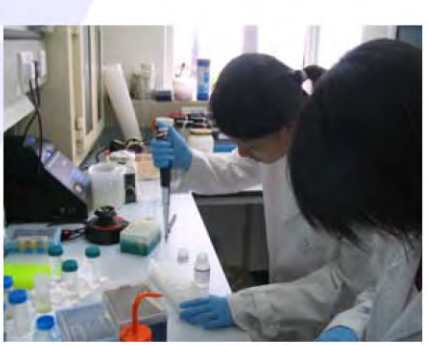
The Swire Institute of Marine Science

太古海洋科學研究所



Annual Report 2006

Honorary Director's Foreword

Gray Williams lecturing to prospective students in Shanghai, China

This year has been particularly productive in terms of research outputs and collaborations. We have welcomed two new Post Doctoral Fellows, Drs. James True and Ng Wai Chuen to SWIMS as well as a new intake of research students. We have extended our collaboration with Ocean Park Conservation Foundation, HK (OPCFHK) expanding the University Sponsorship Programme and also, with the recent appointment of one of our graduates, Anna Situ, as an Assistant Scientific Officer with OPCFHK.

It has also been a special year in terms of community outreach and involvement at SWIMS. Throughout the year we have hosted an increasing number of school groups, as well as school students joining us for community service / outreach projects, or as part of their work experience programmes. This form of outreach is an important aspect of the work we do at SWIMS, a point highlighted by Dr. Wong Fuk-yee in his opening speech during the 10th Anniversary Celebration of the Marine Reserve in September. This event cemented the good relationship between SWIMS and AFCD and highlighted our combined efforts for conservation and management of the Reserve. Similar links were also enhanced with the inaugural meeting of the SWIMS Advisory Board, which involves colleagues from other departments within HKU, as well as Government and the Swire Group. This board will advise on the direction and goals that SWIMS hopes to achieve in the future.

Much of the latter part of 2006 has been spent on the organization and planning of the International Conference on the Ecophysiology of Marine Organisms (ICEMO), which has the theme *Coping with climate change: physiological responses of marine organisms* and will be held in January 2007 - I believe this will confirm the status of SWIMS as an internationally important centre for research in this area and help establish the research direction of SWIMS for the next 2-3 years. Clearly there is much to look forward to in 2007.

Best wishes for 2007 and the Chinese Year of the Pig
from the staff and students of SWIMS.

Gray A Williams

Participants at the 10th Anniversary of the Cape d'Aguilar Marine Reserve

SWIMS and Ocean Park Conservation Foundation Sponsorship Programme

In 2005, the Ocean Park Conservation Foundation became the Ocean Park Conservation Foundation, Hong Kong (OPCFHK). As part of this change, the OPCFHK University Sponsorship Programme was broadened to include terrestrial as well as marine conservation projects, for four of which, eight lucky students from the Department of Ecology & Biodiversity were selected.

Milla Fok and Tracy Pang took part in a 5-day boat survey, studying the abundance and movement of the baiji and the Yangtze finless porpoise in the waters connecting Poyang Lake to the Yangtze River. They observed up to 200 porpoises, but no baiji. They witnessed large-scale dredging and heavy vessel traffic in the lake, which may be having adverse impacts on these endangered cetaceans.

Vivien Bao and Angela Lam were challenged with designing enrichment items to stimulate captive-reared giant pandas in the China Conservation and Research Centre for Giant Panda in Wolong, Sichuan. They designed three items to provide stimuli and add variety to the daily life of the animals through food (puzzle feeder), sound (sound-tube) and odour. The bamboo-style puzzle feeder turned out to be the favourite with the pandas.

Fion Cheung and Tony Hung braved freezing conditions to conduct a bird survey as part of a detailed baseline survey of Mabian Dafengding Nature Reserve in Sichuan. They recorded 27 bird species, including two new records for the Nature Reserve. However, there were constant reminders of human development encroaching into this area of high biodiversity from mining activities and the construction of hydropower stations.

Shadow Sin and Vivian Lam surveyed the abundance of Indo-Pacific humpback dolphin in Sanniang Bay, Guangxi, as part of a study investigating dolphin-human interactions in the area. They participated in boat transect surveys and also helped with the difficult photo-identification work, managing to identify 20 different individuals even though they claimed that after a while, "every dolphin looked the same"!

All the students returned to Hong Kong with a strong appreciation of the importance of such conservation projects, and shared their experiences with friends and the public through a series of talks and media interviews organized by OPCFHK upon their return. Many thanks to OPCFHK for sponsoring this wonderful opportunity for the students.

