

Partnership for Observation of the Global Oceans (POGO)

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1. Project Summary

The Partnership for Observation of the Global Oceans (POGO, <http://ocean-partners.org>) was founded in 1999 as a consortium of the major oceanographic institutions around the world, represented by their Directors. As stated at the founding of POGO, the objective of POGO is to make a major contribution to the attainment of sustained *in situ* observations of the global ocean that meet the requirements of international research and operational programs. As a means of attaining this objective, POGO:

- Initiates key actions to enable effective coordination, integration, and implementation of international ocean observing strategies;
- Establishes collective agreements among institutions to promote timely developments in ocean science;
- Develops and promotes coordinated views of ocean institutions concerning ocean observation and science to governments, international bodies, and others;
- Facilitates linkages between oceanographic research and operational institutions in relation to their goals, plans, and programs;
- Undertakes capacity building;
- Promotes sharing of facilities and infrastructure;
- Encourages interdisciplinary use of observing infrastructure;
- Conducts public outreach.

POGO provides a forum for Members to meet with their peers, and with senior officials of partner organisations, to discuss issues of mutual concern. It also serves as a credible voice for the marine science community, through its leadership role in the informal grouping Oceans United (<http://www.oceans-united.org>), and as an advocating body for the establishment of an integrated, global ocean observing system. The activities supported by NOAA include:

- Execution of the annual meetings of POGO;
- Selection process for the Visiting Fellowship and Professorship programmes; and
- Communication with the POGO community (newsletter and websites).

2. Scientific and Observing System Accomplishments

2.1. Annual meetings of POGO

POGO is a consortium of major oceanographic research institutions worldwide, typically represented at the Director level. POGO members have the opportunity to meet once a year during 3-day meetings hosted by a member institute. These meetings provide the opportunity for reporting on activities carried out during the previous year and discussions of strategic issues related to global ocean observations, and forward planning for POGO.

The 15th POGO Annual Meeting was hosted by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Institute for Marine and Antarctic Studies (IMAS), from 22 to 24 January 2014. Some 23 of the 37 POGO member institutions were represented, as well as representatives from other organisations such as the Group on Earth Observations (GEO), the Scientific Committee on Oceanic Research (SCOR) and the Intergovernmental Oceanographic Commission (IOC).

Action items from the meeting included:

- To continue to support and reinforce POGO's on-going capacity building activities.
- To continue development and leadership of the Blue Planet Task of the Group on Earth Observations (GEO) including the Second Symposium to be held in 2015 in Cairns, Australia.
- To work with SOOS, ODIP, COMNAP and JCOMMOPS to coordinate the various ship schedule databases, building on the work POGO has carried out to date through BODC, with support from NOAA.
- To discuss different ways to engage with industry, and organize a session on this topic at the next POGO Meeting.
- To organize the next POGO Meeting in Tenerife, Spain, in January 2015.

2.2. Selection process for the Visiting Fellowship and Visiting Professorship programmes

Lack of trained personnel is considered to be a major obstacle to development of a global ocean observing system. Therefore, a central element of the POGO agenda is capacity building and training. POGO has developed an extensive array of training and education activities targeted primarily at scientists from developing countries and those with economies in transition. In partnership with the Scientific Committee on Oceanic Research (SCOR), POGO has developed a Visiting Fellowship programme on Oceanographic Observations (<http://ocean-partners.org/training-and-education/pogo-scor-fellowship>) under which young professionals from developing countries can spend up to three months training in their speciality at a major oceanographic institution. This programme has been very successful in providing training for scientists and students from developing countries as well as in developing collaborations between institutes.

