Honorary Director's Foreword

2010 was an important year for SWIMS as it marked our 20th Anniversary! To celebrate this we held a reception party which over 100 people attended to reminisce over SWIMS’s past achievements. The 20th anniversary, however, allows us time to reflect and look towards the future. SWIMS is now much larger than it was before, with our numbers having increased by 50%, and SWIMS now supports over 45 staff and students. Once more, space for research and writing desks is in very tight supply.

SWIMS is also more international with over 13 nationalities being represented, including students from mainland China and as far afield as Chile and Colombia. We also have two Swire Scholars, with Mr Elvis Xu (James Henry Scott Scholarship) joining Mr Nicolas Ory (Swire Hong Kong Scholarship). All this points to a very vibrant and exciting research community at SWIMS. Our collaborations are also expanding, with another Memorandum of Understanding having been signed with the Oceanographic Institute in Nhatrang, Vietnam and continued exchanges with Xiamen University, China; Johannesburg University, S. Africa as well as research projects with colleagues in S. Korea, Malaysia, Singapore, Thailand and the US and Europe. As I have mentioned in previous annual reports, we see SWIMS as being a leading regional centre for marine science and these continued links within the region and further afield attest to SWIMS growing importance.

So it is to the next 20 years that we look, a period during which I hope we shall see SWIMS expand, both physically to meet our need for more space, and also in terms of numbers of researchers and collaborators. As we continue to grow, we intend to play an important role in leading marine biology research both in Hong Kong and within SE Asia.

Best wishes for 2011 and the Chinese Year of the Rabbit from the staff and students of SWIMS.

Gray A Williams
SWIMS 20th Anniversary

Back in November 1989, Sir John Swire unveiled the foundation plaque for the Swire Marine Laboratory (SML), which was then being built. The SML was the brain-child of Prof Brian Morton who led the laboratory for 13 years. It was a year later in November 1990 that Sir John, together with HKU’s Vice Chancellor, Prof Wang Gung Wu officiated at the opening of SML. Back in 1990 there were 23 people working at SML, including 18 scientists and 5 support staff. SML numbers quickly increased and soon the laboratory and the residence were full and there was a clear need for more space. This was forthcoming in 1994 when the laboratory was extended and the second residence was built. In recognition of the expansion, the laboratory was renamed the Swire Institute of Marine Science (SWIMS).

In 2003 the Swire group funded the refurbishment and upgrading of facilities at SWIMS. Throughout its history and indeed inception, SWIMS has been generously supported by the Swire family and group of companies. It was always a pleasure when Sir John and Sir Adrian visited SWIMS on their trips to Hong Kong and found time to meet and chat with the students working at SWIMS.

On November 9th 2010, SWIMS staff and students, alumni and friends joined together to celebrate SWIMS 20th anniversary. The evening was very informal giving old friends the chance to catch up and reminisce. Over 100 people were able to attend, whilst other alumni from overseas sent their best wishes via short notes and anecdotes which were posted for all to read. It was especially pleasing to receive a personal note of congratulations from Sir John which was read out. Profs Brian Morton and Joe SY Lee came from the UK and Australia, respectively, to be present. The Vice Chancellor, Prof Tsui Lap-Chee proposed a toast to SWIMS, and Prof Morton gave a short speech highlighting the birth and development of SWIMS. Mr JB Rae-Smith spoke on behalf of the Swire Group, and was joined at the event by Ms Maisie Shun-Wah, Mr Peter Kilgour and Hunter Crawford. Finally Gray gave a brief speech illustrating SWIMS achievements and most importantly looking forward to the future and the continuing importance of SWIMS within the region.

The evening was a great success and it was especially exciting to realise how SWIMS ex-students were playing such an important role in Hong Kong’s development, with former students occupying positions in the AFCD and EPD (Hong Kong Government), the WWFHK, OPCF, as well as in local universities, schools and environmental consultancies.
International Collaborations

Leszek’s collaborations with Dr Tomonari Akamatsu on acoustic surveys of local cetaceans continued, with Dr Akamatsu visiting SWIMS again in September, where he was joined by Dr Xiujiang Zhao of China Three Gorges Corporation. Long term collaborators Drs David Morritt, Rick Stafford and Prof Mark Davies also returned for visits. Dave worked with Ms June Chiang and Dr Benny Chan from Academia Sinica, Taiwan investigating water relationships in intertidal limpets. As part of their continued study of gastropod movement with Gray, Rick and Mark undertook a novel and extremely complex series of scans of the local rock surface to map topographic patterns.

SWIMS is one of the selected institutes to join the international student exchange programme Global Approach by Modular Experiments, which involves postgraduate students from many different countries and is based at the University of Kiel, Germany. The idea is that students receive training on how to conduct specific experiments and then return to their home institutions to perform the experiments on local species. The results are then integrated to build large-geographical scale data sets. This year, Charles Ma went to Germany twice for 4 months to work on the GAME project investigating the stress tolerance of invasive species. This programme will continue in 2011, when we shall recruit a new student to join this project.

As part of an on-going academic exchange, Gray, together with Adela Li, Terence Ng and June Leung joined the University of Johannesburg’s (UJ) marine field course to Tsitsikamma National Park in March 2010. This is an exchange where students and staff join reciprocal field courses in Hong Kong and South Africa. Gray taught on the UJ BSc course and collaborated with Prof Nico Smit, whilst Adela, Terence and June gained credit on the UJ MSc course. Dr Wai Tak-Cheung also visited UJ to advise on a project using stable-isotopes to investigate food webs in Kruger Park, S Africa.
International collaborations (cont’d)

As part of Nicolas Ory's Swire Hong Kong PhD scholarship, Nicolas conducted a 2-month field trip to research shrimp ecology at the laboratory of Prof Martin Thiel, Universidad Catolica del Norte, Chile who previously visited SWIMS in 2009 to work with Clement's group. This well-established collaboration will also continue this coming year.

SWIMS’ larval research group led by Rajan has developed a close collaboration with Prof Yu and colleagues at the South China Sea Institute of Oceanology (SCSIO). This summer they had the opportunity to study the impact of high-CO₂ (ocean acidification) on commercial oyster species (Crassostrea spp.) that support the livelihoods of millions of people in South China. Through this collaboration, our postgraduate students worked at the SCSIO marine research station located in the oyster city, Zhanjiang (Guangdong province), for four months. Rajan's group plans to return again this summer to understand more about this key species’ response to climate change and also to boost cultural ties between SWIMS and mainland marine researchers.

Clement continued working on sea urchins with Dr Monthon Ganmanee from the King Mongkut's Institute of Technology Ladkrabang, Thailand. After meeting researchers from the French Institute for Research and Development (IRD), Clement also established collaborations with the CoReus research group in New Caledonia and initiated a project on sea cucumber fisheries on Vanuatu Islands.

Memorandum of Understanding

To develop further our network of regional collaborators, SWIMS has recently signed a MoU with the Oceanographic Institute, Vietnamese Academy of Science and Technology, Nhatrang. This renews an old collaboration between Prof Vo Si Tuan, Nhatrang and SWIMS which started in the early 1990s. Gray and Nathalie visited Nhatrang to initiate the MoU which will primarily involve work on corals and intertidal species. After a very successful first 3 years, Gray also visited the Laboratory of Marine Environmental Science (MEL) Xiamen University to discuss renewal of the MoU with SWIMS. This link has developed significantly over the period of the agreement, and Dr Liu Min, who worked for many years at SWIMS, recently joined the MEL team.
This is the sixth consecutive year in which students from The University of Hong Kong participated in the OPCFHK University Student Sponsorship Programme, joining three conservation projects located in India and China.

Edward Lau and Derek Mak assisted in a project in India that involved radio-tracking telemetered wild gharials (Gavialis gangeticus), a critically endangered crocodilian species, where they were also brave enough to get close to cobras during a snake walk in Irula. Calton Law and Sylvia Choi headed to Ningde, China, to conduct interviews with local fishermen, as well as boat surveys to assess the status of what is probably the world’s most northerly-distributed population of the Indo-Pacific humpback dolphin (Sousa chinensis). Also in China were Michelle Luk and Chin Cheung Tang, who joined field surveys to track wild giant pandas in the mountains of Qinling and Pingwu, where efforts are being made to build habitat corridors to connect isolated populations of these iconic creatures.

