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5.0 CAPACITY-BUILDING ACTIVITIES

5.1 SCOR Committee on Capacity Building

Ittekkot

The 2006 SCOR meeting approved terms of reference for a SCOR Committee on Capacity Building, whose primary purposes are to oversee all of SCOR's capacity-building activities and to help the SCOR Secretariat manage these activities. The approved terms of reference follow:

- 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.

The membership of the committee was modified in mid-2011 to create a tighter linkage between the committee and the SCOR Executive Committee.

Chair:

Venu Ittekkot (Germany)

Other Members:

Sükrü Besiktepe (Turkey)

John Compton (South Africa and SCOR Executive Committee)

Missy Feeley (USA and SCOR Executive Committee)

Ilana Wainer (Brazil and SCOR Executive Committee)

Jing Zhang (China and IMBER)

Hal Batchelder (PICES)

A subgroup of the committee can now meet in conjunction with annual SCOR meetings at little extra cost to SCOR, making it possible for any committee recommendations to SCOR to be acted on immediately. The committee will meet on Oct. 20 in Halifax, just prior to the SCOR annual meeting, to review all SCOR capacity building activities.

Ed Urban participated in a meeting funded by the Asia-Pacific Network for Global Change Research (APN) in Shanghai, China in early August 2012 to discuss ocean science capacity building in the Asia-Pacific region. Jing Zhang hosted the meeting.

A small workshop is being planned for 5-6 November 2012 at Henties Bay, Namibia to discuss capacity building in southern Africa. Representatives have been invited from international organizations (SCOR, IOC, ICSU, POGO) and nations in southern Africa (Namibia, South

Africa, Angola, and Mozambique) to share information about current activities and potential new activities. The meeting is being hosted by the University of Namibia, to which SCOR has sent Kurt Hanselmann as a SCOR Visiting Scholar twice. Hanselmann is continuing to work with the university, including helping to supply university laboratories with equipment gathered in Europe and sent south on German research vessels.

5.2 SCOR Visiting Scholars

Ittekkot

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.

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 idea of this program is to regularly send ocean scientists interested in short-term visits to developing countries. 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. The participating scientists 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.pdf. The call for applications for 2012 Visiting Scholars will be issued around 1 October 2012.

Recent and Planned SCOR Visiting Scholars

Year	Name	Home Country	Host Country	Purpose
2011	Ali Pourmand	USA	Iran	Help with paleo-oceanography workshop
2011	Kurt Hanselmann	Switzerland	Namibia	Teaching and mentoring on bio and chem. oceanography

2012	Rene Swift	UK	South Africa/Namibia	Training on tracking of marine mammals with passive acoustics
2012	Jacob Larsen	Denmark	Ghana	Training on HAB identification
2012	Geoff Millward	UK	Thailand	Teaching on fundamental physical and chemical processes in estuaries and coastal waters.
2012	Alice Newton	Norway	Morocco	Teaching and Mentoring on topic of coastal lagoons
2013	Lisa Beal	USA	South Africa	Teaching on coastal physical obs. and modeling

Three SCOR Visiting Scholars were selected for 2013, with another leftover from a previous year, and one that needed to postpone their assignment until 2013. Geoff Millward was able to do some advance work for his assignment through a trip to southeast Asia in early 2012 and made contacts both for his assignment later in 2012 and also for potential re-entrance of Thailand to SCOR membership.

Some observations about the program so far:

- There is an untapped pool of individuals—from early-career scientists to retired scientists—who are passionate about teaching and mentoring, and interested in working in developing countries for a short period. So far, five individuals have successfully completed their assignments, with three more expected this year, and one who was delayed from this year to next.
- Although the cost of the program is modest, its outcomes have been significant, in terms of students helped and new contacts made.
- The requirement for hosts to provide lodging does not seem to make it difficult to find hosts.
- Not every applicant can be matched and sometimes successful matches fall through due to political/safety/timing issues. We need to be flexible in timing and willing to admit that we will not have a 100% success rate in matching approved applicants.

One SCOR Visiting Scholar who will be serving later this year, Geoff Millward, made an exploratory trip to southeast Asia earlier this year and made contacts in Thailand for his teaching time and more generally for SCOR. Another example of a SCOR Visiting Scholar for 2012 comes from the planned visit by Jacob Larsen of the University of Copenhagen to the University of Ghana to give a training course on identification of harmful algal blooms. Larsen is an experienced trainer and has worked with the SCOR-IOC GEOHAB program. SCOR has

occasionally sponsored travel of an individual from Ghana to a scientific meeting, but this will be the first SCOR Visiting Scholar to Ghana. The program for the training program follows.



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The planned 2-weeks workshop consists of two parts: A one-day open seminar and a 9-day training course in identification of harmful algae. All stakeholders with an interest in harmful algae including the press are invited for the first day while the training course is limited to 12 participants.

Opening Ceremony and Open Seminar

Monday, 8 Oct

- 8:30 Registration
- 9:00 Opening prayer
- 9:05 Introduction of Chairman / Chairman's response
- 9:10 Welcome address / Opening statement by Dean of Science
- 9:20 Opening Statement by Dr. Elvis Nyarko, Head of Department of Marine and Fisheries Sciences

Short statements by:

- 10:10 Minister of Environment, Science and Technology
- 10:20 Minister of Education
- 10:30 Minister of Energy
- 10:40 Minister of Water Resources, Works and Housing
- 10:50 Break for Photographs

Short presentations by:

- 11:00 Mad. HawaBintYaqub (MFRD): Macro-algal bloom along the western coast of Ghana
- 11:10 Mr. DeGraft – Johnson (CSIR): Presence of *Sargassum* sp. in the coastal waters of Ghana
- 11:20 Dr. Gloria Aduko (CSIR): Cyanobacteria in freshwaters in Ghana

Lunch break, 12.00-14.00

Presentations, continued:

- 14.00 Dr. Jacob Larsen: Biology of harmful algae
- 14.30 Mr. Bennet Atsu Foli: Impact of water quality on micro-algal bloom in the Coastal waters of the Western Region of Ghana
- 15.00 Dr. Jacob Larsen: Mechanism and Epidemiology of Shellfish poisonings and Ciguateric Fish Poisoning



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Training course in Harmful Algae, 12 participants		
	Morning, 9.00-12.00	Afternoon, 13.30-16.30
Tuesday, 9 Oct	Lecture and microscope demonstration: harmful raphidophytes (cultures) Lecture and microscope demonstration: harmful dictyochophytes (cultures)	Lecture and microscope demonstration: unarmoured dinoflagellates (cultures) Lecture and microscope demonstration: harmful haptophytes (cultures)
Wednesday, 10 Oct	Lecture and microscope demonstration: Prorocentrum	Lecture and microscope demonstration: Dinophysis
Thursday, 11 Oct	Lecture and microscope demonstration: Harmful gonyaulacales: Pyrodinium, Alexandrium, and others	Benthic dinoflagellates: Gambierdiscus, Ostreopsis, Coolia
Friday, 12 Oct	Lecture and microscope demonstration: Cyanobacteria	Lecture and microscope demonstration: Pseudo-nitzschia
Saturday, 13 Oct	Free	
Sunday, 14 Oct	Free	
Monday, 15 Oct	Monday 9-10: Lecture on methods and sampling techniques 2-day sampling excursion	
Tuesday, 16 Oct		
Wednesday, 17 Oct	Preparation and microscopy of samples	
Thursday, 18 Oct	Preparation and microscopy of samples, continued Lecture on culture work	
Friday, 19 Oct	Evaluation and discussion of future collaboration	

5.3 Regional Graduate Schools of Oceanography and Marine Environmental Sciences (RGSO) *Ittekkot*

Design principles for a regional graduate network of oceanography can be found at http://www.scor-int.org/RGSO_Design_Principles.pdf. The ideas have not yet been implemented, but the April 2011 meeting of ocean science organizations in Izmir, Turkey was partially designed to ascertain the interest of countries in the Middle East/North Africa region in this concept. Travel in the region is difficult at this time, but those participating were enthusiastic about the idea of working together in the region on graduate education.