Milla and Tracy sampling the local culture with scientists involved in the finless porpoise and baiji survey

Vivien and Angela with Wei Ming at the China Conservation and Research Centre for Giant Panda

The puzzle feeder designed by Vivien and Angela was a great hit with the giant pandas

Shadow and Vivian conducting a boat survey of Indo-Pacific humpback dolphins in Sanniang Bay

Staff Research

Gray taking photo quadrats in Amakusa, Japan

Gray A Williams

This year has seen advances in investigating the behavioural basis of herbivore movement patterns. Together with Dr. Giacomo Santini (Florence University) and Avis Ngan, we have been able to predict movement patterns in the limpet, *Cellana grata*. This research has highlighted new areas for investigation, especially in terms of opening the "black box" of energetic and physiological costs that animals experience during emersion periods.

In April-May, Drs. Mark Davies (Sunderland University) and Rick Stafford (CEFAS) visited to continue collaboration on littorinid behaviour. Utilizing computer models of littorinid movement and comparing the results with shore-based observations, we have shown that aggregations of snails can be predicted based on simple decision rules using an individual-agent approach. This finding provides insights into the evolution of group behaviour based on individual level selection, as well as applications for artificial intelligence models.

Kenny with Prof J-S Lee at the opening of the National Research Laboratory, S. Korea

Kenny Leung

Global warming poses considerable threats to living organisms. To better picture the possible consequences of elevated temperatures on coastal organisms, I am collaborating with Prof. J-S Lee (Hanyang University, South Korea) to study environmental genomics and phenotypic plasticity of the copepod, *Tigriopus japonicus*, from temperate Korea and tropical Hong Kong. Although temperate copepods exposed to a higher temperature gradually develop some thermal tolerance over generations, their fecundities are significantly lowered. In contrast, high temperature has an insignificant effect on the Hong Kong population. Therefore, both genetic and phenotypic factors are essential to govern their thermal tolerance. We are also studying gene expression in these two populations based on expressed sequence tags. This work is funded by the South Korea Government through the National Research Laboratory scheme.

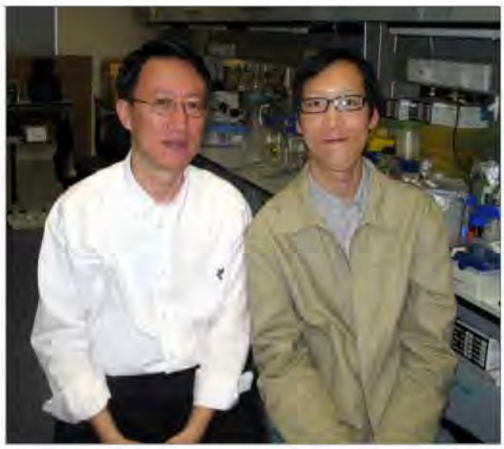
Cynthia Yau

Few studies have previously examined the planktonic larval stages of important fished species in Hong Kong waters. However, with the decline in local fisheries production and a growing realization that there is an urgent need for greater protection of fish spawning and nursery areas, my research group has been collecting information on the early life stages of commercially important, marine species and their habitats. Zooplankton surveys are being conducted in the western waters of Hong Kong to investigate the distribution and seasonality of fish larvae (i.e. the ichthyoplankton) and stomatopod (mantis shrimp) larvae. While in the northeastern waters of Tolo Harbour and Channel, juvenile fish assemblages in nursery grounds are being studied by means of a monthly beam trawl survey. These surveys will contribute to our knowledge of the life histories of local fished species, as well as help identify where important spawning and nursery areas are located.

Flatfish larva (family Bothidae) from an ichthyoplankton sample

Ji-Dong Gu

Hexavalent chromium (Cr^{6+}) is a harmful environmental pollutant, which can be detoxified and precipitated through biologically catalyzed reduction to Cr^{3+}. A bacterium, *Bacillus megaterium* TKW3, isolated from chromium-contaminated marine sediments of Hong Kong, was capable of reducing Cr^{6+} in concomitance with metalloids (Se^{4+}, Se^{6+} and As^{5+}). Peptide mass fingerprints (PMF) revealed a novel aerobic membrane-associated reductase. Future identification of the *N*-terminal amino acid sequence of this reductase will facilitate the purification and understanding of its enzymatic action.



