



Partnership for Observation of the Global Oceans

Newsletter

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POGO Capacity Building News

New Nippon Foundation-POGO Centre of Excellence in Observational Oceanography at the Alfred Wegener Institute for Polar and Marine Research for 2013

The Nippon Foundation visits Helgoland

Following the successes of the first phase of the Nippon Foundation-POGO Centre of Excellence in Oceanography (NF-POGO CoE) which was hosted by the Bermuda Institute of Ocean Sciences from 2008-2012, this year sees the start of Phase II of the programme. The principal goal of the programme is to expand the capacity world-wide, especially, but not exclusively in developing countries, to observe the oceans and so address many current societal issues. Another goal of the programme is to identify and develop excellent young scholars who will participate in the global network of NF-POGO trainees and become leaders in their field.

Five strong proposals were submitted to host the new Centre of Excellence and following independent evaluation from each committee member and much discussion with the Nippon Foundation, the successful proposal selected was that submitted by the Alfred Wegener Institute for Polar and Marine Research (AWI).

Representatives from the Nippon Foundation and the POGO Secretariat visited Helgoland last month to meet with Prof. Karin Lochte and Prof. Karen Wiltshire and other members of staff from AWI.

The new NF-POGO Centre of Excellence in Observational Oceanography at AWI is now open for applications for this year's training. Applications are invited from trainees from emerging and developed countries with at least a bachelor's degree in science. Ten scholars per year will be trained at the NF-POGO CoE at AWI in integrated, multi-disciplinary oceanography. Scholars will receive ten months of training to include one month of formal introductory training, followed by detailed courses emphasising core skills and specialised scientific topics such as modelling, remote sensing, ocean-atmosphere interactions as well as training in instrumentation, sample collection and analytical protocols. The NF-POGO CoE at AWI will be conducted in Helgoland with focus on open-ocean sciences and also in Sylt where shelf/basin interactions are topics of study.

Details and application forms for those wishing to apply for a place at the NF-POGO Centre of Excellence at AWI can be found at: www.awi.de/NF-POGO-AWI-COE. Early applications are encouraged and should be submitted by 31st August.



L-R: Prof. Karen Wiltshire, Mr. Kentaro Ogiue, Dr. Shubha Sathyendranath, Prof. Trevor Platt, Prof. Karin Lochte, Ms. Keiko Shinozaki.
Photo Credit: POGO



ALFRED-WEGENER-INSTITUT
HELMHOLTZ-ZENTRUM FÜR POLAR-
UND MEERESFORSCHUNG



POGO-AMT Fellowship 2013



The successful candidate for the POGO Visiting Fellowship for training on-board an Atlantic Meridional Transect (AMT) cruise in 2013 is Ankita Misra from the National Institute of Oceanography, India. The title of her project will be "Understanding and evaluating the role of the phytoplankton community in the photosynthesis and primary production in the Atlantic Ocean". The programme, now in its 6th year, has proved to be 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.



Ankita Misra

Ankita 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 (17 Oct-30 Nov 2013, from UK to South America); and after the cruise will spend one additional month at PML, learning to analyse the results statistically and interpret them.

POGO Capacity Building Updates

POGO-PAP-GreenSeas Fellowship 2013

Updates from the Fellows who have completed their field work along the Porcupine Abyssal Plain



Two POGO-PAP-GreenSeas fellowships were awarded in this the inaugural year of the initiative. Bellineth Valencia from Colombia and Çağlar Yumruk-tepe from Turkey have both just completed their ship-board field sampling along the Porcupine Abyssal Plain on the National Oceanography Centre operated vessel RRS James Cook and are now back at their host institutes carrying out data analysis and processing.



Bellineth Valencia sampling onboard RRS James Cook

Bellineth Valencia's project is entitled "Copepods grazing and pellet production: are there changes in particulate production according to the sexual condition and vertical distribution?"

Speaking from the Technical University of Denmark, where Bellineth is being supervised by Dr. Marja Koski during the fellowship Bellineth said "For me, the participation in the cruise on board the RRS James Cook was unique, with no doubt it has been the best professional experience so far".

