Nippon Foundation - POGO Alumni Network for Oceans (NANO)

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http://www.nf-pogo-alumni.org
http://ocean-partners.org

What is POGO?

• A forum in which Directors of major oceanographic institutions can meet with their peers, and with senior officials of partner organisations, to discuss issues of mutual concern and plan appropriate action.

• Supported by annual dues subscribed by Members, and by grants from charitable foundations.

• Secretariat (executive arm of POGO) hosted by PML.
POGO Mission:

- To demonstrate the value of world-wide cooperation in oceanographic observing and Earth system science for the benefit of society.

- To promote global oceanography, in particular:
  - sustained, long-term, ocean-observing systems;
  - shared use of infrastructure data and information;
  - capacity building;
  - public outreach.

Enhancing involvement of developing countries is part of the overall strategy.
Scope of NF-POGO Capacity Building

231 POGO trainees from 38 countries.

POGO Capacity Building Programmes

- POGO-SCOR Fellowship Programme
- Fellowships for training on research vessels (AMT, PAP)
- University of Cape Town Bursary for Graduate Studies
- University of Concepción Austral Summer Institute
- POGO Visiting Professorships
- NF-POGO Centre of Excellence (Phase 1: Bermuda Institute of Ocean Sciences; Phase 2: Alfred Wegener Institute, Germany)
- Regional training programme (Part of CofE programme)
- NF-POGO Alumni Network for Oceans (NANO)
Long-term impact of training

NF-POGO training (particularly CofE) has enabled many alumni to obtain PhD scholarships abroad, or permanent jobs in their home countries. Alumni from earlier training courses now occupy very senior positions in their home countries (i.e. sustained capacity building); e.g:

- Deputy Director General of Fisheries (Indian Council of Agricultural Research) - 8 institutes
- Director of Mauritian Oceanography Institute
- Director of Institute of Marine Sciences Zanzibar (Univ. Dar Es Salaam, Tanzania)
- Vice-Chairman Intergov Coordination Group for IO tsunami warning and mitigation system; Chairman IOC-UNESCO Inter-ICG Task Team on tsunami watch operations

Evidence that trainees are become trainers; e.g. Group of alumni taught at GEOSS in the Americas workshop on remote sensing in Cartagena, Columbia (Nov. 2011).

Why an Alumni Network?

- The Nippon Foundation, through its partnership with POGO, has provided professional training in observational oceanography to over 200 young scientists from around the world (mostly developing countries), since 2005.

- Networking was always a priority for the joint NF-POGO initiatives and both the NF and POGO wanted the benefits of the training to extend beyond the formal training period.

- The goals of the network are:
  - to maximize the benefits to the alumni from the training received;
  - to facilitate active contacts among alumni and with the faculty;
  - to promote joint research activities that will build on the training.

- NF-POGO alumni are the future leaders in their field and collectively, they can tackle the issues facing oceans and society today and in the future.
Graduation address by Prof. Tom Malone, May 2011:

“It is important that the network function on several levels:

• 1st, it should keep you informed about what your colleagues are up to & how the ocean around you is changing.

• 2nd, it should broaden your horizons by facilitating contacts among past & future alumni of this program as well as alumni from the regional Centers of Excellence & the Visiting Professorship Training Programs.

• 3rd, it should help the alumni create an ocean literate society & a ground swell of support for sustained implementation of ocean observing systems that will help each of your countries anticipate, manage & adapt to the changes occurring in your coastal ecosystems.”

Why an Alumni Network?

• A Planning Meeting (funded by NF) took place in Oct 2010 to discuss the formation of an Alumni Network and possible Alumni Meeting.

• After the meeting NF-POGO awarded 2 fellowships to former scholars from the CofE to help the Secretariat (remotely) develop the Network.

• These fellowships proved to be very effective in:
  - Engaging the interest of the alumni,
  - Providing support to the Secretariat to make rapid progress in the network development.

How was the Network created?

Lilian Krug (Brazil)  Olga Shatova (Ukraine)
NANO Structure

Structure of the network as envisaged at London Planning Meeting

London Meeting
Royal Society, Oct 2010

Global NF-POGO network

POGO secretariat

Bermuda CofE

Regional coalition
Regional coordinator

Research + Other projects

Dissemination of knowledge

Workshops

Outputs (publications)

Training

Physical

Chemical

Biological

Bio-physical interaction

Inter-regional meetings

Website

Newsletter

Data base (scholars)
• Between Feb 2011 and Feb 2012, 232 Alumni were sent a questionnaire on their current education/employment, publications, conferences attended, projects etc.