5.4 POGO-SCOR Visiting Fellowships for Oceanographic Observations *Urban*

Report on the 2012 POGO-SCOR Fellowship Programme

This year saw the twelfth fellowship programme implemented using POGO funds with supplementary financial support from SCOR. The application process was brought forward this year, to allow more time for applications, and to ensure that all fellowships were conducted during 2012. The announcement was posted on 16 November 2011, with a closing date of 15 January 2012.

This year saw a total of 75 applications, which was 38 more than the previous year and 53 more than in 2010. This was possibly a result of a broader advertisement (making use of the NF-POGO Alumni Network for Oceans, in particular), combined with the longer application period. Applications were received from 32 countries, which was 11 more than the previous year.

The 12 selected candidates hail from around the world, namely Russia, Poland, Cape Verde, South Africa, Kenya, Bangladesh, China, Chile and Mexico. The host institutions are also located in a wide variety of countries (Belgium, Germany, Denmark, Norway, UK, France, Italy, Australia and USA).

The applications were screened independently by a committee of six, with representation from SCOR and POGO. 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.

This year, twelve fellowships were offered to oceanographers from developing countries and countries with economies in transition. One successful candidate from South Africa received a scholarship from the University that she had planned to visit for her fellowship; therefore, it was

no longer appropriate for her to receive support from POGO. The POGO Executive decided to find a replacement and the next most highly ranked candidate after the initial cut-off line enthusiastically accepted the award.

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.

All the people involved in each fellowship (the fellowship holder, the supervisor at the parent institute and the supervisor at the host institute) were requested to submit short reports at the end of the training period. A number of reports are expected to be received by the end of the year, but those received so far have been enthusiastic. They indicate that these exchanges should lead to effective capacity building at the host institute and facilitate longer term collaborations between the institutes concerned. All conclude that the programme serves a useful purpose.

There is tremendous interest in the fellowship programme at all levels, both in the oceanographic institutions of the 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 up with other organisations.

Demography of Fellowships

Parent Institutions of Successful Candidates:

Bangladesh	University of Chittagong
Cape Verde	CVOO - Instituto Nacional de Desenvolvimento das Pescas
Poland	University of Warsaw
Chile	University of Concepcion
South Africa	University of Cape Town
Kenya	Kenya Meteorological Department
China	First Institute of Oceanography
New Zealand	University of Auckland
Russia	P.P. Shirshov Institute of Oceanology of the Russian Academy of Sciences
China	National Marine Environmental Forecasting Centre
Poland	Institute of Oceanology, Polish Academy of Sciences
Mexico	The National Commission for the Knowledge and Use of Biodiversity (CONABIO)

Host Institutions:

Italy	University of Ferrara
Germany	GEOMAR Helmholtz Centre for Ocean Research Kiel
UK	University of East Anglia
France	Observatoire Océanologique de Banyuls sur Mer
UK	British Antarctic Survey
Australia	Centre for Weather and Climate Research, Bureau of Meteorology & CSIRO
USA	NOAA/Pacific Marine Environmental Laboratory
Belgium	Flanders Marine Institute
USA	University of Rhode island
Denmark	Danish Meteorological Institute
Norway	University of Nordland
USA	University of South Florida

Gender distribution

Female: 4

Male: 8

2012 Fellows



Elizandro Lima Rodrigues – Cape Verde

Parent supervisor and institution: Dr Óscar Fonseca Melício, CVOO - Instituto Nacional de Desenvolvimento das Pescas, Mindelo, Cape Verde.

Host supervisor and institution: Dr Arne Körtzinger, GEOMAR, Germany.

Fellowship period: April 1 to July 1 2012 (3 months)

Topic: Laboratory and State-of-the-Art Training for Sustained Oceanographic Observations at the Cape Verde Ocean Observatory (CVOO)



Elizandro Rodrigues is a graduate student of Marine Biology and Fisheries at the University of Cape Verde (Uni-CV) in Mindelo, São Vicente Island. He started in 2008 and aims to achieve his degree this year (Licentiate equivalent to B.Sc.). He is currently doing a curricular course at the National Institute of Fisheries Development (INDP) in Mindelo, São Vicente, Cape Verde, which is the logistical base of the CVOO (Cape Verde Ocean Observatory). This enables him to get excellent insight into the management of the observatory on a day-to-day basis.

The establishment of the CVOO commenced in 2004 and has been extended permanently since. In order to assure the long-term management of the observatory it is required that there be sufficient manpower, both in Germany and Cape Verde. Elizandro wanted to be introduced to the handling of state-of-the-art instrumentation and techniques for measuring and analysing physical and biogeochemical parameters. This opportunity will be an asset to his future research and enable him to work in the laboratory of the CVOO and become a full member of the CVOO team in close cooperation with his host institution in Kiel, Germany.



Mohammad Uddin – Bangladesh

Parent supervisor and institution: Dr Mohammad Zafar, Institute of Marine Sciences and Fisheries, University of Chittagong, Chittagong, Bangladesh.

Host supervisor and institution: Dr Paolo Ciavola, University of Ferrara, Italy.

Fellowship period: April 23 to July 15 2012 (3 months)

Topic: Coastal observation and modelling.



Since October 2011 Mohammad has been enrolled in a PhD programme aiming at flood early warning system development for a number of case study sites on the eastern GBM Delta.

In this first part of his research, he is becoming familiar with suitable coastal morphological and hydrodynamic modelling tools relevant for the coastal area of Bangladesh which is very prone to cyclonic storm surges and flooding. Remote sensing and GIS are also some of the major tools to be used for the collection and management of bathymetric, topographic, and hydrographic data for his PhD area. This information will assist him in understanding the presence of trends in the changes of the eastern BGM delta coast due to historical storm events and flooding.

The training was developed along three main lines:

- 1) Competence in GIS and Remote Sensing data processing. The candidate will attend the course in Techniques for Remote Sensing in Earth Sciences given by the supervisor during the second semester for the Master in Earth Sciences. He will also attend a same level course in River Dynamics to develop competence on processes at river mouths.
- 2) Competence in field data collection. The candidate will learn how to install, maintain, and interpret data from tide gauges. He will also learn how to undertake coastal surveys using DGPS and traditional topographic equipment (e.g., Total Stations).
- 3) Competence in numerical modelling. The candidate will learn the basics of model set-up and compilation for simulating hydrodynamics using the X-beach model.

Following the fellowship it is planned that the host supervisor will visit the trainee in his own country to help him set up a coastal monitoring programme and an early warning system for surges. It is envisaged that the tutor will apply at a later stage for a POGO fellowship or for EU funding to spend time in Bangladesh with the trainee.



Dariusz Baranowski – Poland

Parent supervisor and institution: Prof. Szymon Malinowski, Institute of Geophysics, University of Warsaw, Warsaw, Poland.

Host supervisor and institution: Dr Adrian Matthews, University of East Anglia, UK.

Fellowship period: June 7 to August 7 2012 (2 months)

Topic: Air-sea interactions during MJO events in daily to intraseasonal timescales.