Çağlar Yumruk-tepe is studying the "Model-data integration of key nitrogen cycle processes" and is being supervised by Prof. Richard Lampitt at the National Oceanography Centre, Southampton and commented "We successfully made experiments on nitrate and ammonium uptake rates and on nitrification rates. The challenge continues now in Southampton to process the samples we have taken and we are hoping to get a better picture about the nitrogen cycle, and impacts of ocean acidification on it. It was a successful cruise for me, both in terms of science and an ocean experience, and I believe it was a particularly valuable opportunity to develop scientific contacts."



Çağlar Yumruk-tepe taking measurements onboard RRS James Cook on the PAP Cruise

News from the POGO members

A new research vessel SHINSEI MARU has joined JAMSTEC's fleet

R/V SHINSEI MARU replaces R/V TANSEI MARU

A new research vessel, SHINSEI MARU which has been under building at the Shimonoseki Shipyard & Machinery Works of Mitsubishi Heavy Industries, Ltd., was completed and delivered to JAMSTEC on the 30th of June 2013. R/V SHINSEI MARU is a replacement of R/V TANSEI MARU which retired in January 2013, and will play an irreplaceable role in the Tohoku Ecosystem-Associated Marine Sciences (TEAMS) project with her state-of-art functions in coastal waters (www.jamstec.go.jp/teams/).

TEAMS is a research program that contributes to restoration, in particular restoration of fisheries, in the Tohoku region by revealing the impact of the Great East Japan Earthquake on the marine ecosystems in the coastal and offshore waters, and the restoration process of the marine ecosystems. Led by JAMSTEC, Tohoku University, and the Atmosphere and Ocean Research Institute (AORI) of the University of Tokyo, TEAMS brings together marine science researchers to investigate the sea off Sanriku as a decadal program beginning in JFY 2011.

SHINSEI MARU is equipped with two azimuth thrusters and a dynamic positioning system and has a wide variety of observation systems and portable research equipments on board. She is expected to make a significant contribution in recovering the marine ecosystem and fisheries off Tohoku through comprehensive studies (efficient and effective marine environment observation, bathymetric survey and ocean-atmosphere research) she will conduct.

This article was provided by Aska Vanroosebeke, International Affairs, JAMSTEC.



JAMSTEC's new research vessel SHINSEI MARU. Photo Credit: JAMSTEC

Length: 66.0m

Beam: 13.0m

Designed full load draft: 4.5m (5.0m including sonar dome)

International gross tonnage: 1,629 tons

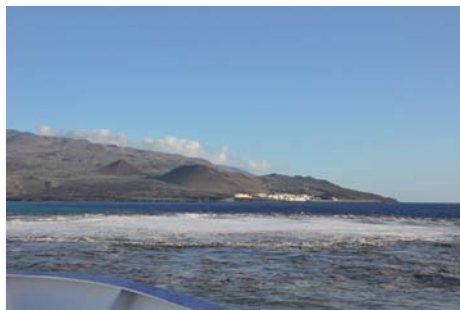
Cruising speed: 12 knots (max. speed 13.2 knots)

Accommodation: 41 (26 crew, 15 research personnel)

News from the POGO members (cont'd)

The submarine volcano eruption at the island of El Hierro: physical-chemical perturbation and biological response

Volcanic eruptions can help the understanding of the effects of future climate change



Submarine eruption at 1.8 km south of the island of El Hierro, Canary Islands, Spain on 5th November 2011. Photo Credit: IEO

On October 10 2011 an underwater eruption gave rise to a novel shallow submarine volcano south of the island of El Hierro, Canary Islands, Spain. During the eruption large quantities of mantle-derived gases, solutes and heat were released into the surrounding waters. More than 12 multidisciplinary cruises were carried out in order to monitor the impact of the eruption on the marine ecosystem and the results were published recently on two articles in Nature Scientific Reports (doi: 10.1038/srep00486 & doi:10.1038/srep01140).

The extreme physical-chemical perturbations caused by this event, comprising thermal changes, water acidification, deoxygenation and metal-enrichment, which resulted in significant alterations to the activity and composition of local plankton communities. Our findings highlight the potential role of this eruptive process as a natural ecosystem-scale experiment for the study of extreme effects of global change stressors on marine environments.