JD Gu with his postdoctoral fellow Cheung Ka Hong, who is in charge of the Cr project

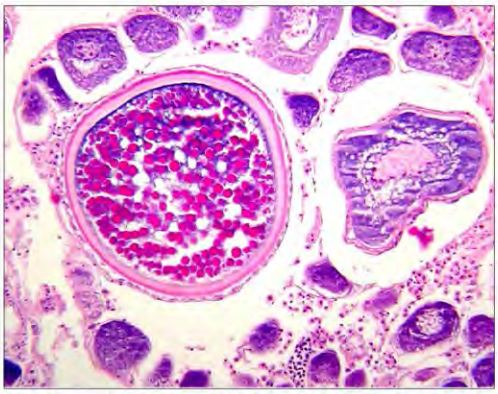
Yvonne Sadovy

Significant progress has been made on two long-term international fish conservation and management projects; reef fish spawning aggregation surveys and Napoleon fish management. The Society for the Conservation of Reef Fish Aggregations (SCRFA), run under my direction, continues its work on aggregation research and outreach, globally, largely funded by the Packard Foundation. 2006 was a busy year for SCRFA: we ran a large workshop in Fiji on reef fish fisheries; saw the first spawning aggregation in Southeast Asia to receive protection in northern Palawan, Phillipines, and promoted several statements of concern in international forums on the issue of aggregation - fisheries. Our global aggregation database (www.scrfa.org) now contains almost 600 spawning aggregation records and is widely used for research and management.

Yvonne and Allen To taking a break after studying Napoleon fish in the Banda Islands

Post Doctoral Fellows

Liu Min



Mature female E. coioides *with testicular tissue*

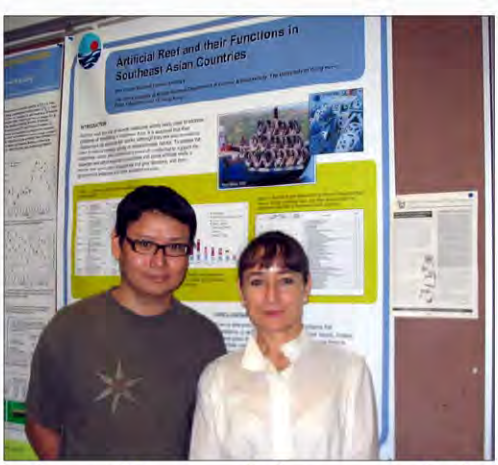
Liu Min continues her research into understanding the sexual differentiation of the orange-spotted grouper, *Epinephelus coioides* (Serranidae). Histological examinations revealed that all juveniles develop an ovarian gonad about 30-weeks after hatching. With the development of primary-growth stage oocytes, spermatogenic tissue also develops in what becomes a bisexual gonad prior to male development. Juveniles with bisexual gonads first mature as females, and then pass through a bisexual gonadal phase prior to male sexual maturation, which reflects the sexual plasticity in *E. coioides*. Liu Min is currently conducting research into juvenile sexual differentiation by social control.

Wai Tak Cheung

Huge amounts of terrestrial detritus are transported downstream to coastal areas during the summer

Wai Tak Cheung has focused his research on tropho-dynamics in local marine systems, tracing the source and fate of energy in marine communities. Using stable isotope and fatty acid analyses he investigates the supply and availability of detritus and algal-derived organic matter as food sources for marine consumers. With the onset of the summer monsoon, massive degeneration of erect macroalgae is associated with enhanced supply of phytoplankton and stream-borne terrestrial detritus. Wai's work shows a switch from a dependence on food chains based on marine autotrophy to dominance of heterotrophic food chains based on decomposing algal and terrestrial detritus, suggesting that seasonal transitions in the importance of detrital energy sources may be typical of coastal ecosystems in the monsoonal tropics.

Ng Wai Chuen

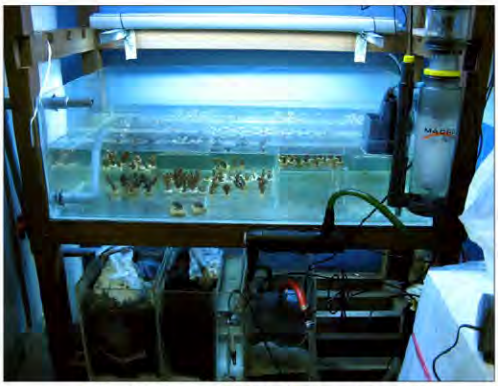


Chuen and Yvonne won the best poster award in the 1st Asia Pacific Coral Reef Symposium

The focus of Ng Wai Chuen's research is the population genetics of marine animals. He is coordinating a RGC funded project on the supply-side ecology and population genetics of the barnacle genus *Tetraclita* in East and Southeast Asia. This involves fieldwork in Japan, China and Hong Kong, as well as genetic analysis using Amplified Fragment-Length Polymorphism (AFLP). He is also working on the small-scale genetic structure, cohort and temporal variation of the limpet *Cellana grata* along Hong Kong shores using microsatellite markers. These studies aim to resolve the genetic linkages and the possible patterns of larval transport on both a local and regional scale. Chuen also has interests in fishery issues, and is co-authoring a review on the function of artificial reefs in Southeast Asia.