Dariusz's research focuses on air-sea interactions in the tropics, in particular on oceanic mixed and warm layers. He studied interaction between tropical cyclones and the ocean in the Western Pacific and Indian oceans. Argo floats were used to study climatology of ocean cold wakes associated with tropical cyclones during his M.Sc. He also has experience with numerical models of both ocean and atmosphere, and developed tools based on Argo profiles and other observations to validate U.S. Navy COAMPS model and conducted numerical experiments with ocean mixed-layer models (Price-Weller-Pinkel type). In 2011, he participated in a field project related to Madden Julian Oscillations - DYNAMO, together with Dr Adrian Matthews from the University of East Anglia (UEA). He now focusses on analysis of data collected, including from Argo. To succeed, he needs to develop a set of analytical skills based on the tools he's familiar with: upper ocean profiles and models. This requires training in data acquisition, data management, quality control, datasets homogenization and analysis of daily to intraseasonal signals in the ocean.

The training consisted of SeaGlider piloting, quality control, management techniques, and analysis of the data. Realisation of this project will contribute to overall goal of understanding of how ocean response contributes to the Madden Julian Oscillation initialization. This training will benefit the fellow's research through the development of new skills, as well as contributing to his Ph.D. thesis. It will help with data merging with other existing in-situ datasets such as Argo floats, nearby ship and buoys data as well as state-of-the-art coupled COAMPS models. This combined dataset will provide a unique opportunity to study air-sea interactions on timescales from daily to intra-seasonal. The scholarship will provide seed money for subsequent interaction between the UAE and University of Warsaw on coupled ocean-atmosphere problems including joint publications as well as multidisciplinary research on atmosphere-ocean interactions.



Claudia Soraya Muñoz – Chile

Parent supervisor and institution: Dr Camila Fernandez, University of Concepcion, Concepción – Barrio, Chile.

Host supervisor and institution: Dr Fabien Joux, Observatoire Océanologique de Banyuls sur Mer, France.

Fellowship period: June 25 to August 27 2012 (2 months)

Topic: Use and calibration of the PUV2500 profiler radiometer (Visible and UV radiation) at the center of oceanology of Banyuls sur Mer (France, LOMIC UMR CNRSUPMC).

Since 2010, Claudia has been working on the International Associated Laboratory in Marine Biogeochemistry at University of Concepción, Chile. The lab is mainly focussed on the response of microbial communities involved in the nitrogen cycle to environmental change in the central



southern part of Chile (36°S). Currently, her lab is working on the effect of solar (visible and UV) radiation on marine nitrifying communities and on the effect of UV radiation on organic matter degradation in the ocean. For this they use a multi-spectrum radiometer (Grobel, Germany ®) with automatic acquisition card that allows them to follow the incident radiation in the water column of the Bio Bio region, Chile. They also perform experiments with a UV irradiation system. One of the main constraints of their project is their limited capacity for estimating the penetration of incident radiation in the ocean. Their

current system allows a 1m depth measurement in the water column and it is therefore important to explore new technologies. The PUV2500 spectroradiometer currently available at Banyuls sur Mer is a high-frequency, powerful tool that will improve our observational and survey capabilities. The training will be applied on their own system via technology transfer as field measurements in Chile are planned for 2013 with the same instrument.

The main objective of this training at the Banyuls Oceanographic Center is to complement Claudia's expertise in the area of solar-UV radiation monitoring. The international Associated laboratory MORFUN between France and Chile promotes technological transfer that will allow measuring, for the first time, the penetration and effect of solar radiation in waters of central southern Chile, one of the most impacted areas by incident UV due to sustained stratospheric ozone decrease. Her current line of work involves the use and interpretation of data obtained through a multispectrum radiometer with limited penetration capacity in the water column. It is therefore likely that the current monitoring survey is underestimating the impact of UV radiation in the marine environment. The use in 2013 of the PUV2500 spectroradiometer in Chilean waters will open a new line of research in this system. Her training in this technique will largely contribute to the success of this technology transfer.

The program of this training includes 1) Calibration and data acquisition using the PUV2500 spectroradiometer in marine waters; 2) VIS-UV data treatment and interpretation; 3) Profiling and high-frequency monitoring; 4) trouble shooting and electronic functioning of optical instruments; 5) Experimental applications of PUV2500 in the frame of time-series observations. Field work will be conducted in the MOLA Time Series of OOB and in the framework of the project AMMONITE (ammonium and nitrite coupling in the euphotic zone, Fernandez C and Joux F, PIs).



Anne Treasure - South Africa

Parent supervisor and institution: Dr Isabelle Ansorge, Department of Oceanography, University of Cape Town, Cape Town, South Africa.

Host supervisor and institution: Dr Eugene Murphy, British Antarctic Survey, UK.

Fellowship period: Aug 11 to Sept 25 (1.5 month)

Topic: Ecosystem responses to the shifting sub-Antarctic Front (SAF) in the inter-island region of the Prince Edward Islands: a modelling approach.

Anne's research aims to use an ecosystem approach to model the impacts of the shifting sub-Antarctic Front (SAF) on the biological systems in the inter-island region of the Prince Edward Islands (PEIs). The SAF displays a high degree of latitudinal variability due to the southwards migration of the Antarctic Circumpolar Current (ACC) in response to global warming. Changes in frontal dynamics are likely to alter both species distribution and total productivity within the Southern Ocean.

The PEIs provide an opportunity to investigate these processes due to their location between the main frontal systems bordering the ACC and their relatively easy accessibility from South Africa. While studies have already indicated impacts to chlorophyll concentrations, phytoplankton, zooplankton, fish and top predators, an ecosystem approach has not yet been implemented to model these impacts. In order to do this, she needs to receive training and guidance on how to build and analyse ecosystem models.

Anne would like to receive training in ecosystem modelling, including how to build and use models that can include both biological (from phytoplankton to top predators) and physical data. She needs to learn how to build optimum models and how to use the associated software. This will benefit her current research enormously, as the root of her research question lies with using a suitable ecosystem model, and the quality of her research output relies on how well she can build such a model. She would like to continue with this field of research into the future, so learning how to build models properly at this early stage of her career will be very beneficial, and will improve the quality of any future output.

This project will promote collaboration between scientists both nationally, within South Africa, and internationally. Due to the nature of the project, she will need to establish collaborations between various research groups and universities within South Africa to collate the physical and biological data. International collaborations between South Africa and the United Kingdom (specifically the British Antarctic Survey) will also be established.



John Mungai – Kenya

Parent supervisor and institution: Dr Samwel Marigi, Kenya Meteorological Department, Nairobi, Kenya.

Host supervisor and institution: Dr Gary Brassington, Ocean & Marine Forecasting Group, Centre for Weather and Climate Research, Bureau of Meteorology & CSIRO, Australia.

Fellowship period: August 20 – Sept 14 2012 (1 month)

Topic: Ocean Modelling using Regional Ocean Modelling System (BlueLink/ROMs), HYCOM and

Wave Watch-III Models for Operational Marine Forecasting of the Western Indian Ocean.

John is involved in operational weekly forecasting of the Kenyan coastal ocean which is part of the Western Indian Ocean marine area. He is responsible for issuing state-of-the-sea forecasts indicating significant wave heights, currents, winds, visibility, and precipitation.

His requirements would be an improved understanding of ocean modelling, model initialisation from observations and post-processing of ocean model outputs using tools such as Matlab, Integrated Data viewer (IDV), and Ocean Data Viewer (ODV). The training will also provide an opportunity to learn about operational ocean forecast systems and their interpretation. In particular a focus will be on configuring a model initialisation from hindcast and forecast data products from an operational ocean forecasting system.