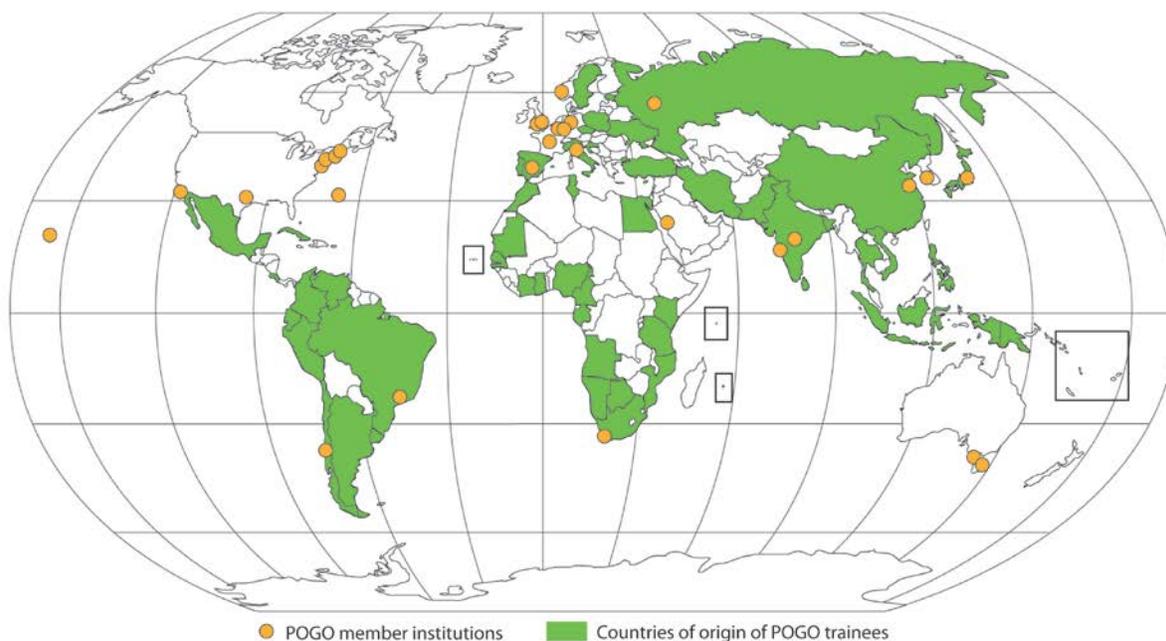


Figure 2. Map showing the countries of origin of trainees from the whole suite of POGO training programmes, as well as the locations of the POGO member institutes.

The fellowship programme has just completed its fourteenth year. This year saw a total of 48 applications from 24 countries, slightly more than the previous year.

The applications were screened independently by a committee of four, 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.

Summary information on the 2014 Fellowships is provided in the table below.

| | Fellow | Parent institute | Host institute | Subject of Study |
|---|-------------------------|--|---|--|
|  | Georgina Daniela Cepeda | National Institute for Fisheries Research & Development (INIDEP) Argentina | University of Hawaii at Manoa, USA | Metagenetic methods for time series monitoring of zooplankton biodiversity in the Argentine Sea |
|  | Sunita Pandei | National Institute of Oceanography, Goa, India | Institut de Ciencies del Mar (ICM-CSIC), Barcelona, Spain | How to organize, maintain and get the most from a Fixed-Point Time-Series Coastal Observatory for marine microbial ecology and biogeochemistry, with emphasis on the contribution and potentialities of single cell biogeochemistry techniques |
|  | Issufo Halo | University of Cape Town, South Africa | Nansen Environmental and remote sensing center, Norway | Modelling the mesoscale ocean circulation in the southwest Indian Ocean |
|  | Lilian Anne Krug | University of Algarve, Portugal | Plymouth Marine Laboratory, UK | Delineation of biogeochemical provinces in SW Iberia |
|  | Manoj Kumar Mishra | Space Application Centre (ISRO), Ahmedabad, India | Plymouth Marine Laboratory, UK | Evaluation of various methods for retrieving inherent optical properties in case-2 waters using ocean colour data. |

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|---|--|---|---|--|
|  | <p>Mochamad Furqon Azis Ismail</p> | <p>Indonesian Institute of Science, Indonesia</p> | <p>Lamont-Doherty Earth Observatory, Columbia University, USA</p> | <p>Interannual variability of Makassar Strait throughflow from moored and archived hydrographic data</p> |
|---|--|---|---|--|

This year's Visiting Professorship programme was held at the Center for Marine Studies, Federal University of Parana, Brazil, from 19 October to 3rd November. The visiting professor was Renzo Mosetti from OGS, Trieste, Italy. The course was organized in lectures, practical activities, mainly processing observational data, including a field trip to the Paranaguá Bay for doing observation of currents with electromagnetic and acoustic devices, and water properties with CTD. Students learnt about efficient and innovative monitoring systems based on: fixed stations, meteo-oceanographic buoys, satellite and airborne remote sensing data, drifters and coastal HF radars. Analyses included case studies from the Gulf of Trieste (ITALY) where an integrated monitoring system is active. The funding from POGO (5K GBP) was used to leverage local/regional funds that allowed participants to travel from different parts of Brazil as well as Argentina, Columbia, Peru and Uruguay. A total of 49 "official" participants attended the course, as well as a number of local students who attended certain parts of the course that were relevant to their studies. The course was such a success that the host is planning to repeat it again next year.