James True

James True joined SWIMS from James Cook University in North Queensland, Australia. His work on the Great Barrier Reef focused on the physiological and geochemical signatures of stress in hard corals. At SWIMS, this focus has shifted towards delineating the boundary conditions limiting coral growth and reproduction, and the combination of environmental factors that determine whether or not coral reefs form in a given location. As part of his research, James has developed a "coral farm" at SWIMS - partly to ensure a sustainable supply of healthy corals for experimentation without the need for repeated collections from the wild population. Other benefits of the coral farm are that it allows SWIMS researchers to look at ways to accelerate the rehabilitation of degraded marine habitats and to repopulate communities affected by environmental impacts.



The developing SWIMS "coral farm"

Postgraduate Research

Environmental stress and behavioural plasticity

Over the last year, Avis Ngan's project has focused on predicting the foraging strategies of the limpet, *Cellana grata*, using computer models (programmed with Dr. Santini from Florence University). Limpet activity was found to conform to an energy maximizing strategy, i.e. trying to get as much food as the environmental conditions allow. Secondly, he showed how *C. grata*'s activity is governed by environmental conditions such as tidal patterns and heat stress during the summer. Avis' work has shown that the behaviour of *C. grata* is associated with a combination of external environmental conditions and internal processes that lead to individual variation.

Avis measuring heat stress in limpets

Coexistence of intertidal molluscan grazers

Jasmine Ng's previous studies showed that trophic partitioning occurs in intertidal grazers. Multiple biochemical markers separated grazers into different guilds, related to their radular morphology. Such trophic partitioning facilitates coexistence of these abundant and diverse grazers. Their coexistance is also enhanced through their ecophysiology. Thermal tolerance is closely linked with grazer body plan, with coiled gastropods able to conserve more body water and maintain lower mantle water concentrations than chitons and limpets. Jasmine's work shows that differential thermal tolerance can help explain variable emersion-related mortalities in these species.

Chitons utilize crevices to reduce thermal stress

Damgy working on Tetraclita *samples in Taiwan*

Supply-side ecology research in the tropical intertidal

Damgy Chan studies the supply-side ecology of the barnacle, *Tetraclita japonica,* using both ecological and molecular aspects. Her ecological work shows the importance of larval supply and recruitment success for the survivorship of *T. japonica*. In terms of her molecular studies, Damgy has discovered genetic differentiation between wild and cultured *T. japonica* cyprids. Together with Prof. KH Chu (Chinese University), they have been using GeneScan to investigate genotypic-dependent onshore selection and genetic variation between cohorts. The information obtained will be used to highlight the significance of supply-side ecology in tropical regions.

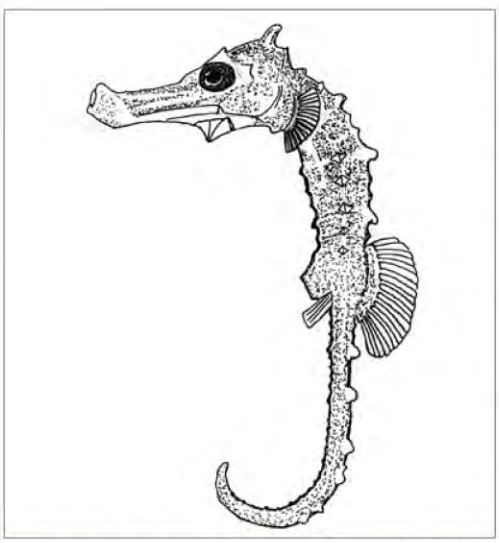


Illustration of a juvenile seahorse (Family Synathidae) by Anna Situ

The ichthyoplankton assemblage at Cape d'Aguilar

Over the past year, Anna Situ has been working on the seasonal variability and family composition of the ichthyoplankton assemblage at Cape d'Aguilar Marine Reserve. This project is the first comprehensive study of this kind in Hong Kong. Sixty families of fish larvae were recorded, with the highest diversity in the spring transitional period and in summer. The diversity and abundance of ichthyoplankton were high compared to other studies along the coast of the northern South China Sea, and illustrate the importance of using a comprehensive monitoring protocol to describe the ichthyoplankton assemblage in the Marine Reserve. Anna has submitted her M.Phil thesis and is now working with OPCFHK as an Assistant Scientific Officer.

Milla sorting fish samples

Juvenile fish assemblages in Tolo Harbour and Channel

Milla Fok is investigating fish juveniles in possible fish nursery areas in Tolo Harbour and Channel. Using a monthly trawl survey and measuring environmental parameters, Milla hopes to gain a better understanding of the environmental conditions and their relationship with juvenile fish assemblages. In view of the importance of the Tolo area as a possible fish nursery area, AFCD is proposing to designate the area as a Fisheries Protection Area (FPA). Therefore, Milla's study will also serve as a baseline relevant for future management of the FPA. Up to now, 76 species of fishes from 39 families have been identified, including some new records for Hong Kong.