John would like to undertake training on how to integrate/apply Indian Ocean Observing System (IndOOS) Data, such as from the Research Moored Array for African–Asian–Australian Monsoon Analysis and Prediction (RAMA) and other regional programmes such as ASCLME, for enhanced predictive capability using numerical models (e.g., BlueLink (BOM/MOM4), ROMS, HYCOMS, Wave Watch III) for the Kenyan coast and the western Indian Ocean region. The aim is to develop capacity in the use of remote sensing data in marine forecasting applications, for example, through the use of AMSR-E, Argo, and current meters to verify model forecasts. This will greatly improve his skills for his current work, that is, preparing and issuing of marine forecasts for part of the western Indian Ocean. This fellowship would further boost his involvement in the in-region development of Model Development teams (MDTs) through creation of partnerships between the hosting institution and his parent institution. Another aim is to develop linkages between offshore-nearshore long-term observations for greater involvement by and benefits to stakeholders such as for natural resource management (e.g., fisheries, tourism), disaster risk characterization and reduction (e.g. floods, droughts and cyclones), biodiversity conservation (e.g. coral bleaching), and others.



Huiwu Wang – China

Parent supervisor and institution: Dr Weidong Yu, First Institute of Oceanography, State Oceanic Administration, Qingdao, China.

Host supervisor and institution: Dr Michael McPhaden, NOAA/Pacific Marine Environmental Laboratory, USA.

Fellowship period: Aug 31 to Nov 30 2012 (3 months)

Topic: Deep Ocean Buoy Observations.

Huiwu has been working on the First Institute of Oceanography (FIO)'s Indian Ocean project since 2008, under which the FIO's Bailong buoy at (8°S, 100°E) and a sub-surface ADCP mooring at (8.5°S, 106.75°E) are maintained. Since NOAA/PMEL is the leading agency on tropical buoy observation, he wishes to be trained there on the advanced buoy technology, in situ operation, data analysis, and research application.

He would like to learn from the several decade's experience in tropical ocean buoy observation accumulated at NOAA Pacific Marine Environmental Laboratory (PMEL). The proposed scope of training consists of buoy technology briefing, best practice of data quality control, and scientific implication of the buoy data. NOAA/PMEL is now leading the development of Research Moored Array for African-Asian-Australian Monsoon Analysis and Prediction (RAMA) after its successful implementation of TAO/TRITON in the Pacific Ocean and PIRATA in the Atlantic Ocean. As an emerging force, FIO recently also contributes to RAMA through its maintaining one subsurface ADCP mooring and one surface buoy in the tropical Southeastern Indian Ocean. His potential training at NOAA/PMEL will enhance FIO's contribution to RAMA. Also, one China-U.S. joint program on Indian-Southern Ocean Climate Observation, Reanalysis and prEdiction (ISOCORE) is being discussed and expected to be launched in 2013, where FIO and PMEL will both play a critical role. His training at PMEL will surely benefit this near future collaboration.



Zeenatul Basher – Bangladesh

Parent supervisor and institution: Dr Mark Costello, Leigh Marine Laboratory, University of Auckland, Auckland, New Zealand.

Host supervisor and institution: Dr Ward Appeltans, Flanders Marine Institute, Belgium.

Fellowship period: September to October 2012 (1 month)

Topic: Capacity building for deploying and developing regional marine biodiversity database portals.

Basher is using location records from surveys, Global Biodiversity Information Facility (GBIF), Ocean Bio-geographic Information Systems (OBIS) and literature to map species distribution in Southern Ocean ecosystems with species distribution models (i.e., Maximum Entropy, Boosted Regression Trees and Gradient Forest). His current research is primarily focused on building up marine ecosystem models by using deep-sea decapods as an example species. Alongside developing distribution models, he is also looking at their scale of interaction with organisms at

different trophic levels. He is using GIS tools in the preparation of environmental data at regional to global scales, of different kinds (biological, physical and categorical) and spatial resolutions. One of the main issues he has observed during his research is the lack of publicly available marine biodiversity data from both developed and developing countries. In many cases, data could be only accessible if one knows the right contact person in the relevant museums or government departments. This phenomenon is observed widely in developing countries. Often the lack of proper infrastructure to publish the data or lack of knowledge about the existence and/or process to publish in one of the above well-known global biodiversity databases were mentioned by experts as the reasons behind this restricted data availability. Some initiatives were taken by non-governmental organizations or individuals to collate records into a single database in some developing countries (i.e., Flora & Fauna database of Bangladesh by Asiatic Society), but mostly they have been few, and either focused on a single species of interest, or not well structured for proper query.

A publicly accessible standardized biodiversity database from a single source, with some advanced analysis functionality, is becoming a necessity in today's world. These databases would not only be beneficial for local and regional researchers, but also for international researchers working on a global scale.

The objective of this fellowship is to receive training from a renowned Global Biodiversity Database Hosting organization in the fields of

- Standards and procedures used in marine environmental, biological and geographic data management with structural requirement for establishing such databases from scratch
- Developing skills to deploy regional biodiversity databases in any locations with resources available from local or regional organizations
- Technologies and know how involved with the possibilities of integrating species distribution models (SDM) as add-on data product with existing biodiversity databases.

Although Basher's primary research is concentrated on the Southern Ocean, he has been working together with other researchers on the prospect of global marine ecosystem classification using recently available environmental layers and species records from OBIS, GBIF, and the literature. Integrating unpublished records extracted from archives in developed countries will enrich the quality and diversity of data available in these databases for future research.

The GBIF Secretariat developed an Integrated Publishing Toolkit (IPT) to facilitate the efficient publishing of biodiversity data on the Internet, using the GBIF network. Faster transfer of existing data using IPT to biodiversity databases required knowledge about data management standards. In developing countries, where availability of these databases is mostly unheard of, knowledge about data standards are not expected to be practiced as norms. To fill up this knowledge and expertise gap, he intends to train first with the technologies involved with establishing a regional biodiversity data portal or integrating existing regional databases with current central data portals. After familiarisation with the standards, technologies and data management practices involved with existing databases, he plans to work in collaboration with

the host organization to explore the possibilities of integrating SDM with their existing databases.

Immediately after completing the fellowship, he expects to initiate a collaboration between his research group and the host institute, where his research group could act as advisor to their partner organizations or universities based in developing countries about the opportunities of publishing and analyzing their unpublished data through the above-mentioned data portals. They will be able to assist them with methodological and technical expertise to achieve their goal of ocean biodiversity assessment and observations in the long term. As the new data come to light due to these newly initiated regional data portals, there would result new research ideas to look into various aspects of diversity of marine species in regional and global scales.

In addition, he is interested to work in the development of an integrated Web server based on data analysis tools (similar to Aquamaps or KGS Mapper) which would utilize quality-assured global environmental and biological datasets (in the process of compilation by myself) with these biodiversity records to propose a classification of global marine ecosystems which could be used for guiding policy development by MPA managers or government policy makers around the world.



Tatiana Bukanova – Russia

Parent supervisor and institution: Dr Vadim Sinkov, P.P. Shirshov Institute of Oceanology of Russian Academy of Sciences, Kaliningrad, Russia.

Host supervisor and institution: Dr Igor Belkin, The University of Rhode island, USA

Fellowship period: Sept 19 – Dec 19 (3 months)

Topic: Automated detection of chlorophyll and thermal fronts from satellite imagery: A case study of the South-Eastern Baltic Sea.

Tatiana's goal is to explore the capabilities of remote sensing for environmental monitoring of the Baltic Sea. Since 2009, she has been developing regional algorithms for precise estimation of chlorophyll concentration (Chl) and total suspended matter concentration (TSM) from satellite ocean color data in the Russian sector of the South-Eastern Baltic. The study includes validation of the standard algorithms with in situ data such as Chl, TSM and long-term measurements of spectral radiometric characteristics in the South-Eastern Baltic. New, corrected bio-optical algorithms for MODIS and MERIS satellite data have been developed providing a better accuracy of Chl and TSM estimation in comparison with the standard algorithms. The basic training requirement includes possibility to collaborate with Prof. Igor M. Belkin, one of the world's foremost experts on oceanic fronts and operational oceanography.

