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## Report on the 2009 POGO-SCOR Fellowship Programme

This year the fellowship programme was again implemented using POGO funds with supplementary financial support from SCOR. January's announcement opened the competition for three months. This year saw a total of 25 applications received, which was considerably lower than the number of applicants for the previous year. Applicants on last year. Applicants wrote from Abu Dhabi, Argentina, Brazil, Cape Verde, Chile, China, India, Indonesia, Iran, Mexico, Mozambique, Pakistan, Romania, South Africa, Trinidad & Tobago and Turkey.

The applications were screened independently by a committee of three, 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, thirteen fellowships were offered to oceanographers from developing countries and economies in transition. Tragically, one of the successful applicants from Brazil died in the Air France crash in May 2009 which happened en route from Brazil to France. The decision was made not to replace this applicant and thus the final total was twelve. The host institutions were in Australia, France, Germany, Portugal, the UK, and the USA.

As in 2008 a Special POGO-SCOR visiting fellowship for on-board training on an Atlantic Meridional Transect (AMT) Cruise was also offered this year, with the selected candidate, from the Philippines, having the opportunity to visit Plymouth Marine Laboratory (PML) in the UK prior to the cruise to participate in cruise preparation and planning, to go on the cruise and after the cruise spend up to two additional months at PML, learning to analyse the results statistically and interpret them.

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 January, 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.

## **Demography of Fellowships**

### **Parent Institutions of Successful Candidates:**

Brazil	Federal University of Rio Grande
Cape Verde	Instituto Nacional de Desenvolvimento das Pescas
Chile	Pontificia Universidad Catolica de Chile
Chile	University of Concepción
China	South China Sea Institute of Oceanology, Chinese Academy of Science
India	National Institute of Oceanography
India	Physical Research Laboratory
Mexico	Centro di Investigacion Cientifica y de Educacion Superior de Ensenada (CICESE)
Mexico	The National Commission for the Knowledge and Use of Biodiversity (CONABIO)
Mozambique	National Institute for Hydrography and Navigation
Pakistan	National Institute of Oceanography
South Africa	Council for Scientific and Industrial Research (CSIR)

### **Host Institutions:**

Australia	Commonwealth Scientific and Industrial Research Organisation (CSIRO)
France	IFREMER
France	Université du Littoral Côte d'Opale
Germany	AWI Bremerhaven
Germany	Earth Observation and Mapping
Germany	IFM - Geomar
Germany	Max Planck Institute for Marine Microbiology
Portugal	University of Aveiro
UK	Sheffield Centre for Earth Observation Science
UK	Sir Alister Hardy Foundation for Ocean Science (SAHFOS)
USA	Oregon State University
USA	University of Rhode Island, Graduate School of Oceanography
USA	Virginia Institute of Marine Science, College of William & Mary

### **Gender distribution**

Female: 3

Male: 9

## **POGO-SCOR JOINT FELLOWSHIP PROGRAMME**

### **Successful Candidates - 2009**

#### **Christopher Aiken - Chile**

Dr Aiken is a research associate with the Pontificia Universidad Catolica de Chile, where he is developing an innovative coastal observing network in the Chilean fjords using ferries as ships of opportunity, known as FOCA (Ferries Observando los Canales Australes). Dr Aiken spent 1½ months at CSIRO, under the supervision of Mr Ken Ridgeway, Leader of the IMOS Ship of Opportunity Facility with assistance from Prof. Gary Meyers, Director of IMOS at the University of Tasmania. During this time Dr Aiken received specific training in various aspects of Australia's Integrated Marine Observing System (IMOS) and Ship of Opportunity (SOOP) facility that are of relevance to the Chilean project.

#### **Sinibaldo Canhanga - Mozambique**

Mr Canhanga is a researcher at the National Institute for Hydrography and Navigation (INAHINA) in Mozambique, where he is responsible, amongst other things, for the tide analyses and prediction. He is also on a national group designated to establish numerical models as a tool to support the decision-makers on the best decision for sustainable coastal development. Mr Canhanga has been spending the month of January at the University of Aveiro in Portugal, under the supervision of Prof. J Dias, time being devoted to improving Mr Canhanga's knowledge of the morphodynamic modelling system being used by the Estuarine Group, its potential and limitations.

