

### The Partnership for Observation of the Global Oceans

## Honolulu Declaration



At a meeting of the Partnership for Observation of the Global Oceans (POGO) in Honolulu (January 2012), world leaders in ocean observing representing 29 major oceanographic institutions from 18 countries re-affirmed their commitment to work together for increased understanding of how our oceans are affected by climate change, and to optimise the benefits to society of existing and future ocean observing systems.

We have demonstrated changes in the ocean environment that must have profound implications for the biodiversity of marine life, for our climate and weather systems, and for the well-being of world society.

Through its Oceans United forum, POGO is taking a leadership role to integrate and coordinate its work with those of relevant international organisations to ensure that ocean observations form an essential component of effective stewardship of the global environment.

#### **Specifically, the Honolulu Declaration recommends and commits to:**

1. Vigorous support of a globally-coordinated network of time series observation stations in the oceans to monitor a rapidly changing Earth System through OceansITES; in particular to study the heat storage, deep-sea biogeochemistry and ecosystem function and other properties that are poorly known.
2. Support of the "Blue Planet" Task of the Group on Earth Observations (GEO), including a related Symposium to be convened in November of 2012.
3. Support of the POGO exhibit at the EXPO 2012 in Yeosu, Korea and support of the ocean-related initiatives at the United Nations Conference on Sustainable Development (RIO+20).
4. Continued support for, active engagement with, and active promotion of the Southern Ocean Observing System (SOOS), including contribution of data from POGO members with Southern Ocean interests and capabilities.
5. Development of Oceans United as a global forum for dialogue within the marine scientific community, and with international agencies responsible for marine stewardship.
6. Continued investment in capacity building in developing countries and economies in transition, to further the global expansion of ocean observations, in particular through support of the Nippon Foundation-POGO Alumni Network for Oceans (NANO).

Signed on behalf of all participants by:



Dated: 2 March 2012

Prof. Peter Herzig  
Chairman of POGO



<http://ocean-partners.org>

## Update on POGO capacity building POGO-SCOR Visiting Fellowships 2012

The 12 successful candidates for the 2012 programme have now been selected and notified. The 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).



**Anne Treasure,**  
"Ecosystem responses to the shifting Sub-Antarctic Front: a modelling approach"



**Zeenatul Basher,**  
"Capacity building for deploying and developing regional marine biodiversity database portals"



**Dariusz Baranowski,**  
"Air-sea interactions during MJO events in daily to intraseasonal timescales"



**Claudia Muñoz,**  
"Use and calibration of the PUV2500 profiler radiometer (Visible and UV radiation)"



**Qinglong Yu,**  
"Verification and intercomparison of two (pre) operational HYCOM models"



**Sergio Cerdeira Estrada,** "Understanding the detection of red tide events using satellite sensors"



**Emilia Trudnowska,**  
"Training in the use of new animal-borne sensors for behavioural, physical and fluorometry data acquisition"



**Tatiana Bukanova,**  
"Automated detection of chlorophyll and thermal fronts from satellite imagery in the South-Eastern Baltic Sea"



**John Mungai,**  
"Ocean modelling for operational marine forecasting of the western Indian Ocean"



**Elizandro Lima Rodrigues,** "Laboratory and state-of-the-art training for sustained oceanographic observations at the Cape Verde Ocean Observatory"



**Huiwu Wang,**  
"Deep ocean buoy observations"



**Mohammad Muslem Uddin,**  
"Coastal observation and modelling"



## POGO-AMT fellowships

POGO is pleased to announce that it will once again offer a Visiting Fellowship for training on-board an Atlantic Meridional Transect (AMT) cruise in 2012. This programme, now in its 5th year, has proved to be a very successful in providing sea-going experience to young scientists from developing countries, and the opportunity for them to be involved in an internationally renowned scientific programme.

The selected candidate will visit Plymouth Marine Laboratory (PML), UK, for 1 month prior to the start of the cruise to participate in cruise preparation and planning; will go on the cruise (10 Oct-24 Nov 2012, from UK to Chile); and after the cruise will spend one additional month at PML, learning to analyse the results statistically and interpret them.

The programme is open to scientists, technicians, graduate students and post-doctoral fellows involved in oceanographic work at centres in developing countries and countries with economies in transition. The application deadline is **4th May 2012**. Visit <http://ocean-partners.org/training-and-education/pogo-amt-fellowships> for further details.



