countries (vs 16 countries in 2017). The highest number of application was received from India.

According to the combined available budget from POGO and SCOR, 4 candidates were selected, from Turkey, India, Indonesia, and Colombia.

The applications were screened independently by a committee of four, with representation from SCOR, POGO and other partners (including host supervisors of fellows from 2017). In making their selection, the committee considered the following factors:

- quality of the application;
- relevance of the application to the priority areas identified in the fellowship announcement;
- evidence that the training will lead to improved sustained observations in the region, or improved applications of such data;
- evidence that the training would lead to capacity-building with potential lasting impact on regional observations, and
- the need to maximise regional distribution of the awards.

POGO and SCOR commend the efforts from all the supervisors and colleagues at the various host institutions who agreed to devote time and energy required for the training. The programme would not have been viable without such efforts from prominent scientists and their teams.

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All the people involved in each fellowship for the 2017 cohort (the fellowship holder, the supervisor at the parent institute and the supervisor at the host institute) have been requested to submit short reports at the end of the training period. The reports that follow are from the 2017 fellowships. Both host and parents supervisors, as well as the fellows themselves, have indicated that these exchanges lead to effective capacity building at the host institute and facilitate longer term collaborations between the institutes concerned. All have concluded that the programme serves a useful purpose.

There is tremendous interest in the fellowship programme at all levels, both in oceanographic institutions in developing nations, as well as among leading scientists who are eager to contribute to this initiative. It is seen to be filling a niche in capacity building through specialised training that is not filled by intensive courses or by participation in scientific meetings. It helps improve the *esprit de corps* among oceanographic institutions around the world, and serves as a stepping stone to building collaborations.

Furthermore, the POGO-SCOR fellowship scheme is increasingly seen by other organisations as a model in capacity building, and similar schemes have been set up by other programmes based on the success of the POGO-SCOR model (e.g., EU projects, the Europe-Africa Marine Network, EAMNet; and the EUROMARINE consortium of European Networks of Excellence). The POGO Secretariat is often approached for help/advice on setting up similar fellowship schemes, or proposals to partner with other organisations.

Demography of Fellowships from 2018 Parent Institutions:

Turkey	Istanbul Technical University
India	Kerala University of Fisheries and Ocean Studies
Colombia	Universidad Nacional de Colombia at Medellín
Indonesia	Indonesia Agency for Meteorology, Climatology, and Geophysics (BMKG)

Host Institutions:

Germany	Helmholtz-Zentrum Geesthacht, Institute for Coastal Research
UK	Plymouth Marine Laboratory
Spain	Mediterranean Institute for Advanced Studies (IMEDEA)
USA	Lamont-Doherty Earth Observatory, Columbia University

Gender distribution

Male: 3
Female: 1

Demography of Fellowships from 2017

Parent Institutions:

Chile	University of Concepción
Nigeria	Federal University of Technology, Akure, Nigeria

India ESSO-National Centre for Antarctic and Ocean Research
 India Indian Institute of Technology, Bombay, India

Host Institutions:

Norway University of Bergen
 Laboratoire d'Etudes en Géophysique et Océanographie
 France Spatiales (LEGOS)
 UK The Scottish Association of Marine Science
 French Research Institute for the Sustainable Exploitation of the Sea
 France (IFREMER)

Gender distribution

Male: 2
 Female: 2

Reports from 2017 Fellows and their Host Supervisors



Louis Antonio Cuevas – Chile

Parent supervisor and institution: Dr. Cristian Vargas – University of Concepción, Chile. Host supervisor and institution: Dr Benjamin Pfeil – University of Bergen, Norway.