The students documented their trips and shared their unique experiences via online blogs. Their exploits were also shared with fellow students and OPCFHK stakeholders in a series of well-received presentations. Once again we would like to acknowledge OPCFHK for providing such valuable opportunities for our students to be involved, first-hand, in conservation projects around the region.

OPCF also supported the "1st South East Asian Training Workshop in Marine Mammal Research Techniques", a first in a series of workshops run by Leszek and aimed at developing standardized, quantitative research techniques in SE Asia. Throughout the year OPCF helped facilitate interactions with collaborators in mainland China including Nanjing Normal University and, especially, at Sun Yat-Sen University (Zhuhai) and the Pearl River Estuary Chinese White Dolphin National Nature Reserve and also provided support funding for Leszek's Hong Kong field station at Tai O which is used as a base for field research on Chinese white dolphins.
Staff Research

Gray A Williams

Research has continued into thermal tolerance of intertidal molluscs. Much of this research has involved collaboration with David Marshall in Brunei and Christopher McQuaid in S. Africa, as well as Yunwei Dong from Xiamen and Ng Wai Chuen at SWIMS. The focus of this research is trying to integrate phylogeographic patterns (distributions of species from Japan to Singapore) with physiological tolerances (heart rate, water loss and heat shock protein production). The long term goal is to develop a network of collaborating scientists who will undertake identical experiments on the thermal response of species in their home locations, which can be integrated to identify large-scale patterns to help explain species’ distributions and response to climate change.

Kenny Leung

This has been a busy yet rewarding year for me. In June, I was elected as President of the Society of Environmental Toxicology and Chemistry (Asia Pacific). I continued to conduct research and provide professional training in environmental risk assessment in different countries (e.g. Papua New Guinea and China). Locally, I trained Environmental Protection Department staff in statistical design and analysis for environmental monitoring. Owing to my outstanding efforts in promoting environmental protection through high quality teaching, research and community services, the Faculty of Science, HKU honoured me with “The Services Contribution Award” and the Junior Chamber International Hong Kong selected me as one of the “Ten Outstanding Young Persons” (TOYP) for Hong Kong in 2010.

V. ThiyagaRajan

As a consequence of natural environmental changes, coastal waters are becoming weakly saturated in CaCO₃ minerals, thus jeopardizing shell-forming organisms. Within this century, human caused CO₂ emissions are expected to exacerbate this situation, in a process popularly known as ocean acidification. The goal of our interdisciplinary (larval biology, proteomics and biomineralogy) team is to understand the mechanisms through which larvae of many commercially important species (e.g. oysters) might adapt or succumb to projected high-CO₂ scenarios. We are also studying larval biomineralization and shell mechanics as a function of CO₂ concentrations in collaboration with crystallographers.
Cynthia Yau

Development of the coral facility at SWIMS has been the main priority this year. Building on previous research we have been able to expand the number of species in the facility as well as maintain and hold fragments in a healthy condition over the year. These colonies are ideal for experiments and, based on our field observations, we have used different species to investigate synergistic effects of temperature and salinity extremes. These impacts are likely to be very important, especially in years such as 2010-11 when winter water temperatures were very cold and algae were able to bloom and grow on the corals. Currently we are planning to extend this work to look at the impacts of pollution, such as oil contamination, to measure how corals can respond to added stresses.

Yvonne Sadovy

My work continues in the research, education and management of reef fish spawning aggregations with momentum gathering towards their better management. Summer research in Fiji lasted 6 weeks with former SWIMS students Allen To and Stanley Shea. Fishes tagged the previous year returned to the exact same place in the spawning aggregation where they were originally tagged, even though they can travel 20 km away from the site between aggregation seasons. To push for management, I organized a mini-symposium in Puerto Rico on spawning aggregations, and presented talks in Samoa, Fiji, the Philippines, Palau and Monaco, and continue as Director of the Society for the Conservation of Reef Fish Aggregations (www.SCRFA.org).

Ji-Dong Gu

Our newly designed PCR primer sets achieve a higher specificity to anaerobic ammonium oxidation (anammox) bacteria based on 16S rRNA gene and hydrazine oxidoreductase (hzo) biochemical function-based genes and have revealed new and niche specific amplicons of anammox bacteria from the South China Sea and oil reservoirs in China. Estimates of anammox in mangrove sediments showed much higher populations in the surface than the lower layer at the Mai Po Nature Reserve. In addition, the collaborative research with Professor Yoko Katayama, Tokyo University of Agriculture and Technology in Japan, on the UNESCO/Japanese Fund-in-Trust for the Preservation of the World Heritage in Cambodia has been successfully completed for the fourth year.
Clement Dumont

This year we conducted several overseas research trips in Malaysia, Thailand, New Caledonia, Chile and Germany. We have now a well established research program in Tioman Island in Malaysia to better manage the coral predator crown-of-thorns sea star. Similarly, we are also investigating the impact of sea urchins on coral bioerosion in Hong Kong to determine what would be the most appropriate strategy for the government to prevent further decline of massive corals. Finally, with collaborators from Baptist University, we showed that the Cape d’Aguilar Marine Reserve effectively protects sea urchins from overexploitation, supporting the need for a network of marine reserves in Hong Kong.

Leszek Karczmarski

Developing regional collaborations in SE Asia was a top priority this year; and we co-organized two workshops addressing issues in marine mammal conservation and training in quantitative research techniques. Earlier in the year, funded by a RGC research grant, a new project was initiated to investigate population processes of Chinese white dolphins in Hong Kong waters and across the Pearl River Delta. We have continued studies of spinner dolphins in Hawaii and Heaviside's dolphins endemic to SW Africa. The newly established Cetacean Ecology Lab is growing fast and currently hosts postgraduate students working in Hong Kong, South Africa, Costa Rica, Venezuela, Chile and Egypt, as well as students in mainland China and Taiwan.

Nathalie Goodkin

Research in our lab began by looking at Hong Kong corals and the communities that exist today. Our coral age models are showing that corals across the eastern coasts of Hong Kong have been living for several centuries in conditions that are described as marginal for coral growth. This is a significant finding to direct our research towards improving our understanding of how corals function in challenging environments. We carried out a successful field season and have begun reconstructing historical records of pollutants and climate change within Hong Kong. To expand our studies around the South China Sea, we have begun collaborations with the Vietnam Institute of Oceanography and with the University of the Philippines at Diliman.
Post Doctoral Fellows

Wai Tak-Cheung

Wai Tak-Cheung has focused his research on the trophic dynamics and functioning of local marine systems. To study energy flow, Wai uses fatty acid and stable isotope analyses to trace the source and fate of autotrophic and detrital energy sources. At present, he is investigating the food utilization of different feeding groups (from plankton to predatory fishes) in estuarine and rocky habitats. Wai also conducted an echinoderm survey to assess the biodiversity, population structure and secondary production of sea urchins in relation to sessile species diversity in rocky habitats of Hong Kong.

Ng Wai Chuen

Ng Wai Chuen’s research focuses on the population genetics and stress response of marine animals. One of his study themes is the effect of projected climate change on the physiological response of intertidal communities using regionally common animals as model species. Through on-site monitoring and laboratory verification, potential biomarkers have been identified for heat and other environmental stresses based on proteome profiles. He is also taking part in an investigation of the small-scale genetic and cohort structure and temporal variation of limpets which will help resolve the genetic linkage of populations and the possible patterns of larval transport on a local to regional scale.