Serranid diversity and biomass in Hong Kong

Allen To's work focuses on serranids ("groupers"), including their species composition, relative abundance and biomass. Eight sites were intensively surveyed using SCUBA during a 3-month period in summer, to be repeated in winter months. Preliminary results reveal relatively higher biomass of serranids in coral communities as compared with boulder-dominated sites. Allen's work showed, however, no higher biomass of serranids within non-fished areas compared to fished areas. Currently, he is studying whether this reflects the low effectiveness of protected areas for increasing fish biomass in Hong Kong.

Allen surveying off Trio Island

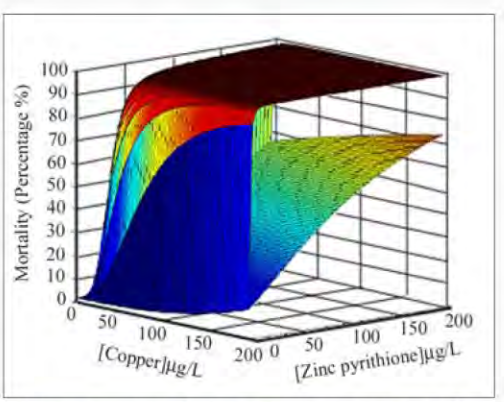
Investigating the ecotoxicity of nanomaterials

The rapid proliferation of many different engineered nanomaterials presents a dilemma to regulators regarding their potential as environmental hazards. In collaboration with Dr. Aleksandra Djurišic (Physics Department, HKU), Kevin Kwok has been investigating the ecotoxicities of engineered nanomaterials on selected tropical marine organisms. His preliminary results suggest that some of these, such as nano titanium oxides and nano zinc oxides, are very toxic to the copepod *Tigriopus japonicus*, causing significant declines in numbers at low concentrations. Kevin will study their impacts on other marine species and will extend his work to cover other widely used nanomaterials.

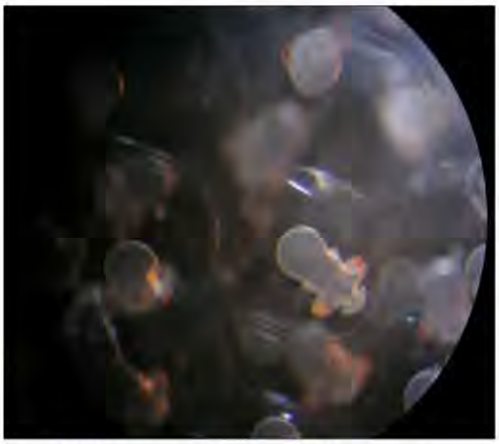
Nauplius larva of T. japonicus

Combined toxicities of anti-fouling biocides

Synthetic anti-fouling biocides such as Irgarol and zinc pytithione (ZuPT) are often used in conjugation with copper (Cu), although their combined effects are unknown. Vivien Bao has been investigating this issue, and has demonstrated the additive effect of Irgarol and Cu on the copepod, *Tigriopus japonicus,* and the polychaete, *Hydroides elegans*. Her results show ZuPT synergistically interacts with Cu, resulting in dramatically increased toxicity to *T. japonicus*. Vivien's work suggests that the current water quality criterion for individual biocides derived from laboratory ecotoxicity tests with the biocide alone are inadequate to protect coastal environments, like Hong Kong, with elevated Cu levels.



Loewe synergism (upper response surface) of ZnPT and Cu on T. japonicus



Embryonic squid seen under the microscope

Natal site fidelity of squid in Hong Kong waters

The squid, *Uroteuthis duvauceli,* is a commercially exploited species in Hong Kong, believed to migrate into Port Shelter during the summer to mate and spawn. To verify this, Wallace Choi has investigated whether this species returns to the same area for breeding. Using laser ablation inductively coupled plasma mass spectrometry to analyse the elemental composition of squid statoliths in relation to their environmental conditions, Wallace has shown that this species migrates back to its natal sites upon sexual maturity. His work provides a better understanding of the life history of *U. duvauceli*, which is important for ensuring the sustainable fishery of this species.

Stephen working in Japan with SWIMS graduate, Dr. Neil Hutchinson

Investigating the role of barnacles on tropical shores

Climate-induced increases in temperature will compound the thermal stress intertidal organisms have to endure. Animals cope with heat stress using behavioural and physiological mechanisms, but if stress levels exceed their tolerance, what are the alternatives available? Stephen Cartwright is investigating whether positive interactions (facilitation) exist between sessile barnacles (*Tetraclita*) and mobile gastropods, where the barnacles create a relatively benign habitat by ameliorating thermal stress. In the past year, Stephen has also worked at field sites in China (Hainan and Zhoushan) and Japan (Amakusa) to determine whether changes in assemblages can serve as predictors of climate change.