#### **Sergio Cerdeira Estrada - Mexico**

Dr Cerdeira is an expert analyst in remote sensing with The National Commission for the Knowledge and Use of Biodiversity (CONABIO) in Mexico. The fellowship period of two months with Dr Thomas Heege at Earth Observation and Mapping (EOMAP) in Germany was used to train Dr Cerdeira in the use of hyperspectral data to derive standardised products such as suspended matter, phytoplankton and coloured organic material from both deep inland and coastal waters. EOMAP and CONABIO also intended that this fellowship would lead to future joint developments in ocean monitoring, such as geophysical parameters and maritime ecosystems, for example the Mexican coral reefs.

#### **Amábile Ferreira - Brazil**

Ms Ferreira has been a PhD student at the Federal University of Rio Grande in the Laboratory of Ocean and Climate Studies, Institute of Oceanography since March 2006. Since that time she has been involved in the project PATagonian EXperiment (PATEX) and has conducted many of the bio-optical measurements in six of the seven cruises in the Patagonian shelf break region. She was lead author on a publication in Deep Sea Research I in 2009 relating to this research. She spent two months with the team in the Laboratoire d'Océanologie et de Géosciences (LOG) in France, under the supervision of Dr Alvain, improving her knowledge of the assessment of water biogeochemical characterisation from optical measurements, a topic closely related to her doctorate research. Dr Alvain was particularly interested in collaborating with Ms Ferreira to develop bio-optical and remote sensing observation from ocean colour satellite sensors in order to study optical properties and dominant phytoplankton groups in Patagonian shelf-break waters.

#### **Sanobar Kahkashan - Pakistan**

Ms Kahkashan is a marine chemist research scientist in the Chemical Oceanography Section at the National Institute of Oceanography (NIO) in Pakistan. Her fields of interest are marine pollution monitoring (organic pollutants) and their impact on the marine environment including Polycyclic Aromatic Hydrocarbons (PAHs). She is currently responsible for carrying out extraction, cleanup and fractionation of organic pollutants in marine environmental samples for a project entitled 'Establishment of PAK-EPA Marine Water Pollution Monitoring Center at NIO'. Ms Kahkashan spent three months at the University of Rhode Island's Graduate School of Oceanography under the supervision of Dr Rainer Lomann. She was trained in preparing, deploying, analysing and interpreting the results from using passive polyethylene samplers in coastal waters. Polyethylene samplers are very cost-effective and versatile and will provide Ms Kahkashan and NIO an efficient tool to start their own coastal observation programme.

#### Keerthi MG - India

Ms Keerthi is a project assistant in the project 'Dynamics and thermodynamic of the equatorial Indian Ocean: an Argo perspective' at the National Institute of Oceanography (NIO), India and has been working on ARGO profiles to understand the ocean dynamics and its response to atmospheric forcing. She is now aiming to pursue a PhD programme using ARGO profiles. Ms Keerthi spent her three month fellowship period at IFREMER working under the supervision of Clément de Boyer Montégut on the inter-annual variability of the mixed layer in the Indian Ocean using *in situ* data.

#### Ravi Kumar MS - China

Mr Kumar is currently pursuing his PhD at the South China Sea Institute of Oceanology in the area of Biological and Remote Sensing Marine Ecology under the guidance of Prof. D Tang. He recently started his two month fellowship period at the Virginia Institute of Marine Science under the supervision of Dr K Tang, receiving training on the ecophysiology of *Phaeocystis* and use of state-of-the-art instrumentation such as PAM, gas chromatograph and epifluorescence microscopy to conduct hypothesis-driven research aiming to understand the biology and ecology of that algal group.

#### Arvind Singh - India

Mr Singh is a Senior Research Fellow at the Physical Research Laboratory, Goa, India, where he was offered a Graduate Student Fellowship two years ago working with Prof. Ramesh addressing oceanographic problems. Mr Singh spent three months training in the new subject of 'The role of anaerobic ammonium oxidation (anammox) in nitrogen-loss from Indian coastal waters' under the supervision of Dr Marcel Kuypers at the Max Planck Institute for Marine Microbiology. Both Mr Singh's parent and host institutions saw this as an opportunity to initiate new collaborations between marine scientists in India and institutions in northern Germany.