Tatiana expects to get advanced knowledge of front detection from satellite data. The feature-oriented, context-sensitive algorithm for automated front detection in satellite imagery (Belkin and O'Reilly, 2009, *Journal of Marine Systems*) will be applied to the South-Eastern Baltic. The skills and expertise obtained during the training will enhance the current research of coastal-offshore exchange and upwelling events that affect ocean color and thermal fronts' geographical

distribution, physical structure, and temporal variability. She will investigate the frequency of the frontal zones' occurrence in SST and optical properties of water (resulting from chlorophyll and suspended matter content) and their time persistence (stability), explore the interactions between physical and biological oceanic processes, analyze the spatiotemporal correlations between fronts in ocean color and SST, and carry out the first-ever remote sensing survey of thermal and ocean color fronts in the South-Eastern Baltic from high-resolution satellite imagery. Relations between the observed SST fronts and fronts in other water parameters such as salinity, density, nutrients, and chlorophyll will be revealed.

The proposed training will foster integration of satellite observations into the coastal zone management and water resources monitoring and assessment in the South-Eastern Baltic Sea since remote sensing of oceanic fronts appears as a highly effective tool for integrated assessments of physical and biological conditions. The expertise and knowledge gained during this project could be applied to the remote sensing of coastal seas around the world, particularly in the European Seas, East Asian Seas, Bay of Bengal, Gulf of Mexico, and other marginal seas where river runoff and suspended sediments significantly impact the upper mixed layer. The University of Rhode Island is the world's leader in remote sensing of oceanic fronts, and she hopes to develop collaboration with Prof. Belkin on a variety of projects.



Qinglong Yu – China

Parent supervisor and institution: Dr Hui Wang, National Marine Environmental Forecasting Centre, Beijing, China.

Host supervisor and institution: Dr Jun She, Danish Meteorological Institute, Denmark.

Fellowship period: Sept 19 – Dec 30 (3 months)

Topic: Verification and intercomparison of two (pre)operational HYCOM models.

Both DMI (Danish Meteorological Institute) and NMEFC (National Marine Environment Forecasting Centre, China) use HYCOM for their operational forecasting. DMI and NMEFC have signed an MoU on joint development of HYCOM/CICE model. NMEFC starts HYCOM global modelling in 2011. Qinglong has already simulated the global circulation based on the HYCOM 2.2.37 and the climatological simulation has been completed. However, the results in the Arctic are not satisfactory. DMI has a more advanced HYCOM/CICE coupled model for the Arctic, but yet to be fully validated. The intention is to learn the Arctic ocean-ice modelling technique from DMI, using unique Arctic observation dataset from DMI to validate the two HYCOM models, and identify the pros and cons of the two models.

The proposed project aims to enhance the bilateral cooperation between Denmark and China, as agreed in the DMI-NMEFC MoU. The project includes a training period (2 weeks) and a joint research period (2.5 months). During the training, Qinglong will learn DMI version of HYCOM model, the existing observation datasets and how to use DMI's supercomputer. During the remaining 2.5 months, he will validate DMI HYCOM and NMEFC HYCOM against observations, and also inter-compare the two models. The performance, together with the strengths and weaknesses of the two model setups in the Arctic and North Atlantic, will be

identified and recommendations for further improvements will be made. Both models assimilating ocean observations (Argo floats, SST, SSH and sea ice)



Emilia Trudnowska – Poland

Parent supervisor and institution: Assoc. Prof Katarzyna, Institute of Oceanology Polish Academy of Sciences, Sopot, Poland.

Host supervisor and institution: Dr. Sünnje Linnéa Basedow, University of Nordland, Norway.

Fellowship period: Sept 7 – Nov 4 2012(1 month)

Topic: The application of biomass spectrum theories to Arctic LOPC data for zooplankton productivity estimation: cross-system comparisons.

Emilia's Ph.D. thesis deals with zooplankton distribution and structure based on results obtained with high technology equipment, the Laser Optical Plankton Counter (LOPC). This in situ sensor autonomously provides a reliable abundance and community size-structure of plankton. Her work is focused mainly on the impact of climate on Arctic marine pelagic community structures and food webs. The calculation of production capabilities of different water masses based on size spectrum analyses is the next step. Therefore she applied to the Polish Scientific Council for research project and obtained the funding, which covers mostly her scholarship to finish her Ph.D. studies. Her training requirements consist of the establishment of a conceptual and mathematical approach to software adaptation for the calculation of algorithms. She definitely needs extensive guidance from LOPC users to establish the integrated and sustained methodological system for zooplankton analyses.

She hopes to obtain extensive help in preparing the principles and calculation methodology for LOPC data collected for her Ph.D. thesis and to conduct a research project entitled 'Estimation of mesozooplankton productivity on the West Spitsbergen Shelf based on biomass size spectrum analysis (ProSize)'. The sophisticated character of new, advanced LOPC method requires a lot of help from more experienced users, as everyone has to write his own software for data processing. It definitely should be widely discussed with other LOPC users to prepare a uniform calculation methodology. The cooperation with Sünnje Basedow will enable her to carry out the analyses and interpretation of LOPC data properly. Moreover, she is a scientist who widely collaborates with very prestigious and experienced research groups working on oceanographic observations. Thanks to this fellowship, she will develop her skills in various aspects of LOPC data usage and will try to collaborate with the group which is now working on extending the Global Ocean Observing System (GOOS) by defining the Essential Ocean Variables for biological and ecological processes in the ocean.



Sergio Cerdeira Estrada – Mexico

Parent supervisor and institution: Dr Rainer Andreas Ressler, The National Commission for the Knowledge and Use of Biodiversity (CONABIO), Mexico City, Mexico.

Host supervisor and institution: Dr Frank E. Müller-Karger, University of South Florida, USA

Fellowship period: Oct - Nov 2012 (2 months)

Topic: Understanding the detection of red tide events using satellite sensors.

From 2008 to 2011, Sergio developed the Ocean Monitoring Satellite System SATMO. It is an automated, near-real time system to monitor the surface temperature and ocean color (chlorophyll-a, total suspended material, diffuse attenuation coefficient and chlorophyll fluorescence) in the Gulf of Mexico, the north-eastern Pacific Ocean, and the western Caribbean Sea from MODIS satellite imagery at 1 km spatial resolution, received at the receiving station CONABIO. The system also includes the analysis of time series of ocean products (July 2002-June 2011) as well as abnormalities in function of the climatology of the nine years. Leader institution: CONABIO. Funding: CONABIO.

[<http://www.biodiversidad.gob.mx/pais/mares/satmo>].

From 20 Aug. to 31 Dec., 2011, he led a project on the in situ study of bio-optical properties of algal blooms in the Yucatan Platform. Other participating institutions were UABC-Ensenada, Instituto de Geografía de la UNAM, CINVESTAV-Mérida, México; EOMAP GmbH & Co.KG., Germany, and IMaRS-University of South Florida, USA, with funding from GoM-LME, Integrated Assessment and Management of the Gulf of Mexico Large Marine Ecosystem and CONABIO.

[http://www.biodiversidad.gob.mx/pais/mares/contaminacion/mareas_rojas/bio_optico/descripcion.html].

From 13 Aug. 2011 to 13 Aug. 2012, he participated in a project on Monitoring of the seas of Mexico through satellite remote sensing and in situ data as a basis for early warning system of occurrences of red tides. The lead institution was CONABIO, and participating institutions CINVESTAV-Mérida, México; EOMAP GmbH & Co.KG., Germany; e IMaRS-University of South Florida, USA. The funding was from FOPREDEN - Secretaría de Gobernación, México. The expected result is the installation, in June 2012, of a meteorological-oceanographic buoy-water quality in the northeast of Cabo Catoche, Mexico.