Ricky relaxing after a plankton tow

Identification and distribution of stomatopod larvae

Ricky Tang is studying the larval ecology of stomatopods to assess their seasonal and geographic abundance in Hong Kong waters through zooplankton surveys. Stomatopods (or mantis shrimps) are of commercial importance, however, there are virtually no studies on their early life stages in the South China Sea. Genetic techniques, such as DNA sequencing, will be used to identify various larval stages by matching them with known adults, and help in the development of an identification key. Ricky's study will therefore be the first of its kind in this region and aims to better understand the life history of stomatopods.

Environmental regulations - catching the real "criminal"?

Irgarol 1051 is a popular herbicide used in antifouling paints. Irgarol is potent for killing aquatic plants, however, it undergoes degradation and turns into various compounds. Some of these compounds possess greater phytotoxicity than Irgarol, but are receiving little attention in environmental regulations. By looking into the eco-toxicities of Irgarol and its related compounds to marine organisms of different trophic levels, Amy Zhang is assessing the potential ecological risks of using Irgarol in coastal marine environments. Her study will also provide recommendations for improvement of antifouling paint regulations.

Amy subculturing cyanobacteria for her experiment

To be or not to be: butterflyfishes as environmental indicators

Butterflyfishes (family Chaetontidae) are conspicuous inhabitants of coral reefs. Many are obligate coral feeders and depend upon live coral for their food. Because of their diets, these fishes have been proposed as indicators of the ecological status of coral reefs. Despite the wide use of butterflyfishes in reef monitoring programmes, there remains a need to evaluate empirically how these fishes respond to local live substrates. To do this, Stanley Shea is investigating the distribution and abundance of Chaetodontidae to assess the utility of using local corallivorous chaetodontids as indicators for coral reef condition in Hong Kong.

Stan working on a census in Sai Kung

Sharks and Rays in Hong Kong

Elasmobranchs include some of the top marine predators, yet they are highly vulnerable to fishing pressure due to their slow growth and low reproductive rates. Shadow Sin's research will focus on combining historical records and indigenous knowledge from experienced and patriarch local fishermen to understand past species composition, abundance and size of sharks and rays, and compare these with the present day. Shadow will pay special attention to the one remaining resident shark species that can still be regularly found in market samples, the white-spotted bamboo shark, *Chiloscyllium plagiosum*.

Shark sold in a Hong Kong wet market

The endangered humphead wrasse

Amy receiving 1st prize for best student presentation at the MBAHK Postgraduate Symposium from Dr. Paul Shin

Drs. Rick Stafford and Mark Davies filming movement of littorinids at Cape d'Aguilar

SWIMS and IUCN

Since the 2004 CITES Appendix II listing for the Napoleon fish (humphead wrasse), *Cheilinus undulatus*, the IUCN (World Conservation Union) Groupers & Wrasses Specialist Group besed in DEB has been collaborating closely with the government of Indonesia and the United Nations Food & Agriculture Organization (FAO) to develop a sustainable management plan for the species. Nearing completion is the creation of a novel fisheries model, together with Dr. Andre Punt and FAO, that can be adopted to establish sustainable export quotas for this species. As a result, Indonesia introduced an export quota of 8,000 fish based on this work, a 10-fold decrease from pre-CITES listing levels.

SWIMS and the MBAHK

SWIMS continues its close links with the MBAHK, co-hosting seminars and maintaining an active presence on the MBAHK Council. This year Amy Zhang won the prize for the best student presentation at the MBAHK Postgraduate Symposium.

Research Visitors and Seminars

This year, SWIMS initiated its own series of in-house, informal, seminars to discuss research ideas, share techniques and generally become more familiar with the research projects taking place at SWIMS. Within the year we heard seminars from Damgy Chan, Allen To, Vivien Bao and James True. We organized talks from visitors, including Prof. Lajus (St Petersburg State University, Russia) and Dr. Amiard-Triquet (University de Nantes, France) and hosted a visit from Prof. Lee and Drs. Choi and Yoon from Cheju University, S. Korea, who also gave a seminar at the Department of Ecology & Biodiversity.

In terms of research, Prof. Lajus worked with Kenny Leung, analyzing fluctuating asymmetry in barnacles in collaboration with Dr. Benny Chan (Taiwan). Dr. Michael Eitel (Germany) visited to collect placozoans and Dr. J. Wong brought scientists from Nanjing University to study the whale skeleton. Drs. Mark Davies (Sunderland University, UK) and Rick Stafford (CEFAS, UK) returned to SWIMS to continue their research on herbivore behavioural patterns. Another old friend, Prof. Li Fu-Xue (Xiamen University), also came back to SWIMS to collaborate with Cynthia Yau investigating squid and octopus taxonomy.