#### Vladimir-Giovanni Valencia - Mexico

Mr Valencia is currently enrolled in the Physical Oceanography PhD programme at the Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE). He is a member of the Waves Group and has been involved in a project where two High Frequency (HF) radars were installed in the Gulf of Mexico during January-April 2005. One of the interests of the group is to study the processes of generation and propagation of waves and Mr Valencia's training on the Estimation of Directional Wave Spectrum from HF Radar Data under the supervision of Prof. L Wyatt, Sheffield Centre of Earth Observation Science at the University of Sheffield, UK, is seen as benefiting both CICESE and the Waves Group to enable further study of ocean surface wave processes and acquire a broader view with long term measurements and statistics. Unfortunately, Mr Valencia has been unable to secure a visa and thus there is some doubt about this fellowship taking place.

#### Johan van der Molen – South Africa

Dr van der Molen is a Post Doctoral Fellow within the African Coelacanth Ecosystem Programme (ACEP) funded by the National Research Foundation (NRF) based at the Council for Scientific and Industrial Research (CSIR) in South Africa. Within ACEP a multi-disciplinary team of researchers have been working on a study (2009 to 2011) of several aspects of the Natal Bight Ecosystem. Dr van der Molen's task was to study the temporal and spatial distribution of the phytoplankton. The fellowship was granted to enable Dr van der Molen to attend a two-week Taxonomy Workshop co-organised by the Sir Alister Hardy Foundation for Ocean Science (SAHFOS)-Marine Biological Association (MBA) Marine Phytoplankton in Plymouth, UK, which he undertook in July 2009. Thereafter he visited the Alfred Wegener Institute for Polar and Marine Research in Germany for two weeks and was trained in molecular techniques under the supervision of Dr Kerstin Töbe. This has been successfully completed with all those involved expressing the wish to maintain contact and investigate future collaborations.

#### Nuno Roberto Viera – Cape Verde

Mr Vieira is Assistant to the Site Manager of the Tropical Eastern North Atlantic Time-Series Observatory (TENATSO), Instituto Nacional de Desenvolvimento das Pescas, Cape Verde. TENATSO is a unique fixed-point ocean time series, presently implemented as a collaboration between Germany (IFM-GEOMAR), the UK (National Oceanography Centre, Southampton) and Cape Verde. During the fellowship period of three months, Mr Vieira received CTD training on

maintenance, calibration and data processing at IFM-GEOMAR under the supervision of Dr Gerd Krahmman. This has provided the Institute with local capacity to undertake ongoing tasks, such as monthly sampling, and has enabled both the Institute and TENATSO to respond to enquiries from foreign scientists on an individual basis and in relation to scientific programmes.

Gonzalo Saldías Yau - Chile

Mr Saldías is pursuing a MS degree at the University of Concepción with the thesis research of river plume dynamics off central Chile. He is hoping to be able to combine the *in situ* hydrographic data collected during the past three years over the continental shelf with remote sensing observations. His fellowship will be spent with a research group led by Prof. Ricardo Letelier at the College of Oceanic and Atmospheric Sciences, Oregon State University, USA, commencing in March 2010. Prof. Letelier's group has been monitoring and studying the dynamics of the particular region over several years using satellite data and will train Mr Saldías in the analysis of remote sensing images and share their protocols and analytical tools with him.

**SUCCESSFUL AMT FELLOWSHIP CANDIDATE – 2009**

Charissa Ferrera – The Philippines

Ms Ferrera is a graduate student of the Marine Science Institute of the University of the Philippines and studying carbonate chemistry and organic matter decomposition in the Sulu Sea for her Master's thesis. She arrived at PML shortly before the cruise departed on 13 October 2009 and spent two months at sea. She spent two weeks at PML after the cruise, undertaking post-cruise sample analysis. Her supervisor at PML reported that she made an excellent contribution to the cruise.