Active submarine volcanoes constitute a significant source of mantle-derived gases, solutes and heat to the ocean. During the eruption, volcanic emissions resulted in major physical-chemical alteration of the surrounding waters, such as warming, acidification and deoxygenation. These three processes are also the main stressors of global climate change, driven primarily by elevated anthropogenic release of carbon dioxide into the atmosphere. Global climate models predict for the next century a rise of 0.6°C in ocean surface temperature, a decrease of 0.3 – 0.4 pH units in surface waters, and a decline of 1 – 7% in the global ocean oxygen inventory. Marine organisms have already responded to these changes through variations in their distribution and survival, decreased calcification rates and alteration of diurnal and ontogenetic vertical migrations of pelagic communities. These effects directly impact the structure and functioning of marine ecosystem. But in the other hand, the results emerging from the second study show how the same volcano responsible for eradicating most of the marine life in the waters south of the island of El Hierro also provides the ingredients bringing the affected area back to life.

In this way, the volcano-affected area has exhibited responses that are occurring globally, making El Hierro into a unique natural laboratory where the principal climate change stressors are acting simultaneously. The results emerging from this volcanic eruption will help to improve our understanding of how future climate change may impact marine biota.

This article was provided by Eugenio Fraile Nuez, Instituto Espanol de Oceanografia (IEO)

Cuba and Norway – two coastal states, one model

Although their coastal landscapes and climatic conditions are completely different, as coastal states Norway and Cuba have a lot in common. They are both facing a great deal of pressure on their coastlines and the marine resources found there. The lobster is in particular need of action to reverse a steady decline in numbers.

Norwegian and Cuban scientists with backgrounds in oceanography and biology met in Havana spring 2013. The COLLABORATE project is designed to prepare Cuba for current extreme weather and future climate change.

The Institute of Marine Research and The Norwegian Meteorological Institute have developed regional ocean models that can be used in a coastal landscape that is varied, and at times challenging. In Cuba these models can help to optimize emergency planning for extreme weather events and oil spills, provide a basis for estimating the consequences of future climate change and be used to simulate the drift of eggs, larvae and juveniles for important marine species such as lobster and shrimp. – These models are of no use without sufficiently good data. This challenge was thoroughly addressed in Havana, says Erlend Moksness. He is a research director at The Institute of Marine Research, and the project manager for COLLABORATE.

Both in Norway and Cuba lobsters are heavily targeted, and both countries are experiencing sharp declines in their catches. Cuban spiny lobster catches have almost halved in recent years. – The decline may be due to a number of factors, explains Rafael Tizol Correa, who heads the Cuban fisheries research centre (CIP). The fishing pressure must take some of the blame. However, the intensity and frequency of tropical cyclones has also greatly increased in recent decades, and they may have destroyed important spiny lobster breeding and nursing grounds. Damming of rivers and other fresh water sources has altered the flow of fresh water and nutrient elements to the coast, and hence also the environmental conditions and food availability for the spiny lobster. With good models for the drift of juveniles and larvae, scientists hope to learn more about which areas are particularly important to the spiny lobster. That will be an important tool for efforts to rebuild stocks.

This article was provided by Marie Hauge Communication Adviser, Institute of Marine Research



COLLABORATE Scientists from Norway and Cuba. Photo Credit: IMR

News from the POGO members (cont'd)

Explorer and Filmmaker James Cameron Gives DEEPSEA CHALLENGER Sub to Woods Hole Oceanographic Institution



Susan Avery receives the DEEPSEA CHALLENGER submersible and a "Remove Before Flight" pin from filmmaker James Cameron. Photo Credit: Ken Kostel, WHOI

On June 14, filmmaker James Cameron delivered the DEEPSEA CHALLENGER, the only human-occupied vehicle currently able to access the deepest parts of the ocean, to Woods Hole Oceanographic Institution (WHOI).

Cameron said "WHOI is a world leader in deep submergence, both piloted and robotic. I've been informally associated with WHOI for more than 20 years, and I welcome this opportunity to formalize the relationship with the transfer of the DEEPSEA CHALLENGER submersible system and science platform."

Cameron's arrival in Woods Hole followed several days in Washington, D.C., in which he and WHOI President and Director Susan Avery participated in a series of events to highlight the need for continued federal investment in research and the achievements that are possible when publicly funded research is leveraged by investment by private individuals and organizations.