Fellowship period: 28/08/17 - 8/10/17

Topic: *Data Management and Analysis for the Essential Ocean/Climate Variable Inorganic Carbon/Carbonate System Parameters.*

Report from Fellowship holder, Louis Antonio Cuevas:

“I had the opportunity to carry out a POGO-SCOR Fellowship research stay at the Bjerknes Climate Data Centre (BCDC) at the Geophysics Department in the University of Bergen, Norway. During the research I had to work directly with Benjamin Pfeil (leader of the BCDC) and with every member of the BCDC, addressing different topics. Here is a short description of the different topics/training covered by the each member at BCDC and myself:/Benjamin Pfeil: Research infrastructures for ocean observing systems, FAIR principles (Findable, Accessible, Interoperable, and Reusable) for scientific data management, portals and data acquisition for programs such as Surface Ocean CO₂ Atlas (SOCAT), Global Ocean Acidification Observing Network (GOA-ON), and (GLODAP).

- Steve Jones: Concepts concerning data quality control and protocols for QuinCe.

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QuinCe is a new software that will allow to upload, process, and run quality control of surface ocean CO₂ data from ships and moorings.

- Camilla Landa: pCO₂ quality control for the Surface Ocean CO₂ Atlas (SOCAT). Archiving, publishing and distribution of georeferenced data at PANGAEA open access library.
- Christopher Bernard: Creation of metadata and protocols for GOA-ON. I also had meetings with Dr. Ingunn Skjelvan, researcher at the Integrated Carbon Observation System (ICOS) at the University of Bergen, to learn from the activities and station labeling procedures for the Voluntary Observing Ships (VOS) platforms already part of ICOS research infrastructure. Additionally, other activities (listed chronologically) were carried out during this research stay.
 - September 11-12, 2017 – DuraFET workshop. I participated in the workshop entitled “Best practices for Durafet-based ocean and laboratory pH time-series”, held at the Laboratoire d’Océanographie de Villefranche-sur-mer. During this workshop the use of Durafet sensors and SeaFET devices was revised and discussed to get accurate measurements of pH for time series studies and laboratory experiences. An extended part of this workshop was used to run accurate quality control and calibrations using the Chilean pH data generated by these sensors.
 - September 18, 2017 – I had the chance to present a seminar for the Geophysics Department and the Bjerknes Centre for Climate Research (BCCR) to spread the latest research efforts on carbonate parameters and ocean observation systems in Chile and Latin America, presenting the Latin American Ocean Acidification Network (LAOCA Network). The title of this seminar was “Latin American Ocean Acidification Network (LAOCA Network) and main inorganic carbon/carbonate system research in Chile”.
- September 29, 2017 – Visit to Aanderaa Data Instruments AS. Together with Benjamin Pfeil, we visited Aanderaa Data Instruments AS, company specialized in the generation of oceanographic sensors. During the visit the company presented the latest development and calibration protocols for pressure, conductivity, oxygen and pH sensors. Additionally, we observed the use of data loggers, real-time communication systems, buoys and mooring platforms.
- October 3-5, 2017 – EuroGOOS Conference. Operational Oceanography Serving Sustainable Marine Development, held in Bergen, Norway. I also had the opportunity to join this conference and talk with the scientists working on operational observing systems, observational networks, and also to discuss the latest technology associated to other monitoring platforms in Europe. Additionally, I joined two side events during EuroGOOS: ENVRIplus meeting, and JERICO-Next Join WP2-WP5 workshop”.

What applications of the training received do you envision at your parent institution?

“The MUSELS Centre at the University of Concepcion (parent institution) has started to monitor the carbonate parameters in different areas of the Chilean coastal zone, making an effort in the accuracy of the data generated. At the same time has started to compile this information to understand local and global process. The training received will be essential to produce an integrated understanding of the coastal variability of the carbonate parameters by running appropriated quality control procedures and appropriated management of the dataset

generated. Additionally, the parent institution is part of the Latin-American Ocean Acidification Network ([www. http://laoca.cl/en/](http://laoca.cl/en/)) where we also aim to produce appropriated and quality controlled dataset for the carbonate parameters, becoming a regional hub for the Global Ocean Acidification Observing Network (GOA-ON). As result, during this research stay, we have submitted a new collaboration proposal to the International Cooperation Program in Chile, where we (MUSELS Centre and BDCD) plan to hold a workshop in Latin America, Chile, to continue with the standardization of databases and data quality control for the carbonate system parameters”.