## Update on POGO capacity building (cont'd)

### POGO Visiting Professorships

The 2011 visiting professorship was successfully completed in March 2012. Prof. Walker Smith (Virginia Institute of Marine Science, USA) visited Dr. Lam Ngoc Nguyen (Institute of Oceanography, Nha Trang, Viet Nam) to conduct a training course on the use of fluorescence in oceanographic studies of coastal waters of Vietnam. *The following article was provided by Prof. Walker Smith.*

Nha Trang is a city on the south-central coast of Viet Nam, and is well known for its marine reserves, reefs and fisheries. The Institute is one of Viet Nam's leading research facilities, and has a building dedicated to marine plankton that was built with Danish assistance ten years ago. Faculty in Marine Plankton have numerous ongoing projects with various European and Asian countries as well as the United States. Many of these projects deal with the distribution, ecology, and effects of harmful algal blooms in coastal waters.



Prof. Smith and Dr Nguyen with the group of students who attended the POGO training course in Viet Nam

The course was designed to introduce students to the concepts of fluorescence and its use in oceanography. Topics covered included fluorescence of chlorophyll, active fluorescence, fluorescence from space, and fluorescence in other applications that ranged from chemical procedures to applications in flow cytometry. Discussions also included how fluorescence is being used to assess biological and oceanographic impacts of climate change.

The students were from a variety of backgrounds and institutions, including one from Denmark, one from the historic city of Hue, and one from Ho Chi Minh City. Students included beginning students as well as recent PhDs. In addition to the expected challenges with language (English was used in class by the instructor), there were also challenges in academic backgrounds and experiences. Happily, the students worked well together and helped each other with tasks with which some were less familiar. A short presentation by Dr. Doan Nhu Hai on his use of

fluorescence in Vietnamese coastal waters was included.

The course involved both lectures and laboratories. Because the concentration was on phytoplankton fluorescence, many of the laboratories would overlap from one day to the next, as students were asked to monitor growth and changes in fluorescence through time. They were also able to sample in the field to look at spatial patterns of variable fluorescence. The field trips provided a welcome addition to laboratory studies and a vivid contrast in using fluorescence in different settings.

Smith commented that he "found the students to be exceptionally well trained and inquisitive. It was fun showing them new procedures, and seeing them absorb ideas and apply them to their own research areas, whether it was vascular plant physiology or algal growth and ecology". He also was impressed by the students' capabilities and desire to learn.



Fieldwork component of the training course

One of the final elements of the course was an overnight trip north along the coast, where they sampled and enjoyed the village setting. This was a wonderful opportunity for both students and instructor to experience the slower pace of Viet Nam and its beauty (see photo below).



The 2012 Visiting Professorship has been awarded to Dr. Kanapathipillai Arulanathan, who will be hosting Prof. Iosif Lozovatsky at the National Aquatic Resources Research and Development Agency (NARA), Sri Lanka, for a training course on "Coastal Dynamics: Observation and analysis of currents, internal waves and turbulence on shelves".

## Update on POGO capacity building (cont'd)

### Austral Summer Institute ASI XII

ASI XII was devoted to the themes Marine Genomics, Water and Global Change, Time Series in Oceanography and Microbial Oceanography. Activities were held at the Main Campus of the University of Concepcion and at the Marine Biology Station of the Catholic University in Las Cruces.

Some 118 graduate and advanced undergraduate students from Argentina, Brazil, Colombia, Cuba, Ecuador, France, Uruguay and Chile participated in ASI XII, organized by the Department of Oceanography and the COPAS Center of the University of Concepcion.

In October 2011, there was a course on "Marine Genomics: from Ecology to Biotechnology" involving scientists from the University Pierre et Marie Curie/CNRS, France, followed by a mini course on Data mining and genotyping of Single Nucleotides Polymorphisms (SNP): linking genotypes to phenotypes of marine organisms, by Dr. Cristian Gallardo from University of Concepcion.

The course Exploring Fresh Water in Global Climate and High-Latitude Oceans (Dr. Peter Rhines) covered the global hydrological cycle: fresh water in the climate system, in the oceans and atmosphere. It consisted of regular lectures and student projects, practical demonstrations and student presentations.

Three courses covered the topic of Oceanographic Time Series. Coastal Upwelling Time Series in the Humboldt Current System (CUTS-HCS), taught by lecturers from the Department of Oceanography of UDEC, comprised methodological and conceptual aspects in the coastal upwelling area of the Humboldt Current System, and included lectures and practical activities.

Oceanographic Time Series in Northern Hemisphere Coastal and Open Ocean Ecosystems was taught by Drs. David Checkley and Michael Lomas. It focused on the scientific history and development of the CalCOFI and BATS time series programs and included a practical component.

Coastal Ocean Monitoring and Ecological Time Series (COMETS) was carried out by Drs. John Largier and Juan Carlos Castilla. This course addressed the scientific, statistical and operational aspects of monitoring, i.e. sustained observations in the coastal ocean and along the coast. Oceanographic, biological and pollution phenomena and processes were addressed through lectures, readings, working groups, student presentations and discussions.