"The ocean plays a critical role in some of the toughest issues facing our nation and the planet," Avery said in testimony to members of the Senate Committee on Commerce, Science and Transportation. "We can improve our capacity to predict how the weather, climate and ocean will change and how we sustainably use ocean resources, but we need more and better observations over larger areas and greater time. We're working to improve our ability to gain those observations by building on our federally-funded research with private partnerships, but continued government support cannot be replaced."

Avery and Cameron also stressed the need to encourage science-focused imagination among today's youth, something Cameron hopes the DEEPSEA CHALLENGER will inspire by making the sub accessible to young people.

Cameron's team of engineers took seven years to design and build the DEEPSEA CHALLENGER for his solo dive to the deepest place on Earth—the Challenger Deep in the Mariana Trench. On his solo dive to 35,787 feet, he captured high-resolution 3D images and collected samples that have resulted in identification of at least 68 new species plus evidence of the deepest bacterial mats ever discovered.

WHOI envisions a range of uses for the DEEPSEA CHALLENGER system that will enhance research programs. WHOI scientists and engineers will work with Cameron and his team to incorporate the sub's numerous engineering advancements into future research platforms and deep-sea expeditions. Cameron has agreed to serve on the advisory board for WHOI's Center for Marine Robotics.

This article was provided by Stephanie Murphy, Manager of Public Information, Woods Hole Oceanographic Institution.

Rapid changes in the Arctic ecosystem

*Huge quantities of the ice algae *Melosira arctica* are growing on the underside of sea ice in the Central Arctic.*

In the late summer of 2012, an international expedition with the research vessel Polarstern was organised with scientists from 12 countries. It was found that the algae *Melosira arctica* which grows under sea ice was responsible for almost



Scientists collect samples from melting pools, the ice itself and under the ice. Photo Credit: Mar Fernandez, Alfred Wegener Institute

half the primary production in this area. Normally, small phytoplankton cells sink very slowly through the water column and are largely consumed within the ocean's upper layers. By contrast, the long chains of algae formed by *Melosira* are heavy and can quickly sink to the bottom of the sea to a depth of several thousands of metres. In the summer of 2012, the algae exported more than 85 per cent of the carbon fixed by primary production from the water surface to the deep sea. Deep sea animals such as sea cucumbers and brittle stars feed on the algae, and bacteria metabolise what remains, consuming the oxygen in the sea bed and resulting in anoxic areas on the sea floor. This short-term reaction of the deep sea ecosystem to changes in sea ice cover and ocean productivity has been published in the scientific journal Science (<http://www.sciencemag.org/lookup/doi/10.1126/science.1231346>) by a multidisciplinary team of researchers led by Prof. Dr. Antje Boetius from the Alfred Wegener Institute (AWI), Helmholtz Centre for Polar and Marine Research and from the Max Planck Institute for Marine Microbiology in Bremen.

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News from the POGO members (cont'd)

Using an ROV, the researchers found lots of remains of ice algae everywhere under the sea ice. "It has been known for some time that diatoms of the type *Melosira arctica* can form long chains under the ice. However, such a massive occurrence has so far only been described for coastal regions and old, thick sea ice", explains Boetius. When planning the expedition three years ago the researchers proposed the hypothesis that ice algae could grow faster under the thinning sea ice of the Central Arctic.

The researchers surmised that the algae had actually grown recently because they found one-year old ice in the Central Arctic, and because the algae extracted from the guts of sea cucumbers were still able to photosynthesise upon return to the ship's laboratory. The good nutritional state of the sea cucumbers was also evidence of the massive food supply: the zoologist Dr. Antonina Rogacheva of the P.P. Shirshov Institute of Oceanology noted that the animals were larger than normal and with highly developed reproductive organs – an indication that they had been eating abundantly for some two months.

Dr. Marcel Nicolaus from AWI explained: "At the end of the summer we still found a lot of ice algae remains, and could quantify them by using an under-ice ROV. The increasing cover by melt ponds permits more light to permeate the ice, and makes the algae grow faster." However, since the ice has become so much thinner in recent years, and the Arctic so much warmer, the ice algae will melt out more quickly from the ice and sink.



Melosira arctica algae under the sea ice.
Photo Credit: Mar Fernandez-Mendez,
Alfred Wegener Institute

Boetius said "We do not know yet whether we have observed a one-time phenomenon or whether this high algal export will continue in the coming years." Current predictions by climate models assume that an ice-free summer could occur in the Arctic in the next decades.