The training will be focused on understanding the methodology and theoretical concepts for the detection of red tide events using satellite sensors. With this training it will be possible to advance our understanding on the conditions that cause Harmful Algal Bloom (HAB) events in the Mexican portion of the Gulf of Mexico, integrating current and historical spatial-temporal environmental variables measured both in situ and through the processing of satellite images. This will allow the creation of an early warning system on red tide events.

As part of the study, and in order to better understand red tide events, Sergio will study the variation in spatial-temporal environmental parameters and the variation of the spatial distribution of marine productivity using MODIS-Aqua images that are received and processed

at CONABIO and relate them to red tide events verified in situ by Centro de Investigación y de Estudios Avanzados (CINVESTAV-Mérida).

5.5 NSF Travel Support for Developing Country Scientists

SCOR has received support from the U.S. National Science Foundation (NSF) since 1984 to provide funding for an important SCOR activity in the area of capacity building. 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 began on 15 July 2011, running until 14 July 2014.

The amount of the award from NSF is \$75,000 per year. Recipients of SCOR travel awards are always chosen in consultation with the organizers of meetings that SCOR has agreed to cosponsor; direct applications from individuals are not accepted by the SCOR Secretariat. 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.

Since 2001, a portion of total funding has been provided for longer-term courses or fellowships, such as the POGO-IOC-SCOR Visiting Fellowships for Oceanographic Observations, and another portion is used for the SCOR Visiting Scholar program.

Some of the requests listed below are for meetings in which SCOR is directly involved in planning, so there is no formal written request. Requests come in throughout the year and the SCOR Committee on Capacity Building considers new requests between meetings. The following requests have been approved since the 2011 SCOR annual meeting:

Meeting	Dates	Location	Amount
Bjerknes Centre for Climate Research 10th anniversary	3-6 Sept 2012	Bergen, Norway	US\$4900
2012 Challenger Conference	3-6 Sept. 2012	Norwich, UK	US\$7500
Additional Support for High-CO2 Conference	23-27 Sept. 2012	Monterey, California, USA	US\$10000
Open Science Symposium on Western Pacific Ocean Circulation and Climate	15-17 Oct. 2012	Qingdao, China	US\$5000
15th International Conference on Harmful Algae	29 Oct.- 2 Nov. 2012	Gyeongnam, Korea	US\$4900
Gordon Research Conference on Polar Systems	10-15 March 2013	Ventura, California, USA	US\$5000

International Conference on Holocene Climate Change	4-5 April 2013	London, UK	US\$5000
GEOHAB Open Science Meeting	25-27 April 2013	Paris, France	US\$10000
11th INTECOL Congress, Ecology	18-23 August 2013	London, UK	US\$3000
9th World Sponge Conference	4-8 Nov. 2013	Fremantle, Western Australia	US\$3000

2012/2013 Requests for Travel Grants

The SCOR Committee on Capacity Building will recommend amounts to devote to each of these meetings, based on amount requested (if specified), other grants to the same project/organization, the relevance of the project/organization to SCOR activities, and total amount available to disburse. The recommendations will be presented at the meeting.

	Meeting	Dates	Location	Suggested Amount
1	Pollutant Responses in Marine Organisms Symposium-17	5-8 May 2013	Faro, Portugal	\$3000
2	Conference on Acidification of the Arctic Ocean and Northern Seas: Trends and Consequences	6-7 May, 2013	Bergen, Norway	\$4900
3	PICES Summer School on Ocean Observing Systems and Ecosystem Monitoring	August 2013	Newport, Oregon, USA	\$5000
4	2013 SOLAS Summer School	23 Aug.-2 Sept. 2013	Xiamen, China	\$5000
5	11th International Conference on Paleoceanography (ICP 11)	1-6 Sept. 2013	Barcelona, Spain	\$3000
6	SCOR-relevant sessions at PICES-2013	11-20 Oct. 2013	Nainamo, BC, Canada	\$5000
7	POGO-SCOR Fellowships for Operational Oceanography	Various	Various	\$10000
8	SCOR Visiting Scholars	Various	Various	\$7500

If these amounts were appropriated, it would leave approximately US\$5500 in funds to be used for travel support for other meetings in 2013.

Request #1

-----Original Message-----

From: primo17@ualg.pt [mailto:primo17@ualg.pt]

Sent: Friday, May 25, 2012 12:35 PM

To: secretariat@scor-int.org

Subject: sponsorship PRIMO17

Dear Scientific Committee on Oceanic Research,

The PRIMO- "Pollutant Responses in Marine Organisms" International Symposium series started in 1981 with a small group of researchers who were addressing questions related to "Chemical Effects and the Health of the Ocean" and who were funded by the National Science Foundation of the USA. Although the word "marine" was used in the PRIMO acronym, the meeting has always included both marine and freshwater organisms. A wide range of contaminants have been shown to alter the health of the aquatic systems. The impact of pollutants in these systems is likely to be enhanced by climate change and increase of water shortage. Thus, the impact of xenobiotics on aquatic environments is a major international concern and a key priority issue. In parallel, the several biological techniques known as the "omics" (genomics, proteomics, metallomics and metabolomics) are more and more used to provide a holistic picture for the understanding of cell coordinated response to xenobiotics.

The first PRIMO Symposium was held in Plymouth, UK, in 1981 to stimulate international scientific interactions on this topic. The success of the first PRIMO meeting led to a 2nd in 1983 in Woods Hole, USA, and then to biennial meetings held alternately in Europe and the United States. To date, PRIMO meetings have been held at the following locations:

1981 PRIMO 1 Plymouth, UK
1983 PRIMO 2 Woods Hole, USA
1985 PRIMO 3 Plymouth, UK
1987 PRIMO 4 Woods Hole, USA
1989 PRIMO 5 Plymouth, UK
1991 PRIMO 6 Woods Hole, USA
1993 PRIMO 7 Goteborg, Sweden
1995 PRIMO 8 Asilomar, Monterey, USA
1997 PRIMO 9 Bergen, Norway
1999 PRIMO 10 Williamsburg, USA
2001 PRIMO 11 Plymouth, UK
2003 PRIMO 12 Tampa, Florida, USA
2005 PRIMO 13 Alessandria, ITALY
2007 PRIMO 14 Florianópolis, BRAZIL
2009 PRIMO 15 Bordeaux, FRANCE
2011 PRIMO 16 Los Angeles, USA

The main objective of the PRIMO 17th that will take place in Faro (Portugal) on 5-8 May 2013 is to promote discussions of high scientific quality among a worldwide audience. The conference will provide an international and friendly forum for exchanging state-of-the-art information, knowledge sharing and networking with the focus on “old” and emerging contaminants, modes of action and the understanding of response at subcellular, cellular, tissue species and relevance to the ecosystems.

Therefore we would ask you if you want to join us and sponsor the Conference either supporting the participation of young scientists, Invited speakers or the Conference organization.

Maria João Bebianno

Chairman of the Organizing Committee

Request #2

Conference on Acidification of the Arctic Ocean and Northern Seas: Trends and Consequences

From: Lars-Otto Reiersen [<mailto:lars-otto.reiersen@amap.no>]

Sent: Tuesday, August 28, 2012 2:31 AM

To: 'ed.urban@scor-int.org'

Cc: richard.bellerby@niva.no

Subject: Arctic Ocean Acidification Conference in Bergen, May 2013 , Invitation of Sponsors

Conference on Acidification of the Arctic Ocean and Northern Seas: Trends and Consequences

Invitation to co-sponsor an International Conference to be held in Bergen, Norway, 6-7 May, 2013

The Arctic Monitoring and Assessment Programme (AMAP) is currently preparing a scientific assessment of the status, trends and effects of Arctic Ocean Acidification on marine ecosystems and fisheries. This assessment is being produced by an international expert team under the leadership of Dr. Richard Bellerby (Norway). Topics covered by the assessment include: marine acidification chemistry and its relationship to CO₂ emissions, acidification trends in the Arctic Ocean and Northern Seas, implications for the regions marine ecosystems, potential consequences for Northern fisheries and Northern communities. Based on this scientific assessment, AMAP will prepare proposals for actions for the Arctic Council, including policy-relevant findings and the identification of gaps in knowledge and recommendations regarding future research, monitoring and assessment work.