Please provide your comments on the Fellowship Programme (from Fellow).

“For this specific training, the POGO-SCOR program has helped me to start training and also to start the capacity building on the study of the carbonate system parameters using the long-time experience of BDCD in this area. The study of the marine carbonate system parameters (e.g., pCO₂, pH) still has low coverage in the ocean around Latin America, but different research groups have already started to measure and compile this information. The POGO-SCOR Programme has then already started the link between the global network and a regional network by supporting and facilitating the research stay in Norway. The Programme in this specific case worked on ocean observing systems and datasets, since we used time-series observations of relevant carbonate system parameters. Thanks to the POGO-SCOR Programme we will continue with this collaboration by setting up new training opportunities and collaborative workshop on the same subject”.

Is this exchange likely to lead to future collaboration with the trainee’s parent institution?

“Yes, to continue the collaboration, Antonio and BDCD staff submitted a new collaboration proposal to the International Cooperation Program in Chile. We plan to hold a workshop in Chile to continue with the standardization of databases and data quality control for inorganic carbon/carbonate system parameters. We are also in contact with Antonio and other members of his working group in Chile and we will continue to collaborate with our South American colleagues especially in the context of the Global Ocean Acidification Observing Network (GOA-ON). Within GOA-ON we need regional hubs as the Latin-American Ocean Acidification (LAOCA) Network that get access to data, ensure quality, consistency and documentation. Thus, an important aspect of this type of collaboration is to assure the continuation of the interaction between researchers and to extent the experience of the researchers to different partners”.

Please provide your comments on the Fellowship Programme (from host):

“The programme has helped to start a long-term collaboration and to start a link between a regional and a global network, as LAOCA and GOA-ON, respectively. In this specific case, 1.5 month was a perfect period of time to shown Antonio the main ideas and background about data management for the carbonate system parameters and to show him the different areas about the data management of essential marine carbonate system parameters. We would like to thank POGO-SCOR for funding Antonio’s research stay, giving us the chance to establish a closer collaboration with him and his network, and being able to learn from each other!”.

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Olusegun A. Dada – Nigeria

Parent supervisor and institution: Prof Kouadio Affian – Federal University of Technology, Akure, Nigeria.

Host supervisor and institution: Dr. Rafael Almar, Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS).

Fellowship period: 11/9/17-29/11/17

Topic: *Coastal evolution of the Gulf of Guinea and its ocean forcing.*

Report from Fellowship holder, Dr Olusegun A. Dada:

“My experience was awesome during the POGO-SCOR Fellowship training at d’Etudes en Geophysique et Oceanographie Spatiales (LEGOS), Toulouse, France. It avails me the opportunity of meeting relevant people in my field of specialization and also exposes me to different techniques and instruments that would be of greater help for my career. During the first week of the fellowship, I was fortunate to partake in a week-long workshop titled “Hydrology of the Niger River/Gulf of Guinea: scientific issues, operational issues, the contribution of spatial measurements and preparation for the future altimetry mission high-resolution SWOT”. During this workshop, I saw presentations from different scientists studying various aspects of the Gulf of Guinea basin using remote sensing technology. As part of the workshop, I was given the opportunity to ask questions and make contributions. The conference was an eye-opening on how ocean research could be carried out using advanced technologies. The following weeks after the workshop, my host (Dr Almar) introduced me to different groups in LEGOS, and I spent the next 4 weeks interacting with them on how to use different technologies for coastal observations and surveys, focusing on how to acquire, process and interpret data on ocean forcing (e.g. waves, wind, tides), and as well sea level change studies using satellite altimetry. I learned about how to calculate and model coastal-storm inundation elevations for the Nigerian section of the Gulf of Guinea, in order to identify areas that, both in present-day and future, are potentially affected by coastal hazards. The data acquired for running this model are astronomic tides generated from the global tidal model, wave parameters and beach slopes for calculating run up, and sea level anomaly generated from altimetry data. The beach slopes were derived from the combination of Sentinel-1 data and global tidal model. During the last 3 weeks of my fellowship, I joined the team of researchers, led by Dr Rafael Almar, on the littoral monitoring campaign in Capbreton, France coast of the SW North Atlantic Ocean, from 6 to 17 of November 2017 (www.insu.cnrs.fr/node/7675). The objective of the field experiment was to develop a new remote sensing data collection techniques that combine the opportunistic use of land-based "surf-cams" (View Surf network of video cameras installed on the coast for recreation) and the high-resolution and near-global optical satellite imagery (Pléiades satellite from CNES). The field experiment involved a survey of the coastal topography (zone of the coast above sea level) and the bathymetry (submerged part of the coast) and evaluation of the local variability at sea level. The data gathered during