This was a collaborative expedition and included scientists from:

Alfred Wegener Institute for Polar and Marine Research, Max Planck Institute for Marine Microbiology, MARUM University Bremen, FIELAX Gesellschaft für wiss. Datenverarbeitung mbH, NIOZ Royal Netherlands Institute for Sea Research, and P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences.

This article was provided by Folke Mehrrens, Communications Department, AWI.

The UN and the impacts of ocean acidification

The Ocean Stress Guide is highlighted to the ICP

The 14th meeting of the UN Open-ended Informal Consultative Process (ICP) on Oceans and the Law of the Sea took place at the UN headquarters in New York (17-20 June), to consider the impact of increasing ocean acidification on the marine environment and people. Plymouth Marine Laboratory's (PML) Dr Carol Turley attended as part of the UK delegation, taking a lead role in expert panels and side events.

The meeting focused on scientific and technical aspects of ocean acidification. Participants heard from world-leading experts on the issue, sharing knowledge, challenges and solutions. The Secretary-General's report found that an emerging body of research suggests ocean acidification will have varying impacts on marine organisms and ecosystems worldwide. It may also have substantial socio-economic impacts, particularly on communities and economic sectors dependent on oceans and their resources.

In a message for the recently observed World Oceans Day, Ban Ki-moon urged the global community to reverse degradation of the marine environment as a united effort. This approach was mirrored in the Consultative Process held at the Assembly. The Process aims to identify areas in which international co-ordination and co-operation on ocean issues should be enhanced.

Dr Turley also highlighted to the ICP vital messages on the health of the oceans, summarised in the 'Ocean Stress Guide' created by an international partnership co-ordinated by PML. Over the coming decades and centuries, ocean health will become increasingly stressed by at least three interacting factors. Rising seawater temperature, ocean acidification and ocean deoxygenation will cause substantial changes in marine physics, chemistry and biology. The publication has been endorsed by international bodies including POGO, UNDP, UNEP, CBD, IOC-UNESCO, EC, World Bank and IAEA, see: www.oceanunderstress.com.

The summary analysis (<http://www.iisd.ca/vol25/enb2589e.html>) mentions that the delegates departed with a heightened awareness of ocean acidification as a global issue of urgent concern.

This article was provided by Thecla Keizer, Marketing, Plymouth Marine Laboratory



UN Headquarters. Photo Credit: PML

News from the POGO members (cont'd)

New deputy director for SAMS

Professor Axel Miller takes over from Dr Ken Jones as deputy director



Handing over the keys to the SAMS estate - Dr Ken Jones (right) retires as Deputy Director and welcomes Prof. Axel Miller to the role.
Photo Credit: SAMS

On 1 June 2013, Professor Axel Miller took over as deputy director of the independent Scottish Association for Marine Science (SAMS). Professor Miller took over from Dr Ken Jones, who retired after 14 years in the post and a total of 35 years of committed service to SAMS.

At SAMS, the deputy director has responsibility for all day-to-day operations, the outstanding research and education infrastructure and for supporting the director, since 2008 Professor Laurence Mee.

An analytical marine chemist, Axel joined SAMS in 1998 from Plymouth Marine Laboratory, initially as lecturer on the then new BSc (Hons) Marine Science degree programme. Ever since he has been committed to transparency, quality-focus and evidence-based management in developing academic administration, management and governance at SAMS and its partner organisation, the University of the Highlands and Islands (UHI). His contribution was recognized when UHI awarded him a professorship in 2008.

Before he took over as deputy director, Axel led the development of the education portfolio at SAMS, including undergraduate, masters, Continuing

Professional Development (CPD) programmes and field courses. Additionally, Axel has been Dean of the Graduate School of the Marine Alliance for Science and Technology for Scotland, a Scotland-wide position he will continue to fulfil.

Professor Axel Miller has seen a meteoric rise in his career path in recent years. He attributes this to attaining an MBA in Higher Education Management (2011) from the Institute of Education, University of London.

On assuming his new post of Deputy Director, Axel expressed his appreciation for what's been achieved by his predecessor and outlined the challenges to come.

"For our size - we currently have 162 staff - SAMS is complex and works with an astonishing range of stakeholders. Underpinning our growing success is a beautiful campus, state-of-the-art equipment pool and, most importantly, a great team of people. Our main challenge is to further enhance our research contributions to marine environmental science in the face of global financial crisis and instability."