The assessment will be delivered to the Arctic Council Ministerial meeting that will take place in Kiruna, Sweden, 15th May 2013. As a part of the communication of the results of the assessment, AMAP and the Institute of Marine Research in Bergen are planning an international Conference

on the Acidification of the Arctic Ocean and Northern Seas, to be held in Bergen, 6-8 May 2013, the week prior to the Arctic Council Ministerial meeting. The conference will showcase the AMAP assessment findings but will also be an open scientific conference inviting presentations from other organizations and scientists working on relevant issues to introduce the latest developments in this rapidly evolving field of science.

As one of the key organizations working on issues related to ocean acidification and its effects, we are hereby writing to invite your organization to become a co-sponsor of the conference. If you have a possibility to sponsor the conference financially, this would be very welcome, however provision of assistance in the practical arrangement of the conference and nomination of scientist(s) to participate in the conference scientific committee to evaluate submitted abstracts and compose the final conference programme would also be appreciated.

We plan to prepare a first announcement of the conference and call for papers during September. If you could provide an early (hopefully positive) response to this invitation to co-sponsor the conference, we would be happy to include your organization as a co-sponsor on this announcement.

If you have any questions, please do not hesitate to contact myself or Richard Bellerby Richard.Bellerby@nina.no.

Yours sincerely

Lars-Otto Reiersen
AMAP Executive Secretary

Lars-Otto Reiersen
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Internett: www.amap.no

Request #3

A contribution at a level of US\$7,500–10,000 is requested to support participation of early career scientists in the 2013 PICES Summer School on “Ocean Observing Systems and Ecosystem Monitoring” to be held in August 2013, in Newport, Oregon, USA. The synopsis of the school is appended below, but details will be discussed at PICES-2012.

2013 PICES Summer School on “*Ocean Observing Systems and Ecosystem Monitoring*”

Proposed Dates: August 2013 (most likely August 19–23 or August 26–30)

Proposed Location: Newport, Oregon, USA

Principal Organizer: Jack Barth (Oregon State University – OSU)

Steering/Selection Committee: Jack Barth (MONITOR, USA), Steven Bograd (POC, USA), Lucas Brotz (BIO, Canada), Kyung-Il Chang (POC, Korea), Liqi Chen (BIO, China), Shin-ichi Ito (POC, Japan), Sei-ichi Saitoh (MONITOR, Japan), and Toru Suzuki (TCODE, Japan)

Proposed Instructors: Jack Barth (OSU), Francis Chan (OSU), Burke Hales (OSU), Waldo Wakefield (NOAA), Steven Rumrill (ODFW), Alicia Helms (South Slough National Estuarine Research Reserve), Cheryl Brown (U.S. Environmental Protection Agency)

Synopsis: A 5-day summer school on “*Ocean observing systems and ecosystem monitoring*” will consist of classroom lectures, laboratory demonstrations of inter-disciplinary ocean sensors, an introduction to ocean observing platforms and fieldwork on a research vessel to deploy ocean observing equipment at sea. The school will cover a range of sensors and sampling equipment used to measure physical, biological and chemical properties of the ocean. The utility of time-series datasets generated by moored monitoring stations to estimate net ecosystem metabolism for estuarine and coastal habitats will be demonstrated.

Topics to be covered include: ocean observing system design, platforms (moorings, coastal stations, sea-floor landers, autonomous underwater vehicles), sensors, power, communications (instrument-to-data logger, platform-to-shore, underwater, satellite), sampling strategy, data quality control, and data processing of time-series data.

The lectures and demonstrations will make use of ocean observing systems currently in place in Oregon coastal waters. Students will gain a conceptual understanding of the ecological processes that contribute to marine ecosystem metabolism, and receive practical experience with the programming, calibration, deployment, recovery, data file formats, QA/QC protocols, metadata development, and database management for the time-series data. The workshop will include case-history calculations of marine ecosystem metabolism for several local near-shore and estuarine environments.

Request #4



Dr Ed Urban
Executive Officer
Scientific Committee on Oceanic Research
College of Earth, Ocean, and Environment
Robinson Hall
University of Delaware
Newark, DE 19716 USA

20 July 2012

Dear Ed,

The Surface Ocean- lower Atmosphere Study (SOIAS) will be holding its sixth International Summer School in Xiamen, China over the period 23 August- 2 September 2013.

SOIAS places particular emphasis on the Summer School and believes that the young researchers have the capacity to make immediate significant progress in response to the significant environmental and societal challenges.

In previous Summer Schools, we are proud to have hosted participants from over 30 different nations of the world in Cargese, Corsica. The next school will take place for the first time in China, we hope that it will increase the participation and exposure of SOIAS science to more students from Asian nations and also the ones with economies in transition.

The SOIAS Summer School is still a smashing success, but it depends upon the generosity of international sponsors and national funding agencies.

With this in mind, SOIAS kindly requests support from SCOR for the International Summer School to cover the travel costs for students from nations with economies in transition. We expect that a contribution of \$1 Ok will partially or fully support the participation of up to 8-10 students from the developing world.

I thank SCOR for their continued support of SOIAS and for your consideration in this matter.

Yours sincerely

A handwritten signature in black ink, appearing to read "Emilie Breviere".

Dr. Emilie Breviere
Executive Officer, SOIAS
International Project Office

Request #5

From: Eva Calvo [<mailto:ecalvo@icm.csic.es>]
Sent: Thursday, April 19, 2012 5:56 AM
To: ed.urban@scor-int.org
Cc: Marta Estrada
Subject: ICP 11

Dear Ed,

Marta Estrada forwarded me your email regarding sponsorship for next ICP. Many thanks for your prompt and positive response.

As Marta already mentioned and as you may also know, the ICP is held every 3 years and ICP11 is to be held September 1-6, 2013 in Sitges, Barcelona (www.icp2013.cat). We are now working in the scientific program and also seeking potential sponsors to keep the registration fees as low as possible. We know that SCOR also provides some funding for travel grants, which will be indeed very interesting for young scientists, and would like to know whether there is the possibility to request such fundings for attendance to this conference.

Thank you very much for your attention and interest.

All the best,

Eva

Eva Calvo
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e-mail: ecalvo@icm.csic.es
<http://biogeochemistry.org/EvaCalvo>
<http://www.icm.csic.es/bio>

Request #6

Travel support at a level of US\$5,000–7,500 is requested for scientists from countries with “economies in transition” to attend SCOR-relevant sessions/workshops at the 2013 PICES Annual Meeting to be held October 11–20, 2013, in Nanaimo, British Columbia, Canada, under the theme “*Communicating forecasts, uncertainty and consequences of ecosystem change to society*”. The scientific program for this event will be finalized in October at PICES-2012.

Request #7

POGO-SCOR Fellowships for Operational Oceanography—SCOR makes an annual contribution of \$10,000 to this program, which was started in 2001 (see report above).

Request #8

SCOR Visiting Scholars—SCOR allocates \$7500 to this program annually, which was started in 2009.

5.6 SCOR Reports to Developing Country Libraries

One book was sent to developing country libraries since the 2011 Executive Committee Meeting:

- Roy, S., C.A. Llewellyn, E.S. Egeland, and G. Johnsen (eds.). 2011. *Phytoplankton Pigments Characterization, Chemotaxonomy and Applications in Oceanography*. Cambridge University Press.