this experiment will be analyzed to better understand of coastal sedimentary transport and the morphological evolution of the coastal zone as a complete integrated system.

Is this exchange likely to lead to future collaboration with the trainee’s parent institution?

“Definitely yes. Research is ongoing and will lead to 2 major papers, a permanent video system (offered by LEGOS) will be installed in the mud coast of Nigeria by the team of Dr Dada and will allow long term collaboration. Some potential proposals to international calls are envisaged, with other countries in the Gulf of Guinea”.



Divya David Thresyamma– India

Parent supervisor and institution: Dr Anil Kumar N – ESSO-National Centre for Antarctic and Ocean Research.

Host supervisor and institution: Prof Finlo Cottier - The Scottish Association of Marine Science.

Fellowship period: 13/11/2017 to 13/2/2018

Topic: *Arctic oceanography time series supporting model development.*

Report from Fellowship holder, Divya David Thresyamma:

“The training period had been utilized very well to understand the physical processes and the degree of similarity/difference of the time series physical data available from the IndARC and SAMS moorings at the inner and outer parts of Kongsfjorden. As part of the mooring analysis, I investigated a number of approaches to distinguish between changes in the oceanographic conditions through either (a) advective or (b) meteorological processes. In particular, the occurrence of Atlantic Water in the western fjords and coastal waters of Svalbard is of particular interest as it relates to the gradual “atlantification” of the Arctic (increases in heat and salt). Therefore, a quantitative index for how much the waters are influenced by Atlantic Water was developed which will provide a key measure for further investigations. This approach also considered how representative the moorings are from a regional perspective and investigated how reliable and relevant satellite derived sea surface temperature data are when integrating time series. Ultimately, I was also trained in numerical data processing to fully understand the driving process and variability in Atlantic Water advection. Further, all these will be helpful in ROMS realistic modelling runs which are ongoing in the parent institute in which I am involved.

Another area of training received was in utilisation of robotic technologies for remote data collection. SAMS has an expertise in using gliders and I got the opportunity to gain some knowledge and experience during their recent deployment of a Slocum glider in the Barents Sea, south of Svalbard. I could understand how gliders are used to support data collection in

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science projects as well as the practicalities of management and piloting of it with the help from the senior technician, Ms Estelle Dumont.

In addition to these, my visit to SAMS gave me an interesting opportunity to participate in a teaching module for Masters level students in professional skills. The modules in the course helped me in polishing my skills of scientific approaches, presentations and preparation of proposals and many more. This helped me to be part of the student community and to develop my knowledge of core professional skills.

What applications of the training received do you envision at your parent institution?

- A research paper will be prepared based on the work done during the training period.
- This collaboration and the host supervisor will be guiding my PhD program.
- There will be a potential collaboration on Arctic observational programs.
- I am presently a co-investigator of the project “Svalbard Integrated Observing System” which will be contributing to and provide a platform for further joint work.
- The training received in the glider operations will facilitate the implementation of a glider programme at parent institute.
- A continuation of the scientific collaboration in terms of more publications and projects together.

Please provide your comments on the Fellowship Programme (from Fellow).