This article was provided by Anuschka Miller, Head of Communications, SAMS

N.K. Panikkar Medal Awarded to POGO'S Assistant Director

Dr. Shubha Sathyendranath is awarded a UNESCO medal

The Dr. Shubha Sathyendranath, who developed the POGO programme in the crucial years following its inception, has been awarded a UNESCO medal, the N.K. Panikkar Medal (IOC). This medal is awarded for contributions to capacity building in the marine sciences. Capacity building is a major part of the POGO agenda, and the POGO programme in this area is widely respected around the world. Shubha has been responsible developing many aspects of capacity building in POGO, including the POGO-SCOR Fellowships, the Visiting Professorships, the AMT Fellowships, the NF-POGO Centre of Excellence and the Regional Training Programmes. Collectively, these initiatives have trained a large number of scholars from many countries.

But Shubha's input does not stop at the innovation and the organization. She has also been extremely active in the delivery of the teaching itself. For example, she has taught all of the scholars in the NF-POGO Centre of Excellence programme so far, the scholars in the regional training in Hyderabad and has supervised various of the Fellows under the POGO-SCOR Fellowship Programme. She also teaches international students in many schemes outside POGO, most recently in the EU project IndoMareClim.

N.K. Panikkar (1913 to 1977), for whom the medal is named, was, like Shubha, a native of Kerela, India. An intellectual giant, he can be considered as the father of Indian marine science. He was influential in the development of fisheries in India, and he founded the National Institute of Oceanography in Goa. He led Indian delegations to the Law of the Sea Conferences at the United Nations. He was a prize-winning scientist, a Fellow of the Indian Academy of Sciences and a Fellow of the Indian National Science Academy.

Shubha is a most worthy winner of the N.K. Panikkar Medal, which also reflects great credit on POGO. This was clear from the various kind interventions made by national delegations of many countries following her Panikkar Lecture at UNESCO (Paris) in July. Her commitment to capacity building is strong, and we can expect that she will continue to allocate time to it for years to come, to the continued improvement of the POGO programme. Also, from the discussions that followed the Panikkar Lecture, we remain optimistic that there may be a strengthening of the cooperation between POGO and IOC in marine capacity building.



Dr. Wendy Watson-Wright presents the N.K. Panikkar Medal to Dr. Shubha Sathyendranath
Photo Credit: UNESCO / P. Chiang-Joo

News from the POGO members (cont'd)

The US Global Ocean Carbon and Repeat Hydrography Program - Recent Accomplishments and Future Plans



Recovering the SIO 36-place rosette from
R/V Roger Revelle.
Photo Credit: Dr. Christopher Measures

The NSF- and NOAA-funded US Global Ocean Carbon and Repeat Hydrography Program (23 cruise legs, 2003 to present) has revealed much about the stability of internal pathways and changing patterns in ocean properties, serves as a baseline to assess changes in the ocean's biogeochemical cycle in response to natural and anthropogenic activity, and has been following global warming-induced changes in the ocean's transport of heat and freshwater. The program also provides data for sensor calibration and to support continuing model development that is leading to improved forecasting skill for oceans and global climate.

Operationally the program consists of trans-oceanic sections of full depth CTD casts at ~55-km spacing, closer over steep bathymetry and near boundaries. Water samples are collected for salinity, oxygen, nutrients, ocean carbon parameters, anthropogenic tracers such as CFCs, and other dissolved substances, with concurrent LADCP profiles and myriad underway and other measurements. Shipboard data are immediately made publicly available via the CLIVAR and Carbon Hydrographic Data Office at Scripps Institution of Oceanography, UC San Diego (<http://cchdo.ucsd.edu>).

Despite numerous technological advances over the last several decades, many pressing ocean science problems can only be addressed effectively using ship-based repeat hydrography. A prime example is the acquisition of high-quality measurements of physical, chemical, and biological parameters over the full water column (the 52 percent of global ocean volume not sampled by profiling floats).

Successful cruises were conducted in 2013 aboard R/V Melville from Japan to the U.S. West Coast, and science teams are planning now to continue the program for future years and decades. Research emphasis is expected regarding temperature, salinity and stratification changes; oxygen and ventilation changes; study of diapycnal mixing; deployments and calibration of autonomous floats; long-term monitoring; and continued study of ocean acidification. Planning foci include determining the optimum network of sections, possible expansion to regions not now covered, new types and modes of observations, and improving the testing and calibration of new sensors for autonomous profilers.