Priscilla Leung

Priscilla’s research interests focus on environmental proteomics. So far, she characterized various metal and non-metal inducible metallothionein isoforms in the green-lipped mussel *P. viridis* using 2D immuno-blotting and *de novo* sequencing. Priscilla also studies the proteomic response of *P. viridis* to trace metal and pro-oxidant exposures and identified tissue-specific protein expression signatures (PES). By identifying PES, Priscilla plans to develop novel, sensitive, biomarkers for marine pollution monitoring. Currently, Priscilla applies a similar approach to investigate the combined effect of temperature and chemical pollutants on selected species, which will help understand the toxic mechanisms of pollutants under global warming scenarios.
Vivien Wei Wei Bao

Since the 1990s, synthetic booster biocides have been widely used in combination with copper (Cu) in antifouling paints. As a result, the biocides and Cu often co-occur in the coastal environment, and may interact, leading to additional or synergistic toxic effects to marine organisms. Vivien has studied the toxicity of five commonly used biocides with Cu to microalgae, polychaetes, crustaceans and fish. She revealed that zinc pyrithione and Cu exhibited a strong synergistic toxic effect to all test species. Vivien is calculating predicted no effect concentrations which can be used for regulation and management of this chemical mixture and offer better protection to marine organisms in SE Asia.

Postgraduate Research

Spatial dispersion patterns in rocky shore invertebrates

June Leung has been surveying rocky shores to describe the spatial dispersion patterns displayed by mobile invertebrates and in particular, Planaxis sulcatus. There is much variability in the degree of aggregation between seasons, shores, shore heights and species, but little discernable trend. In P. sulcatus, the proportion of aggregating snails is highly variable between populations, and is likely to be related to an interaction between the density of the animals and local shore topography. June will be concluding her project with a computer simulation; encompassing population parameters, snail behaviour and physiology, that aims to model the distribution patterns of P. sulcatus.

Nanotechnology: boon or bane?

Recently there has been increased development of water remediation techniques based on the use of nanomaterials (NMs). However, the risk they may pose is still relatively unknown. Over the last year, Stella Wong has continued investigating the toxicities of engineered NMs on various marine organisms. Her most interesting finding is that the presence of carbon nanotubes can possibly increase the uptake of benzo[a]pyrene in fish. She also observed that the toxicity of nano-zinc oxide on amphipods increases significantly with temperature. In the future, Stella will examine the gene expression of the copepod Tigriopus japonicus after exposure to NMs.
“Blind” dating in mangrove snails

Searching for a mate is difficult for sexually reproducing animals such as snails that lack visual and acoustic perceptions. Terence Ng studies the reproductive strategies adopted by two mangrove snails, *Littoraria ardouiniana* and *L. melanostoma*, and has found that male snails can locate conspecific females in mangrove tree canopies by following their mucus trails. Proteomic studies show differences in mucus proteomes between males and females. Apart from further evaluating these findings, Terence also plans to investigate whether males choose bigger and hence more fecund females and, if so, what mechanisms are involved.

Analysis of barnacle larval proteome response to CO₂-driven ocean acidification

Uptake of CO₂ by the ocean is changing seawater chemistry in a process called ocean acidification. Kelvin Wong is studying the effect of two projected future high-CO₂ levels on the physiology of the larvae of a dominant biofouling barnacle, *Balanus amphitrite* at the proteome level. The response to high-CO₂ appears to involve regulation in the total protein expression and two important post-translational modification levels (phosphorylation and glycosylation), which suggest that the larval proteome is plastic; and that the proteins implicated in larval tolerance could be used as potential markers for early diagnosis of ocean acidification stress.

Predicting the effects of ocean acidification on marine invertebrates

Ocean acidification results when CO₂ dissolves into seawater, reducing pH levels and carbonate concentrations. Carbonate is important to calcifiers and non-calcifiers alike, as shell material and an internal pH buffer. Ackley Lane examines the effects of these changes on the early life stages of invertebrates. Experiments on barnacles have shown decreases in metamorphic ability but an increase in carbonate uptake, although variation amongst individuals is high. Ackley’s next step is to determine if this variation is random, or if it is determined by heritable genes. Heritable variation in acidification tolerant genes may indicate strong adaptive potential of these species.
Multispecies study on larval biomineralization: implications of ocean acidification

Calcifying marine invertebrates produce shells with diverse compositions and morphologies. Differences in biomineralization among species and developmental stages may account for differences in species susceptibility to seawater changes, such as ocean acidification. Therefore, knowledge of biomineralization in CO$_2$ elevated seawater is fundamental for anticipating community responses to this anthropogenic impact. Vera Chan’s research applies biomineralization techniques, including x-ray diffraction spectroscopy, scanning electron microscopy, and Fourier transform infrared spectroscopy, to study biomineralization during larval development and metamorphosis.

Negative impacts of ocean acidification on shellfish fisheries

Due to global warming, ocean acidification has become an emerging threat to shellfish larvae and their subsequent production all over the world, which has triggered research into larval responses to ocean acidification (OA) at physiological and molecular levels. OA is predicted to decrease the protein, biomineral synthetic capacity and biochemical energy available for larval settlement, and could impair the ability of larvae to successfully metamorphose. Ramadoss Dineshram is testing this hypothesis using commercial and native oyster species by exposing their larvae to various treatments mimicking natural and projected OA scenarios.

How do fish respond to thermal stress?

Adela Li investigates how temperature influences the physiological response of the marine medaka fish. Her results show that oxygen consumption rate was relatively low at optimal temperatures and gradually increased and peaked at around 24°C and 36°C respectively. Correspondingly, a significant up-regulation of heat-shock proteins (HSP) was recorded at 10, 32 and 38°C for HSP 70 and at 38°C only for HSP 90. This represents a stress response to protect cellular structure and function. Adela is studying if the fish switches to anaerobic respiration at these thermal extremes and will use these data for her study on the combined toxic effect of temperature and chemical pollutants on this model fish species.
Are whelks recovering after the global ban of organotin antifouling paints?

Organotins (OTs), in particular tributyltin and triphenyltin (TPT) originate from antifouling paints, and can induce imposex in many neogastropods. A global ban on their use was enacted in September 2009. It is, therefore, expected to see a recovery from OT pollution. Kevin Ho and his collaborators recently examined imposex and tissue concentrations of various OTs in the dogwhelk *Nucella lapillus* collected along the Icelandic coast and revealed some degree of recovery. His preliminary study in Hong Kong, however, showed a very high TPT concentration in *Thais clavigera* with a high incidence of imposex, indicating continued OT contamination.

Ecology of exotic marine species in Hong Kong

Hong Kong is one of the busiest estuarine trade-harbours in the world, and is characterized by high levels of marine pollution and extreme changes of sea water temperature and salinity between seasons. Juan Carlos Astudillo is going to work on the ‘introduced’ marine species that are present in Hong Kong. The aims of his investigation are to identify the presence and distribution of exotic invertebrate species in Hong Kong, and the main biotic and abiotic factors that can affect their distributions and establishment in fouling and benthic communities.

Role of stress tolerance on invasion success

Marine bioinvasion is an emerging problem in times of global change. Stress tolerance is thought to be one of the common traits of successful invaders, so Charles Ma is investigating the role of stress tolerance on invasion success. In 2010, Charles was involved in a global study (GAME project) conducted in seven countries to find out that whether stress tolerance of marine invaders differ in their invasive and native range. Results show that invasive populations are generally more stress tolerant to abiotic stressors than native populations. This year, Charles plans to investigate whether mussel heart function can play a role in limiting its invasion success.
Effect of predation on behavioural and morphological traits of rhynchocinetid shrimps

Nicolas Ory holds the Swire HK PhD Scholarship in Marine Biology and is exploring the relationship between small mobile mesoconsumers, such as rhynchocinetid shrimps, and their predators in rocky shore and coral reef environments. To do this, he is conducting field surveys to relate spatio-temporal variations of shrimp distributions with the abundance and diversity of predatory fishes and the availability of refuges. Nicolas is also running experiments to investigate how predation affects behavioural responses (habitat choice, feeding activity) and morphological traits (body growth, secondary sexual traits) of the shrimp.

Thermal tolerance of Echinolittorina: implications for vertical distribution?