“The fellowship paved the way to understand the current research techniques and methods in polar ocean sciences which is extremely useful and important for an early career scientist like me. I got various opportunities, through my host supervisor, during my fellowship tenure to interact with experts in different related fields. I firmly believe that the fellowship was a boon to boost and properly shape up my future career as a women observational oceanographer. I will always cherish the SAMS memories and experiences which I imbibed with enthusiasm. Further, I will be sharing my experiences and knowledge gained through this fellowship to my peers and collaborators. I am really honoured and grateful to the POGO-SCOR for providing me with this invaluable opportunity”.

Is this exchange likely to lead to future collaboration with the trainee’s parent institution?

“I think there is scope for further collaboration. In the immediate future there is a research paper that we will prepare based on Divya’s work at SAMS. There is also the potential for further involvement and supervision of her PhD program and we have bilateral discussions planned for that. Longer term, Divya and I discussed potential collaboration on Arctic observational programs. There is a current initiative call “Svalbard Integrated Observing System” which we will be contributing to and which will provide a platform for further joint work”.

Please provide your comments on the Fellowship Programme (from host):

“This is the first time I have become involved with the POGO Fellowship Programme. As the host institute it was very easy to engage with the application and the subsequent administration to permit the visit. I think there is great value for early-career researchers to pursue these Fellowships as a means of both increasing their skills through training but also developing institutional and international links. These can often be hugely formative and become the

bedrock of their careers. The resourcing of the Fellowship was good – again, minimising the burden on the host institute. I will be recommending this to my colleagues and networks”.



Ankita Misra – India

Parent supervisor and institution: Dr. Balaji Ramakrishnan, Indian Institute of Technology, Bombay, India.

Host supervisor and institution: Dr Bertrand Chapron –French Research Institute for the Sustainable Exploitation of the Sea (IFREMER), France.

Fellowship period: 08/10/17 - 06/01/18.

Topic: *SAR based bathymetry estimation for utilization in coastal models.*

Report from Fellowship holder, Ankita Misra:

“At IFREMER, France, I aimed to learn SAR based bathymetry estimation using the concept of wave transformation, which is a part of my doctoral research. Dr. Chapron introduced me to a technique where sun glint optical imagery could be used with the same principle as SAR to derive the wave characteristics. This was an exciting topic as it provided me with an opportunity to understand and interpret both optical and SAR imagery for wave transformation studies. During, this time Dr Chapron also encouraged me to write my own codes for the analysis which was an interesting learning curve for me. I constantly interacted with Dr. Frederic, who taught me the important principles of ocean wave Noughier characteristics and their interpretation in satellite imagery. I learnt the concept and properties of sun-glint imagery and subsequently applied it to map the various parameters of ocean waves such as wavelength, phase etc. This was very important for my PhD objective as I further intend to use this information for predicting the near-shore bathymetry for my study region in India”.

What applications of the training received do you envision at your parent institution?

“The main objective for this fellowship was to learn SAR based bathymetry estimation which is important from the perspective of completion of my doctoral research at IIT- Bombay. On successful completion of this research which I started at IFREMER I should be able to write a publication for a peer reviewed journal, which is currently my immediate target. In my group at IIT-Bombay, there are very few people who work on Ocean Remote Sensing and hence, apart from my doctoral studies, I am also involved in a number of other coastal management related project activities. The training I got through this fellowship will enable me to improve the quality of research I conduct in my parent institution. Moreover, I am positive that through my experience more students will be motivated to take up ocean remote sensing as their area of interest”.

Please provide your comments on the Fellowship Programme (from Fellow):

“The POGO SCOR 2017 fellowship happened for me at a time when I really needed a fellowship to visit IFREMER to work with Dr. Bertrand Chapron. This programme is extremely beneficial for early career researchers, who get an opportunity to visit an international lab to build on their scientific skills and expertise through this fellowship. Apart from that, the cultural exposure that comes with it makes it a memorable experience both professionally and personally. So, I would like to thank POGO SCOR for this funding initiative which ensures that young scientists have some unique scientific interactions with the best in the field of oceanography.