The course Ecology and Diversity of Marine Microorganisms (ECODIM) celebrated its seventh anniversary. A number of foreign and Chilean scientists provided an overview of microbial oceanography by illustrating basic concepts which are applied today to understand the ecology of marine microorganisms and the roles they play in global biogeochemical cycles. The lectures, the selection of seminar papers and the course research projects focused on the diversity of microbes in saline ecosystems, in particular metagenomics, phylogenetic taxonomy, microscopy, flow cytometry, culturing techniques and geochemical bio-thermodynamics.

The Austral Summer Institute continues every year to contribute to capacity building in Latin America, allowing the development of networks among local and visiting scientists and students.

*This article was provided by Monica Sorondo and Silvio Pantoja (UNESCO IOC Chair Oceanography), COPAS Sur-Austral, University of Concepcion.*



"I came back from ASI XII reinvigorated with new research ideas, new perspectives on my field, and new friends and colleagues."  
*Valéria C. Prando, Master in Meteorology, University of Sao Paulo, Brasil.*



"The courses of the Austral Summer Institute had a high academic level and scientific quality. It was a great opportunity for me to be able to participate in the ones devoted to Time Series in Oceanography."  
*Andrea Corredor, Colombia, M.Sc. Program in Oceanography, University of Concepcion, Chile.*

"Another important aspect was the contact with other students also doing masters or doctorates in different areas. The group presentations were really important to stimulate discussion and consolidate ideas suggested during classes."  
*Felipe Maneschy, M.Sc. Student in Physical Oceanography, University of Sao Paulo, Brasil.*



"It was really inspiring to interact with top scientists both in lectures and during lab work. I really hope this course continues motivating and helping lots of students in the future."  
*Fernando Sorroche, PhD Student in Biological Sciences, Universidad Nacional de Río Cuarto, Argentina.*



## Update on POGO capacity building (cont'd)

### NF-POGO Centre of Excellence Regional Training in India

*The following article was provided by Gerry Plumley, who coordinated the regional training course.*

India is clearly a country poised to take on a much larger role in operational oceanography and marine research. Scientists from the Indian National Centre for Ocean Information Services (INCOIS), the National Institute of Oceanography (NIO) and Andhra University (AU) hosted a regional training program (5–26 February 2012) as part of the NF-POGO Centre of Excellence in Observational Oceanography (CoEEO). The title of the training programme was "The Application of Ocean Colour Remote Sensing in Primary Productivity and Ecosystem Modelling". Dr. T. Srinivasa Kumar was the lead scientist who worked closely with Dr. Aneesh Lotiker, both of INCOIS, to organize the overall training programme and provide intellectual stimulation and logistical support. Drs. K. Gopala Reddy, V.V.S.S. Sarma, P. Rajendra Prasead, and Nittala S. Sarma, all from NIO/AU, played an equally important role, providing academic and logistical support for the field work



Different aspects of the training course

component carried out in Visakhapatnam. The training course could not have happened without strong support from the Director of INCOIS, Dr Satheesh Shenoi.

There were 23 trainees selected for the training programme, including 18 from various universities and/or government labs in India, plus students from China, Kenya, Indonesia, and Tanzania. Trainees were selected using rigorous criteria that included prior and/or on-going expertise in remote sensing and/or ecosystem modelling. The trainees were all of a very high calibre and the programme was taught at an advanced level.

The first two weeks of the training programme were carried out in the new and still-expanding high-tech INCOIS facility in Hyderabad. A tour of the facilities provided trainees with insights into

the rapid advances that India has made in becoming the regional centre for remote sensing and other topics related to operational oceanography, notably the Indian Ocean Tsunami Early Warning Centre and the Potential Fishing Zone Advisory. Trainees attended a series of lectures and practicals on topics related to remote sensing and primary production led by Drs. Trevor Platt and Shubha Sathyendranath (PML) and Dr. Mini Raman (ISRO). Dr. Bala Krishna Prasad (Univ Maryland) and Dr. P.S. Swathi (CMMACS, Bangalore) provided lectures and practicals on ecosystem modelling

In Visakhapatnam, trainees went out in the Bay of Bengal to take optical measurements and collect water samples for analysis in the laboratory. Trainees spent several days learning laboratory techniques, ranging from sample processing to analysis (e.g. fluorometry, absorption, HPLC).



Group of students and instructors who participated in the NF-POGO regional training course in India.

Trainees started working in pairs on mini projects at a very early point in the training programme and worked continuously throughout the three weeks to finalize their projects. Mini projects were locally relevant; oral presentations were given near the end of the training programme. Overall, it was a very successful and productive training programme. A valedictory function was held at the Bay of Bengal Center, which was very moving.