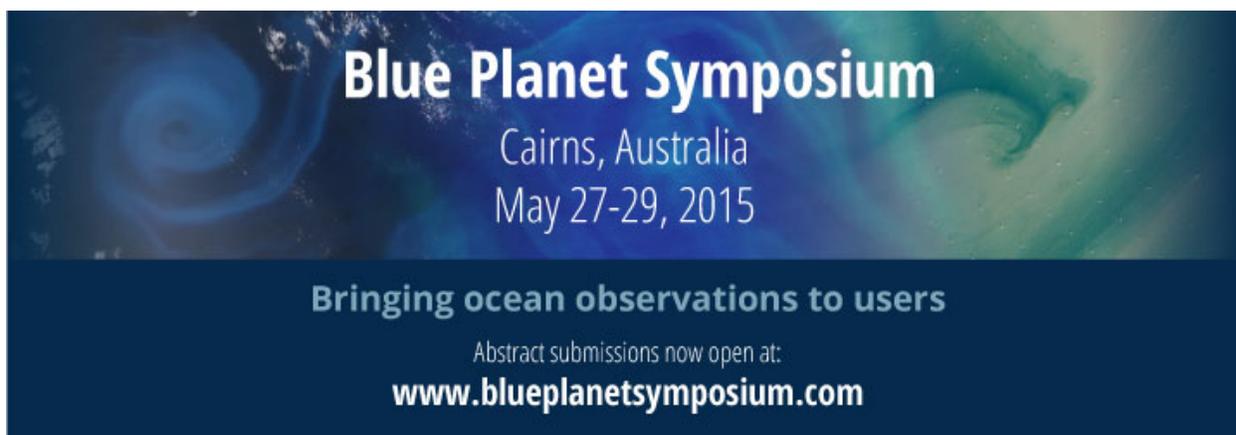


Visiting professor and students at the training course in Parana, Brazil.

2.3. Development of Blue Planet

POGO led the creation of the “Oceans and Society: Blue Planet” Task within GEO in 2012, and organized the Kick-Off Symposium for this initiative in November 2012. In 2013-2014 POGO continued its efforts to further develop the programme:

- A website (www.oceansandsociety.org) and a Twitter account have been created.
- The “Oceans and Society: Blue planet” book has been published, based on the papers presented at the Kick-Off Symposium.
- Two new Components have been added to the Task, and the Task structure reorganized and refined.
- A White Paper has been written, outlining the structure and scope of the Task.
- A Steering Committee has been formed, which held its first meeting in July 2014, in Geneva.
- The 2nd Blue Planet Symposium has been announced; it will be hosted by CSIRO in Cairns, Australia, in May 2015 (see www.blueplanetsymposium.com).
- A proposal has been submitted to the European Commission, including funding for support of a Secretariat for Blue Planet coordination, and another proposal is in preparation.



3. Outreach and Education

POGO is very active in the areas of public outreach and training and education. Capacity building is a central element of POGO’s agenda (see previous section), with a suite of programmes that have so far trained around 600 scientists from over 70 countries. Public outreach is conducted through participation in international exhibitions, including GEO Ministerial Summits, United Nations Climate Change Conferences (e.g. Lima in 2014), and World Expo. POGO also participated in a public conference on climate change organized by the Surfrider Foundation in December 2014, where the POGO Executive Director gave a presentation on climate change and ocean observations. She also participated in the Ocean and Climate Platform workshop the following day, whose aim is the inclusion of the ocean in the climate negotiations at COP-21 (Paris, Dec 2015).

POGO regularly issues press releases and “declarations” in conjunction with major events such as GEO Summits and POGO annual meetings to raise public awareness of the importance and societal relevance of ocean observations (see <http://ocean-partners.org/index.php/products/pogo-documents>). The former Director of POGO also gave a presentation on ocean partnerships at the World Research and Innovation Congress –Oceans in Lisbon in October 2014, and gave an interview that was published in the International Innovation magazine.

The POGO Secretariat produced its quarterly newsletter in October 2013, January, April and July 2014. The four- to eight-page electronic newsletter is distributed to the POGO members and wider community, and includes updates on POGO activities and news from the POGO members. The aim is to keep the members informed between annual meetings of progress made on issues that were discussed during the meetings, such as participation in the Group on Earth Observations (GEO), outreach, capacity building, partner programmes and so on. Another objective is to inform the wider community, and in particular funding agencies and scientists within the POGO member institutions, of POGO’s achievements. These newsletters are always very well received. Occasionally, the newsletters are printed for distribution at special events.

The POGO Secretariat maintains the POGO website (www.ocean-partners.org). This involves posting information on POGO meetings, announcements, news from the members, job vacancies, a conference/meeting calendar, and training opportunities, to name but a few. The Secretariat has created and maintains a number of other websites for associated activities, namely the NF-POGO Alumni Network for Oceans (NANO) website (www.nf-pogo-alumni.org), the Oceans United website (www.oceans-united.org) and the new Blue Planet website (www.oceansandsociety.org). The POGO website also includes links to on-line educational resources for the general public that can be used for example by teachers (<http://ocean-partners.org/index.php/outreach>).

4. Publications and Reports

4.1. Publications by Principal Investigators

Seeyave S, Sathyendranath S, Platt T., Cheung V (2014). Towards sustained ocean observations in developing countries. In: Djavidnia S, Cheung V, Ott M, Seeyave S (Eds), *Oceans and Society: Blue Planet*, Cambridge Scholars Publishing, ISBN: 978-1-4438-5639-3.

Note: Two of the project PIs (Seeyave and Chueng) were also Editors of this book.