• The response from the alumni of the Bermuda CofE (2008-2011) is 100%, and for the regional CofEs (2009-2012) 79%.

• The information provided by the alumni has been entered in an Access database.
The main joint NPGO initiatives have been:

1. **Visiting Professorship Program.**
   - This program was established in 2005 to allow distinguished professors of renowned oceanographic institutes to teach young scientists in developing countries. One of the aims was to promote collaborations and networking among institutions of developing and developed countries. The programme often allowed the donation of a piece of scientific equipment to the host institution so

   - Articles by NANO Friends
   - Articles by alumni outlining their research interests
   - Progress updates on NANO
   - Meeting announcements.

NANO Research Projects

The main goal of the network is to encourage and facilitate international collaboration. A meeting was held in Abingdon, UK, from 26 to 28 Sept 2011 to prepare these proposals. In preparation for this meeting, a call for project outlines was issued to all NF-POGO alumni; 20 were received. Four regional proposals were prepared in Abingdon and submitted to NF for funding in 2012.

Indian Sub-Continent

Monitoring the coastal waters of India and Sri Lanka for the occurrence of HABs.

Objectives:
- Study of the dinoflagellates community structure with reference to HAB species and dissolved phytotoxins in the coastal waters of Indian and Sri Lankan subcontinent.
- Use of remote sensing and bio-optical properties to understand HABs in this region.

South-East Asia

Validation of a Harmful Algal Bloom Remote Sensing Model (RS-HAB) for SE Asian Region using time-series data from Vietnam

Objectives:
- Validate, refine and apply the RS-HAB model developed in the Philippines.
- Continuation of the Mekong Delta time-series.
Latin America
Pigment analysis using HPLC in ANTARES Network coastal time series stations (Latin America)
✓ Quantify pigment concentrations using advanced High Pressure Liquid Chromatography in five selected ANTARES stations as an initial step for the future implementation of Phytoplankton Functional Types studies.
✓ To complement HPLC studies with the use of remotely sensed ocean colour measurements.

North-West Africa
Monitoring coastal pollution and erosion of Northern and Western Africa
✓ Define the problems in the field of monitoring of chemical pollution and erosion in Northern and Western Africa.
✓ Develop common guidelines for monitoring erosion and pollution in coastal areas that will include basic measurements relevant to resources available in the region.
✓ Gather the available data on sediments and chemical pollutants in Tunisia, Ivory Coast, Ghana, Nigeria, Senegal and Burkina Faso with the prospect of adding data from other 'Alumni countries' where similar type of measurements are performed.
✓ Compare levels of coastal erosion and chemical pollution in these regions.

NANO Research Projects

First workshop in Senegal (Dec 2012); group split into 2 (erosion and pollution) and proposal for erosion project was written

• Data Compilation (selected erosion sites):
  o Bathymetry;
  o Wave;
  o Wind;
  o Sediments, Beach Profiles.
• Wave refraction model (selected erosion sites);
• Virtual networking;
• Tunis Workshop (H. Smetti, A. Attaoui & ENIT);

NANO Research Projects
North/West Africa
Present baseline studies for each site:
- Site description;
- Available met-ocean data;
- Discuss data;

Wave climatology model:
- MIKE 21 – SW
- Discuss wave and wave refraction results;
- Discuss DATA and MODEL issues/gaps;
The main objective of N-NHG first stage project is to set up sustainable nearshore erosion monitoring observatories in Angola, Ivory Coast and Tunisia (one in each country). The data will provide invaluable information to set up a Swell/Storm Early Warning System (SEWS), will improve our understanding of the role of local and remote forcing wave generation and its impacts along West and North African coasts. In addition, the observations will be the pillar of the modelling effort (stage 2).

Specific Objectives:
1) Set up one observatory in each country (Angola, Ivory Coast and Tunisia), observations include: wave/tide, wind and atmospheric pressure, bathymetry/beach profiling surveys and sediment analysis.
2) Using historical, remote sensing data and WW3 model output, set up Swell/Storm Early Warning System (SEWS) for western and northern Africa. Improve SEWS using observatories new data.
3) Ivory Coast workshop: networking, capacity building (“hands on” observatory and data analysis) and societal benefits (SEWS).
4) Identify N-NHG countries needs in terms of numerical modelling and select best option that fits all members.