Temperature plays an important role in determining an organism’s distribution by influencing an individual’s fitness from the molecular level to their physiological state. Kathy Li has been investigating thermal tolerance of three high-zoned Echinolittorina snails, which may help understand their distribution on the shore. Kathy’s findings suggest that, in general, thermal tolerance is positively related to tidal level. To determine how thermal stress effects the physiology of these snails, Kathy will also determine the littorinids’ heart responses and kinetics of an enzyme, malate dehydrogenase (MDH).

Barnacles reduce thermal stress, affecting distribution and mortality of associated species

Stephen Cartwright has completed his PhD study, investigating how barnacles are important habitats for intertidal snails to mitigate the harmful effects of thermal stress. Removal of barnacles affected the distribution of associated species, which in the absence of their habitat, suffered severe stress, and often died. Stephen’s study not only highlighted the importance of biological habitats, but also tested and identified the mechanisms by which the habitat benefited the associated species. He is now starting a post-doctoral position investigating the role of heat and water loss on the survival of intertidal species.
Life history strategies of intertidal limpets

Intertidal gastropods exhibit different life history strategies to cope with changing environmental conditions. The different adaptations that they display reflect how they allocate their individual resources and partition their energy investment into reproduction and/or self maintenance. Karen Villarta is investigating such characteristics in *Cellana toreuma* in order to understand the life history strategies of this intertidal limpet, taking into account its reproduction, population dynamics, energy content and allocation, as well as its physiological responses to environmental stress.

Risk assessment framework for the Marine Reserve

Cape d’Aguilar is the only Marine Reserve in Hong Kong. However, it is located close to the urban environment and is inevitably affected by various sources of chemical pollutants discharged from treated sewage effluent and surface runoff from adjacent urban areas. As the new James Henry Scott HK PhD Scholar, Elvis Xu will study a PhD to investigate the current ecological risk of chemical contaminants to marine organisms in the Marine Reserve. Ultimately he hopes to develop a practical and effective framework for monitoring and ecological risk assessment of marine protected areas in SE Asia.

Bioaccumulation and anthropogenic impacts on marine mammals

Long-lived marine animals are particularly susceptible to many adverse effects of human activities. Bioaccumulation and biomagnification have been of growing concern in recent years, especially for top predators such as cetaceans and sharks that can accumulate toxic compounds for tens of years. Julie Serot is interested in issues of marine mammal conservation, policies, sustainability and human impacts such as pollutants and anthropogenic disturbance. For her MPhil study, she is developing a project that will assess some of these aspects for coastal dolphins which will involve both laboratory analyses and policy surveys.
Behavioural ecology of Risso’s dolphins off northern Chile

Macarena Bravo's M.Phil. research focuses on the behavioural ecology of a little known dolphin species, the Risso's dolphin, off the northern coast of Chile, her home country. She will apply photographic-identification techniques to study population parameters, group dynamics, site fidelity and daily behaviour of a small community of this species that frequents a sheltered habitat of La Herradura Bay. This is first systematic study of the Risso's dolphins off the Chilean coast and, as local expertise is limited, this project contributes to capacity-building in cetacean research in Chile.

Sympatric delphinid ecology in coastal habitats of Tropical Americas

Although various dolphin species occur sympatrically, our knowledge of the interactions and mechanisms that regulate their coexistence is limited. For stable communities to coexist, species must differ to some degree in resource utilization, such as their prey species, habitat use or diel patterns; coexistence is therefore associated with a ‘partitioning’ of resources. Lenin Oviedo is studying the mechanisms that drive coexistence in sympatric species of dolphins in coastal habitats in Golfo Dulce, Costa Rica and off the Northeastern coast of Venezuela. He will also compare his findings from tropical Americas with the spatio-temporal overlap of cetaceans in Hong Kong waters.

How bad are triphenyltin compounds as widespread marine contaminants?

As effective biocides, triphenyltin compounds (TPTs) are commonly applied. Based on the recent literature review conducted by Andy Yi, TPT contamination is globally widespread in coastal areas and these compounds are highly toxic to marine organisms. TPTs can be accumulated in marine organisms and potentially biomagnified along the food chain. Therefore, a better understanding of their environmental fate and ecological impact in marine ecosystems is essential. Andy’s PhD study will investigate the mechanisms of TPT bio-magnification along food chains and elucidate their toxicities to marine organisms at different levels of biological organization.
**pH changes and Hong Kong’s corals**

The recent discovery of 200 year-old corals in Hong Kong has opened a new area for paleo-research. Using boron isotopes as a geochemical tracer, Yang Teng Teng is reconstructing the pH variability in modern long-lived Hong Kong corals. Teng Teng is also investigating evidence of anthropogenic forcing from these corals and how these effect Hong Kong’s coral growth. X-rays have shown that these corals exhibit unusual patterns demonstrating adaptation to stressful environments. These findings will enable Teng Teng to further examine how ocean acidification may impact the growth of Hong Kong corals chronologically.

**Hot proteins in littorinid snails**

Cynthia Wong studies the ecology of littorinids, *Echinolittorina malaccana* and *E. vidua* under thermal stress in Singapore with Dr Shirley Lim. Her recent visit to SWIMS to work on proteomics with Rajan was part of her research to describe and compare the protein expressions of these two species under different heat treatments. Identification of significantly up- or down regulated proteins will reveal the types of proteins present in the littorinids when exposed to heat and will explain how these proteins help the littorinids adapt to high temperatures in Singapore.

**Oyster culture; a Hong Kong: Australia comparison**

In Australia, the introduction of the Japanese *Crassostrea gigas* will benefit the aquaculture industry, however, concerns of invasion and displacement of the native rock oyster *Saccostrea* limits its cultivation. In Hong Kong, *C. hongkongiensis* has been traditionally farmed while the rock oyster, *S. cucullata* is still abundant on rocky shores. Emma Wilkie came to Hong Kong from Macquarie University to investigate the longer term affects of farming *Crassostrea* spp. where rock oysters are naturally abundant, as a comparison with Australia. Similar to observations in Australia, *C. hongkongiensis* does not displace native rock oysters in Hong Kong and these findings will help Emma predict the likelihood of invasion, and ecological impacts of farming *Crassostrea* spp.
Research Visitors and Seminars

For the first time this year SWIMS hosted a residential field course from another University. In May 2010 Drs Chris Harley and Patrick Martone led a group of University of British Columbia (UBC), Canada undergraduates to spend 12 days learning about marine ecology in Hong Kong. During their stay they received lectures and went on fieldtrips with SWIMS staff and students and also shared their experiences with SWIMS students at the Residence block. All in all it was a great experience for SWIMS as well as the UBC students and hopefully we can continue to offer students from other universities this opportunity.

SWIMS continued to host workshops, with this year seeing a special one-day event for the Emerging Strategic Research Theme of Earth as a Habitable Planet. This event in March attracted colleagues from the Science Faculty, led by the Dean, Prof Sun Kwok. Later in the year, Leszek hosted the 1st South East Asian Training Workshop in Marine Mammal Research Techniques, a 7 day meeting focused on estimating population parameters, which was attended by 26 researchers and students from Hong Kong, mainland China, Taiwan, Thailand, Malaysia, and Indonesia.

In terms of seminars, SWIMS continued to host a variety of events including talks from overseas speakers such as Prof John Reynolds III (Mote Marine Laboratory and Chairman of the US Congressional Marine Mammal Commission), on conservation and connectivity in marine mammal populations, Prof Yuping Wu (Sun Yat-Sen University, China) on genetics and pathology of the Chinese White Dolphins in the Pearl River Estuary and Ms Li Jingchun (University of Michigan), on speciation in bivalve commensals. Ms Emma Wilkie (Macquarie University, Australia) also gave a seminar on her work on oysters during her 6 month stay at SWIMS collaborating with Rajan, as did Ms Cynthia Wong (National Institute of Education, Singapore), who worked with Rajan and Gray on littorinid ecology and proteomics. The SWIMS lunch-time series led by students under Clement has continued to develop and be successful with a wide range of papers and issues being discussed on a weekly basis.
The 2nd UCAS Symposium on Dynamic Aquatic Ecosystems

Postgraduate students from SWIMS and the State Key Laboratory of Marine Environmental Science (MEL), Xiamen University, China have been successfully running an association to foster exchange in aquatic sciences among young researchers since 2008. The University Consortium on Aquatic Sciences (UCAS) is playing a key role in enhancing mutual exchanges, knowledge innovation and collaboration among postgraduate students. This year, UCAS successfully organized the 2nd UCAS Symposium on Dynamic Aquatic Ecosystems in March 2010 held at MEL as a follow up to last year’s inaugural symposium held at SWIMS.