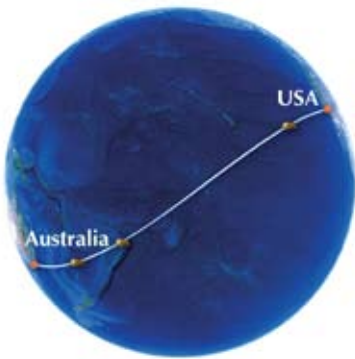
Following the training programme, the author travelled to Cochin, where he toured the regional NIO lab, Cochin University, the Centre of Marine Living Resources and Ecology (CMLRE), and the research vessel, *Sagar Sampada*. Local hosts, Drs. Parameswaran and V.N. Sanjeevan, were very friendly and provided details on current research and education initiatives as well as plans for the new CMLRE building and a replacement research vessel, both due for completion in about one year. This tour and insight into future plans provided further proof that India is poised to take on a much larger role in regional ocean observation, research, and education.

## News from the POGO members

### Transcontinental Fiber Optic Cable Line to Boost Science

*Scripps researchers part of collaboration to aid studies of earthquakes, tsunamis and other forces*

Scientists from Scripps Institution of Oceanography at UC San Diego and their colleagues have embarked on a new project aiming to integrate scientific instruments into thousands of miles of seafloor communication cables across the Pacific Ocean. The project could dramatically advance scientists' ability to observe and study ocean processes, provide early alerts for potential disasters and study deep Earth geodynamics.



An illustrative depiction of a transcontinental fiber optic cable line. Credit: Scripps Institution of Oceanography, UC San Diego.

The collaboration between Scripps researchers, NOAA's Pacific Marine Environmental Laboratory (PMEL), and TE SubCom would be the first to deploy cable installations from a commercial telecommunications company with embedded science sensors. The initial project is envisioned along a cable route spanning 12,950 kilometers (8,105 miles) from Sydney to Auckland and across the Pacific Ocean to Los Angeles (see figure).

"More than 70 percent of the world is water and we need to understand much more of it," said John Orcutt, a distinguished professor of geophysics

at Scripps and one of the leaders of the project. "This collaboration provides us with a whole new world of capability. If it expands to other oceans it could change the face of oceanography."

Fiber optic cables are capable of transmitting data at a maximum of 40 gigabits per second from areas where gaps of coverage currently exist. For comparison, the entire print collection of the Library of Congress could be transmitted over the link in just more than 30 minutes. Scientific ports along the cable line are envisioned with seismometers, pressure gauges and temperature sensors for hazard warning and mitigation. The sensors could allow NOAA scientists to more precisely measure the size and direction of tsunamis and to more quickly alert disaster management officials and first responders.

Eventually the cable lines could include a comprehensive suite of sensors such as climate instruments to measure ocean warming. Collected data will be open and available to the global scientific community.

This article was provided by Mario C. Aguilera, Assistant Director of Communications, Scripps Institution of Oceanography, UC San Diego.

## Symposium Announcement

### Oceans and Society: the Blue Planet

We are pleased to inform you that a kick-off symposium for the new GEO Task SB-01 "Oceans and Society: the Blue Planet" will be held at the Itapemar Hotel, Ilhabela (<http://www.itapemar.com.br/english>), São Paulo, Brazil, from Nov 19 to 21, 2012. The symposium takes place just prior to the GEO-IX Plenary, to be held in Foz do Iguaçu, Brazil (Nov 22-23).

The Blue Planet Task has four main components: C1 Global Ocean Information Coordination and Access; C2 Operational Systems for Monitoring of Marine and Coastal Ecosystems; C3 A Global Operational Ocean Forecasting Network; and C4 Applications of Earth Observations and Information to Sustainable Fishery and Aquaculture Management. The Symposium will highlight each of these components through special sessions on their programme elements. For example, there will be sessions on GOOS and the Framework for Ocean Observing, GEOBON (marine), SAFARI, ChloroGIN, OceanSITES, Capacity Building, Operational Oceanography in Brazilian Regional Waters. The full program will be finalized in the next few months and suggestions are welcome.

For those already engaged in the Blue Planet Task, the symposium will offer an opportunity to become familiar with the full scope of its activities, to help develop synergies and linkages, and to plan future involvement. For those not yet engaged, it is a chance to see where you might fit in to participate in the exciting expansion of GEO into the marine sphere. Please send initial expressions of interest to Trevor Platt ([tplatt@dal.ca](mailto:tplatt@dal.ca)), with a copy to Li Zhai ([Li.Zhai@phys.ocean.dal.ca](mailto:Li.Zhai@phys.ocean.dal.ca)).

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