I am really glad that I got a chance to work with Dr. Chapron on this topic. Apart from the fact that he is an expert in satellite oceanography, he is extremely patient and encouraging towards his students. His profound knowledge is truly inspirational”.

Is this exchange likely to lead to future collaboration with the trainee’s parent institution?

“I have discussed the possibility of a journal paper with Ankita, on the completion of the research work she has carried out here at IFREMER. I have also encouraged her to continue this association and have ensured our support in the completion of her doctoral studies. Hence, I am positive that there will be some collaboration with IIT- Bombay, India and at least a joint publication in the near future”.

Please provide your comments on the Fellowship Programme (from host).

“I strongly believe this fellowship programme is very beneficial for young researchers, like Ankita. She wanted to visit IFREMER for a while to gather experience in satellite Oceanography which was finally possible through the POGO SCOR 2017 scholarship. The fellowship provided her the opportunity to interact with several researchers in the field of Ocean Remote Sensing and Physical Oceanography, gave her an exposure of current International research and also provided her with some direction to further her doctoral studies. I am sure this would help her not only in the completion of her PhD, but will also contribute to achieving her goal to be an expert in this field”.

5.4 NSF Travel Support for Developing Country Scientists**Urban**

SCOR has received support from the U.S. National Science Foundation (NSF) since 1984 to provide funding for SCOR capacity building activities. Most of the funds are used for travel grants for scientific meetings, although a portion are used for SCOR’s contribution to the POGO-SCOR Fellowship Program and the SCOR Visiting Scholars program. Travel grants are awarded to ocean scientists from developing countries and the former Soviet Union, Eastern Europe, and other countries with economies in transition, to enable them to attend international scientific meetings. A new three-year grant was approved in July 2017, running from 1 August 1 2017 to 31 July 2020. The amount of the award from NSF is \$75,000 per year.

About 77% of the grant funds are devoted to supporting the travel of scientists from developing countries and countries with economies in transition to ocean science meetings. The SCOR Committee on Capacity Building evaluates requests from meeting organizers for such support several times each year. After a meeting is approved, the organizers run a selection process and propose individual recipients for support. The PI checks the names of proposed recipients to

ensure they are from eligible countries and have not received similar support from SCOR for the past two years. Priority is given to applicants who are presenting a paper or poster at the meeting or to those who have some special expertise or regional knowledge to bring to a workshop or working group. Preference is also given to younger scientists. In general, care is taken to ensure that the recipients of SCOR/NSF funds are *active* scientists, and that they have not received similar support from SCOR in the previous two years. All travel grant recipients are informed that their support comes from SCOR and that it is made possible through NSF funding.

Requests come in throughout the year and the SCOR Committee on Capacity Building considers new requests between meetings. Forty-nine students and scientists from 25 countries were supported during the reporting period to attend 16 scientific meetings. The following requests were approved since the 2017 SCOR annual meeting:

Event	Location	Dates	Amount
1 August 2017 to 31 July 2018			
International Symposium on Understanding Changes in Transitional Areas of the Pacific (PICES)	La Paz, Mexico	24-26 April 2018	\$3000
4th World Conference on Marine Biodiversity (and IABO General Assembly)	Montreal, Canada	13-16 May 2018	\$3000
4 th International Symposium on the Effects of Climate Change on the World's Oceans (PICES, IOC, ICES)	Washington, DC	4-8 June 2018	\$3000
SeaBASS 2018: A Marine Bioacoustic Summer School (IQOE)	Durham, New Hampshire	8-13 July 2018	\$5000
42 nd COSPAR Scientific Assembly	Pasadena, USA	14-22 July 2018	\$3000
2018 SOLAS Summer School	Corsica, France	23 July-4 Aug. 2018	\$5000
SCOR Visiting Scholars	Various	various	\$7500
POGO-SCOR Fellowships on Operational Oceanography	Various	Various	\$10000
18 th International Conference on Harmful Algae (GlobalHAB)	Nantes, France	21-26 October	\$5000
1 2018 Summer Lecture Series: Frontiers in Ocean Optics and Ocean Colour Science	Villefranche-sur-Mer, France	25 June – 7 July 2018	\$5,000
Ramon Margalef Summer Colloquia - Ecology and Evolution through the lens of new omics approaches	Barcelona, Spain	9-13 July 2018	\$3,000
Regional Training Course: 'Practical Tools in Quantitative Fisheries Stock Assessment'	Pwani University, Kilifi, Kenya	16-26 July 2018	\$3,000
IMBeR ClimEco6 Summer School - Interdisciplinary approaches for sustainable oceans	Gadjah Mada University, Yogyakarta, Indonesia	1-8 Aug. 2018	\$5,000