Our work in the aquarium has benefited from interactions with Mr. David Lai and his staff from Ocean Park, who toured SWIMS and hosted a return visit for SWIMS staff to visit facilities at Ocean Park, and the skills of Ms. Joyce Ng who has joined us on a one year secondment from Kadoorie Agricultural Research Centre.

Community Outreach

2006 has seen a bumper year for community visitors to SWIMS. In terms of visits, SWIMS hosted over 20 groups totaling well over 600 visitors. These ranged from Green groups and NGOs (e.g. WWF HK, HK Reef Fish ID Association); school groups for tours (e.g. Fukien Secondary School, St. James Settlement) and also for seminars and fieldwork (e.g. South Island School, King George V, Island School); as well as numerous tertiary groups (e.g. Hong Kong Baptist University, Hong Kong University of Science and Technology, the Genome Research Centre etc). These visits are very important as they help introduce the Marine Reserve, as well as highlighting SWIMS research and spreading the ideals of marine conservation to people from different sectors of Hong Kong society.

Students from West Island School cleaning outside tanks

We also played host to a great variety of student helpers and research assistants. These ranged from local secondary school students on their work experience or community service programmes, to overseas University students who came to gain research experience at SWIMS over the summer. This year we again hosted students from different parts of the world including, Australia, Canada, USA and the UK; as well as local, Hong Kong students. Our most ambitious project in 2006 involved a group of 18 students from King George V School who, in two separate groups, spent 2 weeks working at SWIMS joining our research community.

Students from South Island School studying corals

Over 35 of our Hong Kong University students helped out with specific research projects; especially sorting fish larvae with Anna Situ and Cynthia Yau, barnacle cyprid larvae with Damgy Chan and Ng Wai Chuen, and juvenile fish samples with Milla Fok. Overall, these helpers spent 1000's of hours looking down microscopes counting and sorting larvae - and without their great help many of those projects could not have been completed in time! We also had some of the Environmental Life Science and Biology students undertaking their own research projects at SWIMS for their final year projects; many of whom hope that they will be accepted to follow their work up as higher degrees in the coming year.

Students from West Island School helping as part of their community service

On a larger scale, SWIMS was also featured in a number of newspaper articles, including the Hong Kong Economic Times, and was included in a CCTV programme on research in Hong Kong.

Students from King George V School mapping rock complexity

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 Woodward, 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.

Pacific Institutes of Marine Science

SWIMS is also a founding member of the Pacific Institutes of Marine Science and Gray Williams sits on the committee of their Fellowship Exchange Scheme.

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

Accommodation at the Residence is available for students, researchers and visitors working at SWIMS. It is also available to outside visitors who wish to enjoy the scenic serenity Cape d'Aguilar has to offer. It is an ideal retreat from the city on weekdays and makes a perfect getaway for quiet weekends.

SWIMS residential blocks are situated on top of the Cape d'Aguilar cliffs, offering magnificent sea views of the southern islands of Po Toi and Waglan, and west, behind the residence, where there are steep dramatic cliffs and views of Shek O.

Residential block overlooking the Marine Reserve

Those interested in booking the accommodation, please contact Ms. Sylvia Yiu.

SWIMS and AFCD

On 9th November we joined with colleagues from AFCD to celebrate the 10th Anniversary of the opening of the Cape d'Aguilar Marine Reserve. Since its designation in 1996, AFCD has managed and issued permits for scientific studies in the Marine Reserve. To celebrate this occasion, Drs. Wong Fuk-yee and Gray Williams opened the event, which was chaired by Mr. Patrick Lau, highlighting the successes of the Reserve and the relationship between SWIMS and AFCD. In the last 10 years, AFCD has successfully prosecuted over 100 cases of illegal usage of the Marine Reserve, issued over 70 permits to conduct scientific studies, and permitted numerous school and green groups to visit the Reserve. Within these 10 years, SWIMS has produced over 400 research papers, hosted 6 international conferences/workshops, graduated 56 higher degree students, and been visited by over 500 overseas scientists, attesting to the international importance of the research conducted within the Cape d'Aguilar Marine Reserve.

Dr. FY Wong presents SWIMS with a certificate of appreciation from AFCD

The celebration continued with a tour of the Reserve and SWIMS facilities, followed by refreshments and then a series of talks by Kenny Leung, Chuen, Wai and Anna on SWIMS research. Finally Gray Williams and Mr. Edward Wong reflected on the future of the Reserve, with Gray emphasising the need for more coordinated research and management of Hong Kong's coastal environment.