SCOR List of Developing Country/Country in Transition Libraries

Argentina	Universidad Nacional del Sur Bahía Blanca, Argentina
Bangladesh	Library SPARSO Dhaka, Bangladesh
Brazil	FURG Departamento de Oceanografia Rio Grande, Brazil Instituto Oceanográfico Universidade de São Paulo São Paulo, Brazil Dept. of Oceanography and Hydrology University of the State of Rio de Janeiro
Bulgaria	State Fisheries Inspectorate (SFI) Fisheries and Aquaculture Department Sofia, Bulgaria
Chile	Departamento de Oceanografia Universidad de Concepción Concepción, Chile Servicio Hidrografico y Oceanografico Valparaiso, Chile
China-Beijing	Library of Ocean University of Qingdao Qingdao, China Institute of Oceanology Chinese Academy of Sciences Qingdao, China Second Institute of Oceanography State Oceanic Administration Hangzhou, China
Croatia	Rudjer Boskovic Institute Zagreb, Croatia
Cote d'Ivoire	Centre de Recherches Oceanologiques (CRO) Abidjan, Côte d'Ivoire

Cuba	Centro de Investigaciones Pesqueras (CIP) Ministerio de la Industria Pesquera (MIP) Habana, Cuba
Egypt	National Institute of Oceanography and Fisheries Cairo, Egypt
Fiji	Pacific Islands Marine Resources Information System (PIMRIS) The University of the South Pacific Suva, Fiji Islands
Ghana	Institute of Aquatic Biology Achimota, Ghana
India	National Institute of Oceanography Goa, India Physical Research Laboratory Ahmedabad, India
Indonesia	Centre for Oceanology Indonesian Institute of Sciences Jakarta, Indonesia
Kenya	Kenya Marine and Fisheries Research Institute (KMFRI) Mombasa, Kenya
Malaysia	ICLARM - The World Fish Center Penang, Malaysia
Mexico	Universidad Nacional Autónoma de México (UNAM) México, D.F., México Biblioteca CICESE Ensenada, Mexico
Morocco	Institut National de Recherche Halieutique (INRH) Casablanca, Morocco
Namibia	Library of the Sam Nujoma Marine and Coastal Resources Research Centre (SANUMARC) University of Namibia Henties Bay NAMIBIA
Pakistan	National Institute of Oceanography Karachi, Pakistan
Peru	Instituto del Mar del Perú (IMARPE) Callao, Peru
Poland	Institute of Oceanology Polish Academy of Sciences Sopot, Poland
Philippines	College of Science, University of the Philippines Quezon City, Philippines
Romania	Romanian Marine Research Institute Constanta, Romania
Russia	P.P. Shirshov Inst. of Oceanology Russian Academy of Sciences Moscow, Russia

	All Union Research Inst. of Fisheries and Oceanography V Moscow, Russia
South Africa	University of Cape Town Cape Town, South Africa
Thailand	Dept. of Marine Sciences Chulalongkorn University Bangkok, Thailand
Tunisia	Institut National des Sciences et Technologies de la Mer (INSTM) Salammbô, Tunisia
Turkey	Institute of Marine Sciences Middle East Technical University Icel, Turkey
Ukraine	Southern Scientific Research Institute of Marine Fisheries and Oceanography (YugNIRO) Laboratory of Pacific and Indian Oceans Fish Resources and Fishery Statistics Crimea, Ukraine Marine Hydrophysical Institute Ukrainian Academy of Sciences Sevastopol, Ukraine
Vietnam	National Institute of Oceanography Nha Trang, Vietnam



Integrated Marine Biogeochemistry and
Ecosystem Research

www.imber.info

15 August 2012

Dr. Ed Urban
SCOR Secretariat
Robinson Hall
College of Earth, Ocean, and Environment
University of Delaware
Newark, DE 19716
USA

Dear Ed,

The contribution from SCOR for the IMBER ClimECO₃ summer school

The IMBER ClimECO₃ summer school that was held in Ankara at the end of July was by all accounts a great success. The 50 participants from 26 countries were an enthusiastic and participative group that interacted well with each other and with the lecturers. We received many positive comments about the summer school. If you would be interested in seeing the participants' evaluations please let me know and I will be happy to send them to you.

The format of morning lectures and hands-on exercises using several different models each afternoon, proved to be extremely successful. All the lectures were webcast live and several people regularly followed the broadcasts. All the recordings will be available on the IMBER website soon. In addition, participants worked in groups to produce a conceptual model, which they presented on the final day. These were of an extremely high standard and, without exception, the groups have been encouraged by the lecturers to develop these further.

I would like to thank you, on behalf of IMBER, for the very generous contribution that we received from SCOR to support five students and early career scientists from developing countries to attend the summer school. It was a considerable help. Please extend my gratitude to everyone who voted to award this money to IMBER ClimECO₃.

Kind regards,

Lisa Maddison
Deputy Executive Officer
IMBER International Project Office

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PRIMO¹⁷

POLLUTANT RESPONSES IN MARINE ORGANISMS
UNIVERSITY OF ALGARVE
5TH - 8TH MAY 2013, FARO- PORTUGAL

CIMA



UAlg

UNIVERSIDADE DO ALGARVE

Welcome to PRIMO17

Dear Colleagues,

We are proud to announce the 17th Pollutant Responses in Marine Organisms (PRIMO) Congress that will be held in the University of Algarve (Faro, Portugal) from 5th to 8th May 2013.

The main objective of this conference is to promote discussions of high scientific quality among a worldwide audience. Participants of this conference will include a number of prominent experts as well as young researchers in the field of aquatic ecosystems contamination and mechanism of effects of xenobiotics on wildlife. The conference will provide an international and friendly forum for exchanging state-of-the-art information, knowledge sharing, and networking, with focus on xenobiotics, modes of action and relevance to the ecosystems.

Hoping to meet you in Faro for the 17th PRIMO Congress, with best wishes,

Maria João Bebianno

Chairman of the Organizing Committee

Congress Venue

The congress venue is the University of Algarve located at 5 Km from Faro the capital of Algarve region. Faro is well communicated by plane to all major international airports. The Algarve has almost 200 kilometres of coastline, between cliffs and long-stretching sands, three thousand hours of sun per year and pleasant temperatures influenced by the Mediterranean climate.

Session Topics

The preliminary list of topics is the following:

- Cellular absorption, distribution, metabolism and elimination
- Ocean acidification
- Climate change
- Oceans and Human health
- Epigenetics
- Exposome and Exposomics
- Nanomaterials
- Emerging compounds
- Endocrine disruption
- Geno- and phenotoxicity
- Tissue levels and immune responses
- Combination effects of environmental stressors
- Ecosystem-level effects
- Computational Toxicology

Publication

Selected articles will be published in the peer review journals Marine Environmental Research, Aquatic Toxicology and Environmental Science & Pollution Research.

Deadlines

Early bird registration: 30th November 2012

Abstracts: 5th February 2013

Late registration: 1st Dezember 2012

Registration Closes: 30th April 2013

About PRIMO

The International Symposium series, "Pollutant Responses in Marine Organisms" began in 1981 with a small group of NSF-funded investigators who were addressing questions related to "Chemical Effects and the Health of the Ocean" at a mechanistic level.

The first PRIMO Symposium was held in Plymouth, UK, in 1981 with the goal of stimulating international scientific interactions in this area. The success of the first PRIMO meeting led to a second in 1983 in Woods Hole, USA, and then to biennial meetings held alternately in Europe and the United States. Although the word "marine" was used to produce the memorable acronym, the meeting has never distinguished between, and always has included, marine and freshwater organisms.

Registration Fees

Regular registration: 450 euro + VAT (23%) = 553.50 euro
Student registration: 250 euro + VAT (23%) = 307.50 euro

Local Organising Committee

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