The next review of requests will be conducted by the SCOR Committee on Capacity Building after the SCOR annual meeting.

5-16

5.5 Research Camps at University of Namibia

Urban

SCOR has supported “Research Camps” at the University of Namibia Henties Bay campus for the past 5 years, through funding from the Agouron Institute and now also through funding from the Simons Foundation. The 5th Camp was held on 16 April-11 May 2018. These camps have brought together graduate students, post-docs, and instructors from Namibia, other African countries, and other countries of the world to learn ocean science through doing research together. The camps bring together resources from the University of Namibia, the national fisheries agency, participants, and the Agouron Institute and Simons Foundation.



RGNO - Regional Graduate Network in Oceanography



**Integrated Earth Systems Sciences - Oceans
Biogeochemical Oceanography
in Upwelling Ecosystems**

**5th African Ocean Discovery Camp for research-based Training
on the Sustainable Use and Scientific Management of Marine Ecosystems**

April 16 – May 11, 2018

**at the University of Namibia's Sam Nujoma Research Center in Henties Bay and
Namibia's National Marine Information and Research Center in Swakopmund**

**For dedicated early career researchers who care about the Oceans: PhD candidates and honors
MSc students majoring in one of the ocean science fields, professors, lecturers and active young
scientists holding an equivalent advanced degree with specialization in oceanography.**

What are Ocean Discovery Camps	Opportunities to collaborate in an interdisciplinary research project with guidance and supervision by local and international scientists at the SamNujoma Campus and possibly in internships abroad.
Goals	To learn about current research projects and to develop future research directions for a better understanding of the consequences of local and global environmental alterations for the functioning of the Benguela Current Upwelling Ecosystem.
Scope	Interactions between chemical, biological, physical and geological topics related to marine biogeochemistry and ecosystem research. Molecular and other modern techniques applied to understanding biogeochemical processes. Environmental variability and regulation of microbially driven geochemical nutrient cycles and consequences for ecosystem sustainability.
Course Structure	Work at sea and along the coast and analyses in the laboratory. Sampling, sample preservation designing and executing experiments, computer-supported exercises, lectures, paper discussions, model development. Symposium day: Presenting research findings, sharing knowledge, collaborating in further project developments.
Course Location	1-2 days "Floating University" on the R/V MIRABILIS (operated by the Namibian Ministry of Fisheries and Marine Resources). Three weeks on land at the Sam Nujoma Campus, the University of Namibia's regional Center for Research and Training in Oceanography in Henties Bay, and at Namibia's National Marine Information and Research Center in Swakopmund.
Language	English
Course Costs	9500 NAM\$ or equivalent in US\$. A limited number of fellowships is available for qualified and passionate applicants from economically developing countries.
Application	Follow instructions given on the Course Website. http://www.microeco.ethz.ch/rgno_namibia_18/RGNO_Namibia_18.html
Application Deadline	March 12, 2018. Acceptance letters will be sent electronically within 10 days.
Further Information	From the Course Website (see above) From the Course Coordinator Dr. Chibo Chikwilitwa cchikwilitwa@unam.na

Sponsors



Each Research Discovery Camp concludes with a one-day symposium hosted by NatMIRC in Swakopmund, on the research activities conducted as part of the Camp. The program for this year's symposium follows.