The 2nd symposium was inaugurated by Prof Minhan Dai, Director of MEL who congratulated UCAS and promised his full support for this proactive student association and symposium series. In the opening ceremony, Dr V Thiyagarajan presented MEL with a memento and conveyed a greeting message from Prof Gray Williams. The symposium provided a platform for postgraduates to exchange their research views, as well as being an excellent vehicle for social mixing and a basis for friendship and cultural exchange. Two guests from National Yunlin University of Science and Technology (Taiwan) also joined that event for the first time.

In the closing ceremony, participants expressed their happiness about this unique meeting and looked forward to the 3rd symposium which is to be held in early April 2011 in Hong Kong. Organizers are expecting >100 participants from Hong Kong, Mainland China and Taiwan. For details see: http://mel.xmu.edu.cn/ucas/Activity/sym11.asp.
Community Outreach

As always, SWIMS has been involved heavily in community outreach hosting visits for nearly 700 school children, undergraduate and postgraduate students as well as alumni and Green Groups. We were also able to offer work experience/ internships for more than 15 school and undergraduate students from all around the world as well as final year projects for HKU students. We have also maintained our strong links with the Agriculture, Fisheries and Conservation Department (AFCD), Hong Kong Government and were pleased to welcome a visit from the Director, Mr Alan CK Wong and staff to SWIMS in November. Mr Alan Chan and staff, who have taken over from Mr Edward Wong, also visited SWIMS to discuss our research and collaboration with AFCD.

As part of her work to protect fish spawning aggregations, Yvonne was invited to work with WWF-Philippines and the Palawan Council for Sustainable Development in the development and review of a sustainable management plan for red coral grouper (genus *Plectropomus*). She has also conducted training in the collection of biological and fishery data that can be used for better management in Palawan, Philippines.

One of several red coral grouper valued in the Hong Kong live reef fish restaurant trade
Conservation

**SWIMS and IUCN**

2010 was a better year for the Napolean fish (humphead wrasse), *Cheilinus undulatus*, listed on Appendix II of CITES in 2004. This species is particularly valuable in the Hong Kong-based live reef food fish trade and traders are very keen to sell this fish as it has a very high profit margin; retail prices can sometimes reach US$150 and this has led to a lot of illegal international trade.

In March, Yvonne Sadovy was invited to be a member of an IUCN delegation going to Doha (Qatar) for the 15th meeting of the Convention on International Trade in Endangered Species (CITES) to assist the Indonesian government with a recommendation to improve implementation of the Appendix II listing. As a follow-up to the March meeting and to improve enforcement of international trade measures, Yvonne is working with the Indonesian, Malaysian and Philippines governments through projects on the species. On 3–4 June, she organized a workshop in Bali, Indonesia, to discuss the issues surrounding illegal trade in the Humphead wrasse and to develop recommendations for better practices. Indonesia reduced its export quota for the species and Malaysia now has a zero export quota partly in response to such initiatives and we continue to work to close illegal trade loopholes.

Working with an Indonesian live fish trader, Yvonne provided information that can be used to help communities move from using damaging fishing techniques, like cyanide, and overfishing of threatened species, like the Humphead wrasse, towards more sustainable practices. As a result of this work, some traders such as Heru Perumo no longer exports the Humphead wrasse and only buys sustainably caught fish from local fishermen.

**SWIMS and Reef Check**

Students and alumni of SWIMS continue to support the annual Reef Check to monitor local coral communities and associated flora and fauna. In summer 2010, nearly 20 SWIMers took part in the dive survey at Siu Long Ke, a Reef Check site that has been monitored by SWIMS over the past five years. Members were assigned to corresponding tasks to examine the status of fishes, invertebrates and coral cover within the survey site. Regular monitoring at the same Reef Check site enables us to make long-term observations on the underwater environment. In 2010, the coral cover at Siu Long Ke was 37%, a level that has been stable for the past few years, indicating that the coral community is relatively undisturbed. The abundance of fish and invertebrate fauna is, however, still low, which reflects the high and persistent fishing pressure in local waters.
Research Opportunities

Research Visitors
The Swire Institute of Marine Science offers three major sources of funding to support researchers wanting to visit SWIMS to undertake research. For enquiries, please contact the Hon. Director, Gray A Williams.

The Laurence Caplin Scholarship in Marine Biology
Established in memory of Laurence Caplin by his widow, Mrs. E Caplin and daughter, Mrs J Woodford, to bring young people to SWIMS to undertake research in marine biology with a resident staff member.

The Intertidal Trust Fund
Established in 1982 with profits from the book "The Seashore Ecology of Hong Kong", grants from the Intertidal Trust Fund can be made to overseas students and scientists who wish to undertake research on intertidal ecology at SWIMS.

Cape d'Aguilar Trust Fund
Established in 1995 with profits from the book "An Introduction to the Cape d'Aguilar Marine Reserve, Hong Kong", grants from the Cape d'Aguilar Trust Fund can be made to local or overseas students and scientists who wish to undertake marine biological research on the Cape d'Aguilar Marine Reserve at SWIMS.

Higher Degrees (M.Phil / Ph.D)
Students who are interested in undertaking a research postgraduate degree (M.Phil or Ph.D) in marine biology and ecology should directly contact SWIMS academic staff for more information regarding individual projects.

Student Research Assistantships
Undergraduate students are encouraged to apply to work as volunteer student research assistants during the semester break/summer holidays. High school students who would like to gain some experience in marine biological/ecological research are also encouraged. Interested students should contact Ms. Sylvia Yiu.

Accommodation and Laboratory
SWIMS residential blocks are situated on top of the Cape d'Aguilar cliffs. Accommodation at the Residence is available for students, researchers and visitors working at SWIMS. It is also available to outside visitors. Those interested in booking the accommodation should please contact Ms Sylvia Yiu.

SWIMS underwent a further upgrading of facilities in 2010, with new fittings for the outside aquarium area, as well as maintenance of fire escapes. We also investigated means to reduce our energy usage and minimize our carbon footprint.


Rolling stones and stable homes: social structure, habitat diversity and population genetics of the Hawaiian spinner dolphin (*Stenella longirostris*). *Molecular Ecology* 19: 732–748


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**Student Graduations**

Ph.D


Hu Hongli (2010) - Morphological and molecular studies of selected dothideomycetes.

M.Phil


Lee Ka Kwok (2010) - Molecular analysis of anammox, AOA and AOB in high nitrogen sediment and wetlands

Tuuli Cynthia Darta (2010) - The croaker fishery and dried swimbladder trade in Hong Kong, and the reproductive biology of the greyfin croaker, *Pennanbetta anea*.


Other Contributions from SWIMS

Clement Dumont
Research Associate, EKOMAR, National University of Malaysia

Ji-Dong Gu
Editor, Frontier in Microbial Ecotoxicology and Bioremediation
Associate Editor, Ecotoxicology, Environmental Geochemistry and Health, International Biodeterioration & Biodegradation, Microbes and the Environment
Ambassador, International Society of Microbial Ecology

Leszek Karczmarski
Member, IUCN World Conservation Union Specialist Group: Small Cetaceans
Member, IUCN Species Survival Commission
Member, Society for Marine Mammalogy
Member, Marine Mammal Conservation Working Group, HKSAR Government
Member, Scientific Advisory Committee - Ocean Park Conservation Foundation Hong Kong (OPCFHK)
Member, Scientific Advisory Committee - Sirenian International, Inc.