Information about the program is found at <http://ushydro.ucsd.edu>.

This article was provided by Jim Swift, Lynne Talley, and Bruce Appelgate, UCSD Scripps Institution of Oceanography

Hobart's expanding marine and Antarctic science precinct

Anyone with an interest in Tasmania's contribution to Antarctic, Southern Ocean, and marine research and education could not help but notice the transformation happening around Hobart's waterfront. Hobart, capital of Australia's island state is the venue for next January's POGO annual meeting.

New facilities on Macquarie Wharf for cruise and Antarctic shipping, a new building housing the University of Tasmania's Institute for Marine and Antarctic Studies, and at the year's end a new ship managed by Australia to explore and understand the oceans surrounding Australia all signal the importance to Hobart of high-latitude marine science. Hobart is emerging as the Southern Hemisphere's largest research hub with a growing regional marine and Southern Ocean presence.

The focus on marine and climate research, education, and management in Hobart has grown over the last decade with the generous support of the Australian and Tasmanian Governments.

"Visitors to Hobart who have come previously will see changes around the city's harbour in a \$60 million reworking of waterfront buildings to accommodate new research and shipping facilities," says Dr Bruce Mapstone, the Chief of CSIRO Marine and Antarctic Research.

Dr Mapstone, and the Executive Director of Utas' Institute for Marine and Antarctic Studies (IMAS), Dr Mike Coffin, will host the January 2014 POGO meeting jointly at a venue right on the water front, in full view of all research and support facilities.



Hobart's waterfront – home to Australia's
marine research and Antarctic science and
education effort. Photo Credit: CSIRO

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News from the POGO members (cont'd)

New to the city this year will be –

- A\$45 million Institute for Marine and Antarctic Studies building, adjacent to CSIRO
- \$7 million Antarctic and cruise ship terminal
- \$120 million research vessel, RV Investigator, the newest vessel in the world's ageing ocean and coastal research fleet

Dr Mapstone said the new marine and Antarctic science waterfront precinct will be home to some 700 scientists, support staff and students (CSIRO 450, IMAS 266) There are another 300 staff at the nearby Australian Antarctic Division at Kingston and 110 academics, staff and students at the IMAS facilities in Taroona, just south of the harbour.

PhD training programs in quantitative marine and Antarctic science delivered by the University of Tasmania in partnership with CSIRO and the AAAD also are features of the Hobart research and educational infrastructure.

He said Australia and Tasmania extend their engagement with international Antarctic and Southern Ocean research through four other international secretariats based in Hobart –

- The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
- The Southern Ocean Observing System (SOOS)
- The Agreement on the Conservation of Albatrosses and Petrels (ACAP)
- International Antarctic Institute (IAI)
- Hobart has a population of around 210,000 people.

Dr Coffin said few people would not be aware of the benefits that come with housing this community of scientists, support staff, and students.

"Our visitors in January will have the opportunity to see some of these facilities and meet the people who make marine science tick in Tasmania, and perhaps enjoy up some summer warmth and visit the rich array of other attractions in and around Hobart."

This article was provided by Craig Macaulay, Communication Advisor, CSIRO Environment Group

POGO-15 Meeting

22-24 January 2014, Hobart, Australia

Plans are well underway for the POGO-15 Meeting, hosted by CSIRO and IMAS in Hobart and scheduled for 22-24 January 2014. Members are advised to make their travel and accommodation bookings well in advance since it will be the peak holiday season in Australia at the time of the meeting. More details can be found on the POGO website at <http://www.ocean-partners.org/meetings-and-workshops/meetings-and-workshops/pogo-15>

Attendees should register for the meeting using the online form at https://docs.google.com/forms/d/1MsAKY4_Cprib6O2SSBNe9jbsIVb7Y2Lrttox_dAtm7z4/viewform



POGO Secretariat News



Dr. Sophie Seeyave will be returning to her duties in the POGO Secretariat in August, following the arrival of a baby boy and time off for maternity leave.

The Secretariat will continue to be supported by Dr. Vikki Cheung in the interim period as Sophie returns to work.

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