5th Regional Graduate Network in Oceanography (RGNO)

Open Research Symposium in the Nat MIRC Auditorium on May 9th 2018

With Presentations offered by the 2018 RGNO Students, Instructors and invited Guest Speakers

Scientific Knowledge applied to the Sustainable Use of Coastal Upwelling Ecosystems

http://www.microeco.ethz.ch/rgno_namibia_18/RGNO_Namibia_18.html#top

Guests are welcome. Please sign up with Chibo Chikwililwa

Time	Speaker / Affiliation	Presentation title
09h00	Welcome Tea	
09h15	Anja Kreiner (NatMIRC, Swakopmund, Namibia). Welcome from NatMIRC and Opening of RGNO Symposium 2018	
Session 1 chaired by Richard Horaeb		
09h15	Hilkka Ndjaula (UNAM, Henties Bay Campus, Namibia)	Welcome from the Henties Bay Campus of UNAM Can biogeochemical determinants explain the variation in fish recruitment processes?
09h45	Percy Chimwamurombe (Namibian University of Science and Technology, Windhoek, Namibia)	Isolation of marine Actinomycetes from the Atlantic ocean and extraction of biometabolites: a NUST bioprospecting proposal
10h15	Sam Mafwila (SANUMARC, Henties Bay, Namibia)	Ecological consequences of bottom trawling on demersal fish and benthic macro-fauna
10h45	Deon Louw (NatMIRC, Swakopmund, Namibia)	High Phytoplankton blooms in the Northern BUS
11h15	Johannes Iitembu (UNAM, Henties Bay Campus, Namibia)	UNAM's new Master program in Oceanography will start in February 2019
11h30	Tea break	

Session 2 chaired by Volker Mohrholz

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| 11h50 | Akhona Madasa (University of Fort Hare, South Africa) | The temporal variability of ecosystem state parameters derived from the 23°S mooring station |
| 12h10 | Elisia Gottlieb (Namibian University of Science and Technology, Windhoek, Namibia) | Effect of environmental conditions on the diurnal vertical migration of zooplankton |
| 12h30 | Maureen Kombo (Kenya Marine and Fisheries Research Institute, Kenya) | Assessing the influence of environmental parameters on DIC uptake by phytoplankton |
| 12h50 | Elena Bruni (ETH Zürich, Switzerland) and Mohammed Elsafi (Alexandria University Egypt) | Isolation and molecular identification of aerobic bacteria from sedimenting and sedimented degradation aggregates |

13h20 Lunch

Session 3 chaired by Deon Louw

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| 14h20 | Kaarel Lumiste (University of Tartu Estonia) | Remobilization of mercury and other trace metals from sediments |
| 14h40 | Jacques Siyou Noukimi (The University of Douala, Cameroon) and Mohammed Elsafi (Alexandria University Egypt) | Mercury bio-accumulation in marine plankton off the coast of Walvis Bay, Namibia |
| 15h10 | Falilu Adekunbi (Nigerian Institute for Oceanography and Marine Research, Victoria Island, Lagos, Nigeria) | Preliminary method for Coccolithophore determination in seawater along a transect off the coast of Namibia |
| 15h30 | Ismail Bessa (University Hassan II, Casablanca, Morocco) | Pore-water geochemical evidence of Anammox in Benguela shelf sediments |

Session 4 chaired by Chibo Chikwilwa

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| 15h50 | Felipe Sales de Freitas (Organic Geochemistry Unit, School of Chemistry, University of Bristol, UK and Science without Borders, CAPES, Brazil) | Quantifying diagenetic processes in marine sediments |
| 16h10 | Volker Mohrholz (IOW, Institut für Ostseeforschung, Warnemünde, Germany) | Recent findings leading to future projects in the Northern Benguela Ecosystem |
| 16h40 | Summary: Kurt Hanselmann | Achievements during 5 years of RGNO and Expectations for RGNO-VI in 2019 |
- 17h00 End of Open Symposium**