Kenny Leung
President, the Asia-Pacific Geographical Unit of the Society of Environmental Toxicology and Chemistry (SETAC)
Subject Editor and Founding Editorial Board Member, Integrated Environmental Assessment and Management
Member of Editorial Board, Marine Pollution Bulletin; Integrative Zoology
Member, Environment and Conservation Fund (ECF) Research Projects Vetting Subcommittee, HKSAR Government
Member, Marine Mammal Conservation Working Group, HKSAR Government
Member, Endangered Species Advisory Committee, HKSAR Government
Member, Red Tide/Harmful Algal Bloom Expert Advisory Group, HKSAR Government
Member, The Outstanding Young Persons’ Association Council Member & Librarian, MBAHK.

V Thiyagarajan
Editor (review), Aquatic Biology, Inter-Research Journal
Editor (review), Aquaculture Environment Interactions, Inter-Research Journal
Council Member, Hong Kong Proteome Society

Gray A Williams
Postgraduate Advisor, King Mongkut’s Institute of Technology Ladkrabang, Thailand
Guest Professor, Xiamen University, China

Cynthia Yau
Member, Cephalopod International Advisory Council

Conferences and Workshops

Vivien Wei Wei Bao
Oral Presentation; SETAC Asia/Pacific 2010, 4-7 June 2010, Guangzhou, China.
Oral & Poster Presentations; The 6th International Conference on Marine Pollution and Ecotoxicology, 31 May-3 June 2010, City University of Hong Kong, Hong Kong.

Clement Dumont
Invited Speaker; Research Institute for the Development (IRD), 9 Nov. 2010, New Caledonia.
Invited Speaker; National University of Malaysia (UKM), 23 Oct. 2010, Malaysia.
Oral Presentation; Meeting of the Association for Tropical Biology and Conservation, 19-23 July 2010, Bali, Thailand.

Nathalie Goodkin
Poster Presentation; 10th International Conference on Paleoceanography Program and Abstracts 29 Aug.–3 Sept. 2010, San Diego, USA.
Poster Presentation; Western Pacific Geophysics Meeting of the American Geophysical Union, 22-25 June 2010, Taipei, Taiwan.
Oral Presentation; 6th International Conference on Marine Pollution and Ecotoxicology, 31 May-3 June 2010, Hong Kong.

Yvonne Sadovy
Co-Chair, IUCN World Conservation Union Specialist Group of Groupers and Wrasses (www.humpheadwrasse.info)
Director (and founding member), Society for the Conservation of Reef Fish Aggregations (www.scrfa.org)
Member, Steering Committee of the IUCN Species Survival Commission
Co-Chair, Marine Conservation Sub-Committee of the IUCN Species Survival Commission
Member, Scientific Advisory Committee - Palau International Coral Reef Centre (PICRC)
Editorial Boards, Reviews in Fish Biology and Fisheries; Fish and Fisheries
Chair, Executive Committee Member, World Wide Fund for Nature Hong Kong (WWF HK)
Member, Board of Directors, Ocean Park Hong Kong
Member, Expert Panel for the Harbour Area Government Panel, Treatment Scheme Stage 2B Review
Member, International Advisory Committee for the Fisheries Centre, UBC, Canada
Invited Talk; College of Environmental Engineering and Sciences, East China University of Science and Technology, 9-11 May 2010, Shanghai, China.
Organizing Committee Member & Plenary Lecture; 13th Mainland-Taiwan Environmental Protection Conference, 23-25 Apr. 2010, Chongqing, China.

Leszek Karczmarski
Organizer & Chairman; 1st South East Asian Training Workshop in Marine Mammal Research Techniques: Estimation of Population Parameters, 3-11 Dec. 2010, Kadoorie Institute, The University of Hong Kong, Hong Kong.
Co-organizer, Co-chair & Thematic Overview Talk; Workshop on Population Connectivity and Conservation of Sousa chinensis off Chinese Coast, 4-7 June 2010, Nanjing Normal University, China.

Kenny Leung
Organizer & Principal Teacher; Workshop on Statistical Design and Analysis for Environmental Water Monitoring and Sampling for EPD staff, 8 Dec. 2010-7 Jan. 2011, Hong Kong.
Chairman of the Organising Committee; Symposium on Environmental Management in Pearl River Delta: Review, Challenges and Opportunities, 30 Oct. 2010, Hong Kong.
Invited Speaker; Risk Assessment of Environmental and Food Contaminants at Department of Clinical Nutrition, School of Medicine, University of Eastern Finland, 16-18 Aug. 2010, Kuopio, Finland.
Invited Speaker; Environmental and Human Health Impact Assessment, 4-17 July 2010, City University of Hong Kong, Hong Kong.
Member of the Scientific Committee, Session Chairman & Presenter; SETAC Asia/Pacific 2010 Meeting, 4-7 June 2010, Guangzhou, China.
Member of the Organising Committee, Session Chairman & Presenter; The 6th International Conference on Marine Pollution and Ecotoxicology, 31 May-3 June 2010, City University of Hong Kong, Hong Kong.
Invited Speaker; Mini-Symposium on Biological Consequences of Global Change in the Experimental Biology 2010 Congress, 24-28 April 2010, Anaheim, U.S.A.

Priscilla Leung
Oral Presentation; The 6th International Conference on Marine Pollution and Ecotoxicology, 31 May-3 June 2010, City University of Hong Kong, Hong Kong.

Yvonne Sadovy
Invited Speaker; International Coral Reef Initiative, 8 - 12 Nov. 2010, Samoa.
Organizer & Speaker; Mini-symposium in the Annual Gulf and Caribbean Fisheries Institute Meeting, 1-5 Nov. 2010, Puerto Rico.
Invited Speaker; Live Reef Food Fish Trade Sustainability Meeting, 28-31 May 2010, Palawan, Philippines.

Wai Tak Cheung
Oral Presentation; 2010 ASFB Conference and Climate Change Symposium, 12-14 July 2010, Australia Society for Fish Biology, Melbourne, Australia.

Gray A Williams
Invited Speaker; World Congress of Malacology, 18-24 July 2010, Phuket, Thailand.
Visiting Lecturer; The University of Palermo, 27 Apr.-6 May 2010, Italy.
Visiting Lecturer; The University of Johannesburg, 2-6 Apr. 2010, S. Africa.

Cynthia Yau
Invited Presentation; Happy Valley Rotary Club, 14 June 2010, Hong Kong

Postgraduates

Kevin Ho
Oral Presentation; Environmental and Human Health: Impact Assessment, 4-17 July 2010, City University of Hong Kong, Hong Kong.
Poster Presentation; The 6th International Conference on Marine Pollution and Toxicology, 31 May-3 June 2010, City University of Hong Kong, Hong Kong.

Adela Li
Oral Presentation; Environmental and Human Health: Impact Assessment, 4-17 July 2010, City University of Hong Kong, Hong Kong.
Oral Presentation; SETAC Asia/Pacific 2010 Meeting, 4-7 June 2010, Guangzhou, China.
Oral Presentation; The 6th International Conference on Marine Pollution and Ecotoxicology, 31 May-3 June 2010, City University of Hong Kong, Hong Kong.
Terence Ng
The Symposium on Environmental Management in Pearl River Delta, Review, Challenges and Opportunities, 30 Oct. 2010, Hong Kong.

Stella Wong

Oral & Poster Presentations; The 6th International Conference on Marine Pollution and Ecotoxicology, 31 May-3 June 2010, City University of Hong Kong, Hong Kong.

Elvis Xu
The Symposium on Environmental Management in Pearl River Delta, Review, Challenges and Opportunities, 30 Oct. 2010, Hong Kong.

Yang Teng Teng
Climate Change Conference 2010, 3 Nov. 2010, Hong Kong.
The Symposium on Environmental Management in Pearl River Delta, Review, Challenges and Opportunities, 30 Oct. 2010, Hong Kong.

Andy Yi
The 6th International Conference on Marine Pollution and Ecotoxicology, 31 May-3 June 2010, City University of Hong Kong, Hong Kong.