NANO Research Projects
Latin America

Summary of 2012 achievements

1. Strengthening NANO & ANTARES interaction
   Latin American Regional Project page (NANO Wiki)
   NANO and ANTARES websites updated
   NANO News hard copies will be delivered at some ANTARES institutions
   Two ANTARES stations without NANO Alumni got involved in the project.
   Students at INIDEP, INPE, CIOH and IMARPE made aware of POGO training initiatives.
NANO Research Projects
Latin America

Summary of 2012 achievements

2. Implementation of HPLC sampling

Adoption of a common protocol
Liquid nitrogen thermo acquisition & liquid nitrogen provision to Cartagena station
Pigment composition will be analysed for the first time in 5 out of the 6 participant stations.
Important contribution to SeaBASS database

NANO Research Projects
Latin America

New equipment acquired

Thermo Fisher Scientific Biocane CK509X3

Cartagena PI Dr Mary Luz Páez Cañón
Summary of 2013 achievements

• Workshop held in Margarita Island, Venezuela
• Lectures were offered by the special guests and experts from the participating stations.
• Discussion of recommendations for HPLC analysis, and possibilities for carrying out these analyses in Latin America.
• An outline was written for a manuscript on the data already analysed.
• An ad-hoc Antares meeting was held.
• New samples were taken to Margarita by all participants for shipping to NASA laboratory.
The status of pigments analysis at each station is as follows:

- **Ensenada (Mexico)**: running HPLC analysis within their own laboratory.
- **Ubatuba (Brazil)**: They do not have an HPLC. They have however some possibilities to work in collaboration with other laboratories.
- **Cartagena (Colombia)**: They are in the process of buying an HPLC.
- **IMARPE (Peru)**: There is an HPLC system at another laboratory and they have already made an agreement to start analyzing pigments samples from their time-series.
- **EPEA (Argentina)**: They have an HPLC system, and they have already analyzed some samples.
- **CARIACO (Venezuela)**: They do not have an HPLC, the only data available has been analyzed by NASA for 15 years.

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**Future Directions**

- 'Ensenada' (Mexico) (Roberto Millan-Nuñez, Eduardo Santamaria del Angel, Adriana Gonzalez-Silvera) was selected to coordinate the next project.
- To include other stations (e.g. from Chile, Ecuador and south of Argentina) in the next stage of the LA-NANO.
- Proposal from the group to the Inter-American Institute for Global Change Research has been successful “Assessment of Marine Ecosystem Services at the Latin-American Antares Time-Series Network” (700K USD for 4 years).
- It will be interesting to make a link with the next LA-NANO project.
Outreach project (proposal for 2014)

1. Online Catalogue of Education Materials for NANO
   Contributions/ppt lectures from NANO members.
   Each regional project has a presentation on social benefit of the project.
   Create a discussion forum.
   Translate materials into different languages.

2. NANO outreach proposals
   Call for proposals from alumni to do outreach in schools visits etc.
   Create a template for proposal
   Financial support to alumni going to schools.
   Report (photos, videos, short article), receipts.
   Network component -how the applicant will share resources and experience with other alumni
   Sustainability -how to sustain this outreach within the country if there is no further funding? Whether the project can be repeated in other countries.
   Assessing impact of the outreach (feedback/survey form from an organizer and participants).

3. Printing/supply of outreach materials
   • Printing/internet not always readily available in developing countries.
   • Standardized outreach materials such as posters, stickers, magnets, flyers etc. to be developed and supplied to alumni on request.
   • Any donations from POGO members? (e.g. pens, stickers etc)
   • Develop an educational poster to distribute to schools.
Outlook

Strengths
✓ NANO is the “Future POGO”
✓ Many very bright and motivated young scientists
✓ Enthusiastic engagement of high-profile NANO “friends”
✓ Not just about “networking”, also conducting/协调研究
✓ Helping deliver POGO mandate of expanding ocean obs to S. Hemisphere and to developing countries in general.

Achievements
✓ More and more members are actively participating.
✓ Some very nice products (e.g. NANO newsletter).
✓ Many new countries have joined with latest CofE batch; new region (Pacific) starting to become interested.
✓ Regional projects taking off.
✓ New project on outreach beginning.

Outlook

Challenges
✓ Close monitoring of projects by Secretariat required.
✓ Reporting to Nippon Foundation.
✓ Research project budgets must be carefully managed/monitored.
✓ Collaboration between countries not always easy.
✓ Young scientists inexperienced with proposal writing and project management.
✓ In some cases progress hindered by hierarchy.
✓ Need committed senior scientists but danger of them doing too much of the work.

Significant time commitment for POGO Secretariat