The 2nd XMU & HKU Joint Postgraduate Symposium on “Dynamic Aquatic Ecosystems: Current Research and Perspectives”, 1-4 Mar. 2010, Xiamen University, China

Dongxing Yuan
Ms. Penny Chen, Ms. Chen Fang-yi, Ms. Phyllis Du, Ms. He Cong-ying, Ms. Patty Lian, Mr. Liao En-hui, Ms. Sophia Lin, Ms. Liu Sha, Ms. Cathy Su, Mr. Samuel Wang, Mr. George Song, Ms. Wu Yu-ling, Mr. Ryan Xu, Ms. Joyce Yao, Ms. Ann Zhang, Ms. Sharon Zhang, Ms. Ruby Zhang & Ms. Zhou Xi-ping

From National Yunlin University of Science and Technology (Taiwan)
Mr. Ou Shin-chih & Mr. Wang Yeoung-sheng

From SWIMS:
Dr. Clement Dumont, Dr. Leszek Karczmarski, Dr. Nancy Karraker & Dr. V. Thiagarajan
Mr. Juan Carlos Astudillo, Mr. Solomon Chak, Ms. Vera Chan, Mr. Dineshram Ramadoss, Mr. Kevin Ho, Mr. Acker Lane, Ms. June Leung, Ms. Kathy Li, Ms. Adela Li, Mr. Charles Ma, Mr. Terence Ng, Mr. Nicolas Ory, Mr. Kelvin Wong & Ms. Stella Wong

From SBS, HKU:
Mr. Constantine Lau, Ms. Teresa Ma & Mr. Cooper Ren

Emerging SRT Workshop – Earth as a Habitable Planet

Workshop Attendees
Prof. Gray Williams
Dr. V. Thiagarajan
Dr. Clement Dumont
Dr. Leszek Karczmarski
Prof. Rudolf Wu (SBS, HKU)
Dr. Kenneth Leung
Dr. David Thomson (SBS, HKU)
Dr. Jason Ali (Dept of Earth Sciences, HKU)
Dr. Guochun Zhao (Dept of Earth Sciences, HKU)
Dr. Yongqiang Zong (Dept of Earth Sciences, HKU)
Dr. Melissa Hart (Dept of Geography, HKU)
Prof. Sun Kwok (Faculty of Science, HKU)
Dr. Stephen Pointing (SBS, HKU)
Dr. YiHuang Li (Dept of Earth Sciences, HKU)
Dr. MH Lee (Dept of Earth Sciences, HKU)
Dr. ZH Liu (Dept of Earth Sciences, HKU)
Dr. K Lemike (Dept of Earth Sciences, HKU)

The 2nd XMU & HKU Joint Postgraduate Symposium on “Dynamic Aquatic Ecosystems: Current Research and Perspectives”, 1-4 Mar. 2010, Xiamen University, China

Symposium Attendees
From XMU:
Prof. Lihue Cai, Dr. Mingru Chen, Dr. Nengwang Chen, Prof. Minhan Dai, Dr. Qinghua Fang, Prof. Huasheng Hong, Dr. Min Liu, Prof. Dazhi Wang & Prof. Dongxing Yuan

Ms. Penny Chen, Ms. Chen Fang-yi, Ms. Phyllis Du, Ms. He Cong-ying, Ms. Patty Lian, Mr. Liao En-hui, Ms. Sophia Lin, Ms. Liu Sha, Ms. Cathy Su, Mr. Samuel Wang, Mr. George Song, Ms. Wu Yu-ling, Mr. Ryan Xu, Ms. Joyce Yao, Ms. Ann Zhang, Ms. Sharon Zhang, Ms. Ruby Zhang & Ms. Zhou Xi-ping

From National Yunlin University of Science and Technology (Taiwan)
Mr. Ou Shin-chih & Mr. Wang Yeoung-sheng

Grey with Simon and Ping at their Long Service Award Ceremony

Staff Training
Ms. Sylvia Yiu has attended workshop on Handling Challenging Behaviour at Work on 27 April 2010.
Ms. Cecily Law has attended the Refresher First-Aid course on 3 May 2010 and examination on 17 May 2010.
Ms. Sylvia Yiu has attended elementary Putonghua course from 13 September to 6 December 2010.
Mr. Cheung Ming Hong has attended the OCEANIC Alliance Equipment and Repair Program on 4 October 2010.
Visitors to SWIMS

Prof. Sun Kwok & wife (Faculty of Science, HKU)
Prof. Cheuk-Yiu Ng & wife (Faculty of Science, CUHK)
Mr. CK Wong (AFCD)
Ms. Sally Kong (AFCD)
Dr. YM Mak (AFCD)
Mr. Alex Kwok (AFCD)
Prof. John Reynolds III (Mote Marine Laboratory, USA)
Dr. David Morritt (University of London, UK)
Dr. Rick Stafford (University of Gloucestershire, UK)
Prof. Mark Davies (University of Sunderland, UK)
Dr. Tomonari Akamatsu (National Research Institute of Fisheries Engineering, Fisheries Research Agency, Japan)
Dr. Xiugiang Zhao (Institute of Hydrobiology, Chinese Academy of Sciences, China)
Mr. Chen Fianyin (Futan University, China)
Mr. Constanttine Lau (SBS, HKU)
Ms. Michelle Luk (SBS, HKU)
Ms. Angelene (Department of Earth Sciences, HKU)
Mr. Xie Shici (Guangdong Ocean University, China)
Mr. Hong Pengzhi (Guangdong Ocean University, China)
Dr. Wu Zaohe (Guangdong Ocean University, China)
Mr. Ronald Chu (The Hong Kong Federation of Youth Groups)
Prof. Michel May (Bedin University, Germany)
Dr. Markus Hecker (University of Saskatchewan, Canada)
Dr. Gary Cherr (Bodega Marine Laboratory, USA)
Dr. Nature McGinn (Bodega Marine Laboratory, USA)
Ms. Venessa Li (EIL Company Limited)
Dr. Roger Bamber (ARToo Marine Biology Consultants LLP, UK)
Mr. Elvis Xu (Ocean University of China)
Ms. Shao Liu (Nankai University, Tianjin, China)
Ms. Li Chen (Xiamen University, China)
Mr. Wong Yuen Yee (Department of Architecture, HKU)
Mr. Yee Kin Hang (Department of Architecture, HKU)
Dr. Lindsay Porter (Kota Kinabalu, Malaysia)
Dr. Katrina Bradley (HK)
Dr. Chris Harley (University of British Columbia, Canada)
Dr. Patrick Martone (University of British Columbia, Canada)
Mr. Alan Chan (Estates Office, HKU)
Mr. Charles Frew (HK)
Ms. Nathalie Mauroo (Ocean Park Hong Kong)
Prof. Mike Elliott (University of Hull, UK)
Prof. Victor Wepener (University of Johannesburg, S. Africa)
Dr. Richard Greenfield (University of Johannesburg, S. Africa)
Ms. Natalie Degger (University of Johannesburg, S. Africa)
Prof. Maria Bebianno (University of Algavar, Portugal)
Ms. Maria Gonzalez-Rey (University of Algavar, Portugal)
Mr. Chou Wing-ken (AFCD)
Mr. Dickey Lau (AFCD)
Dr. Andy Cornish (WWFHK)
Mr. Spenser Tang-Smith (WebGreek Inc., USA)
Dr. Aixin Yan (SBS, HKU)
Dr. WY Lui (SBS, HKU)
Mr. Fung Kin Fung (HKBU)
Prof. David Paterson (University of St. Andrews, UK)
Ms. Julie Serot (UCLA, USA)
Dr. Benny Chan (Academia Sinica, Taiwan)
Ms. June Chang (National Taiwan University)
Mr. Kenneth Lai (SBS, HKU)
Dr. Jill Saffrey (Open University, UK)
Mr. Chong Chen (University of Oxford, UK)
Dr. Qi Yanling (Tongji University, China)
Ms. Zhang Wen (North China Electric Power University, China)
Ms. Chan Guikui (South China Agricultural University, China)
Ms. Liu Xu (Xiamen University, China)
Mr. Shanthanagouda Admane Holeyappa (RMIT University, Australia)
Ms. Li Jingchun (University of Michigan, USA)
Mr. Les Luck (Australian Consulate-General)
Mrs. Jenny Luck (Australian Consulate-General)
Ms. Chloc Lam (SBS, HKU)
Dr. Moriaki Yasuhara (Smithsonian Institute, USA)
Dr. Leo Chan (SBS, HKU)
Prof. Wu Yuling (Sun Yat-Sen University, China)
Mr. Ray Zheng (Sun Yat-Sen University, China)
Mr. Joe Lin (Sun Yat-Sen University, China)
Mr. Tommy Zhang (Sun Yat-Sen University, China)
Mr. Alex Xu (Sun Yat-Sen University, China)
Mr. Liu Rulong (HKUST)
Mr. Yeung Tai Cheong (HKUST)
Dr. Stanley Lau (HKUST)
Dr. Jill Chiu (SBS, HKU)
Ms. Xu Xin Fu (SBS, HKU)
Ms. Amy Li (SBS, HKU)
Mr. Sam Li (SBS, HKU)
Ms. Lun Hau In (HKUST)
Mr. Mak Ka Fai (HKUST)
Ms. Cynthia Wong (Nanyang Technological University, Singapore)
Mr. James Hui (HK)
Ms. Wong Ching Yan (SBS, HKU)
Mr. Pierre Sicur (SIS)
Dr. C Little (Bristol University, UK)
Dr. Chris Mettam (Cardiff University, UK)
Ms. P Stuling (c/o Bristol University, UK)
Mr. So Chu Wing (Department of Physics, HKU)
Mr. Jason Pun (Department of Physics, HKU)
Ms. Tang Ying (South China Agriculture University, Guangzhou, China)
Prof. E Nisber (Department of Earth Sciences, HKU)
Mr. John Sung (Estates Office, HKU)
Mr. Clement Wong (Estates Office, HKU)
Mr. TT Chan (Estates Office, HKU)
Prof. Joe Lee (Griffith University, Australia)
Dr. K Anbarasu (Bharathidasan University, India)
Ms. Wei-lung Chang (Taiwan National University)
Mr. Wong How Man (China Exploration & Research Society)
Dr. Lau Tak Chuen, Edward (SBS, HKU)
Mr. Glenn Gailey (Texas AFM University, USA)
Dr. Alan Chan (AFCD)
Mr. Alex Kwok (AFCD)
Ms. Li Hiu-yan (AFCD)
Dr. Chris Davies (Wirwaternsand University, S. Africa)
Ms. Siwen Ding (UCLA, USA)
Dr. Liu Min (Xiamen University, China)
Mr. T. Muthukumar (SBS, HKU)
Ms. EA Yang (AFCD)
Ms. Janice Yee (AFCD)
Mr. Jason Tong (AFCD)
Mr. Fung Wai Sing (AFCD)
Ms. Darling Lee (AFCD)
Ms.value of\nMr. So Chu Wing (Department of Physics, HKU)
Mr. Jason Pun (Department of Physics, HKU)
Ms. Tang Ying (South China Agriculture University, Guangzhou, China)
Prof. E Nisber (Department of Earth Sciences, HKU)
Mr. John Sung (Estates Office, HKU)
Mr. Clement Wong (Estates Office, HKU)
Mr. TT Chan (Estates Office, HKU)
Prof. Joe Lee (Griffith University, Australia)
Dr. K Anbarasu (Bharathidasan University, India)
Ms. Wei-lung Chang (Taiwan National University)
Mr. Wong How Man (China Exploration & Research Society)
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Ms. Siwen Ding (UCLA, USA)
Dr. Liu Min (Xiamen University, China)
Mr. T. Muthukumar (SBS, HKU)
Ms. EA Yang (AFCD)
Ms. Janice Yee (AFCD)
Mr. Jason Tong (AFCD)
Mr. Fung Wai Sing (AFCD)
Ms. Darling Lee (AFCD)
Ms. value of

Institutional abbreviations:
AFCD - Agriculture, Fisheries and Conservation Department;
CUHK - Chinese University of Hong Kong; HKBU - Hong Kong Baptist University; HKUST - Hong Kong University of Science and Technology;
KGV - King George V School; SBS - School of Biological Sciences; SIS - South Island School; WIS - West Island School; WWFHK - World Wide Fund Hong Kong.
Group Visits
40 staff and students from West Island School, Jan. 2010
24 UGS from Chinese University of Hong Kong, Jan. 2010
54 members from Swire Properties Community Ambassadors, Mar. 2010
90 staff and students from South Island School (in 2 days), Mar. 2010
48 members from HKU Alumni Association, Apr. 2010
40 teachers from Po Leung Kuk 1983 Board of Directors' College, June 2010
45 UGS from M.Sc. Class, HKU, Sept. 2010
70 staff and students from West Island School (in 3 days), Sept. 2010
40 staff and students from Island School, Oct. 2010
22 staff and UGS from General Education Unit, HKU & WWFHK, Oct. 2010
85 staff and students from King George V School (in 2 days), Nov. 2010
60 members from Swire Group Staff Association (in 2 groups), Nov. 2010
21 UGS from Biological Oceanography, HKU, Nov. 2010
21 UGS from Environmental Science, HKU, Nov. 2010

Acknowledgements
Sir John and Sir Adrian Swire, John Swire & Sons Ltd
Mr. JB Rae-Smith, The Swire Group of Companies, Hong Kong
Ms. Maisie Shun Wah, The Swire Group of Companies, Hong Kong
Prof. Tsui Lap-Chee, Vice-Chancellor, HKU
Prof. Roland T. Chin, Deputy Vice-Chancellor, HKU
Prof. Paul Tam, Pro-Vice-Chancellor, HKU
Prof. Sun Kwok and staff, School of Biological Sciences, HKU
Prof. Rudolf Wu and staff, School of Biological Sciences, HKU
Mr. KPK Wong, Director, Estates Office, HKU
Mr. KS Wong, Assistant Director, Estates Office, HKU
Mr. Tony Wu & Mr. YT Siu and staff, Estates Office, HKU
Dr. Edmund KM Hau and staff, Safety Office, HKU
Mr. PBL Lam and staff of Finance and Enterprises Office, HKU
Ms. Bernadette Tsui and staff, Development and Alumni Affairs Office, HKU
Ms. Katherine Ma and staff, Communication & Public Affairs Office, HKU
Directors and staff, WWF HK
Mr. Alan CK Wong, Director, AFCD
Mr. Alan Chan, AFCD
Ms. H.Y. Lee, AFCD
Mr. Alex Kwok and staff, AFCD
Mr. Kwok Ka-keung, Director of Environmental Protection Department
Mr. Lui and staff, PCCW Cape d’Aguilar station
Mr. Lee Boon-ying and staff, the Hong Kong Observatory
Ms. Suzanne Gendron, Mr. Timothy Ng and staff, Ocean Park Conservation Foundation Hong Kong

For donations to research at SWIMS:
The Swire Group
Faculty of Science, HKU
Research Services, Registry, HKU
Ocean Park Conservation Foundation, HK
CONICYT Bicentennial Becas-Chile
Research Grant Committee, University Grants Committee, HK
Hurghada Environmental Protection and Conservation Association, Egypt
King George V School
West Island School
Island School
Clearwater Bay Country Club

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Vivien Bao, Stephen Cartwright, Vera Chan, Clement Dumont, Nathalie Goodkin, Ji-Dong Gu, Kevin Ho, Leszek Karczmarski, John Kwok, Adley Lane, Cecily Law, June Leung, Kenneth Leung, Priscilla Leung, Adela Li, Kathy Li, Terence Ng, Ng Wai Chuen, Yvonne Sadovy, Ricky Tang, V. Thiagarajan, Wai Tak Cheung, Gray Williams, Kelvin Wong, Simon Wong, Stella Wong, Elvis Xu, Teng Teng Yang, Cynthia Yau
# Contact Details

## Honorary Director
- Prof. Gray A Williams: hrsbwga@hkucc.hku.hk

## Resident Scientists
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