This event was an excellent opportunity to share the successes of the last 10 years, and acknowledges the continued efforts of AFCD to improve the efficient running of the Reserve. This was highlighted in Dr. FY Wong's speech when he announced the new change in the Marine Parks and Reserves regulations, which now allow for a more streamlined permitting system for scientific studies. This change will be a great asset to SWIMS researchers and reinforces the close collaboration between SWIMS and AFCD.

Edward Wong and Gray Williams discussing research techniques

SWIMS, Big Fish Count and ReefCheck

Postgraduates, teaching staff from SWIMS and graduates participated in the annual Reef Check, organized by AFCD and Reef Check Foundation. As in previous years, the SWIMS team dived at Siu Long Kei. The sunny day was excellent for a dive, and water was reasonably "clear"! Though the coral coverage was not particularly impressive, James True recorded 10 genera among the patchy coral communities. However, there was little luck for the fish and invertebrate counters, with only a few small wrasses and butterflyfish and tens of sea urchins. Luckily, a few of the team saw a lobster hiding just outside our survey area, which was one of the highlights of the day! Divers enjoyed the day very much and this offered a valuable opportunity for current students, staff and graduates to meet, and get to know each other better in a relaxing atmosphere, as well as help check on the status of Hong Kong's coral communities.

SWIMS Reef Check team

SWIMS Publications (Dec. 2005-Nov. 2006)

Bini G, Williams GA, Chelazzi G (2006) Neuronal cholinergic control is involved in the modification of cardiac activity and circulation induced by waterborne copper in the chiton *Acanthopleura japonica*. *Journal of Experimental Marine Biology and Ecology* 338: 43-49

Cartwright SR, Coleman RA, Browne MA (2006) Ecologically relevant effects of pulse application of copper on the limpet *Patella vulgata*. *Marine Ecology Progress Series* **326**: 187-194

Chan BKK, Chan KKY, Leung PCM (2006) Burrow architecture of the ghost crab *Ocypode ceratophthalma* on a sandy shore in Hong Kong. *Hydrobiologia* **560**: 43-49

Chan BKK, Morritt D, DePirro M, Leung KMY, Williams GA (2006) Summer mortality: effects on the distribution and abundance of the acron barnacle *Tetraclita japonica* on tropical shores. *Marine Ecology Progress Series* **328**: 195-204

Cheung KH, Lai HY, Gu J-D (2006) Membrane-associated hexavalent chromium reductase of *Bacillus megaterium* TKW3 with induced expression. *Journal of Microbiology and Biotechnology* **16**: 855-862

Davies MS, Edwards M, Williams GA (2006) Movement patterns of the limpet *Cellana grata* (Gould) observed over a continuous period through a changing tidal regime. *Marine Biology* **149**: 775-787

Gu J-D (2006) Editorial. *International Biodeterioration & Biodegradation* **58**: 59

Hutchinson N, Nagarkar S, Aitchison JC, Williams GA (2006) Microspatial variation in marine biofilm abundance on intertidal rock surfaces. *Aquatic Microbial Ecology* **42**: 187-197

Jung SO, Lee YM, Park TJ, Park HG, Leung KMY, Dahms HU, Lee W, Lee JS (2006) The complete mitochondrial genome of the intertidal copepod *Tigriopus* sp. (Copepoda, Harpactidae) from Korea and phylogenetic considerations. *Journal of Experimental Marine Biology and Ecology* **333**: 251-262

Lam K, Morton B (2006) Morphological and mitochondrial-DNA analysis of the Indo-West Pacific rock oysters (Ostreidae : *Saccostrea* species). *Journal of Molluscan Studies* **72**: 235-245

Lam KH, Tang CF, Leung KMY, Tsang VWH, Cheung RYH, Lam MHW (2006) A study of the partitioning behaviour of Irgarol-1051 and its degradation products. *Chemosphere* **64**: 1177-1184

Leung KMY, Kwok RPY, Ng WC, Toshihiro H, Yang RQ, Song MY, Jiang GB, Zheng GJ, O'Toole DK, Lam PKS (2006) Ecological risk assessments of endocrine disruptive organotin compounds using marine neogastropods in Hong Kong. *Chemosphere* **65**: 922-938

Li J, Gu J-D (2006) Biodegradation of dimethyl terephthalate by *Pasteurella multocida* Sa follows an alternative biochemical pathway. *Ecotoxicology* **15**: 391-397

Morton B (2005) Fishing perturbations and beached corals in the Cape d'Aguilar Marine Reserve, Hong Kong (2000-2002) and a summary of data obtained from January 1996 to March 2003. *Marine Pollution Bulletin* **50**: 1273-1286

Morton B (2006) Scavenging behaviour by *Ergalatax contractus* (Gastropoda : Muricidae) and interactions with *Nassarius nodifer* (Gastropoda : Nassariidae) in the Cape d'Aguilar Marine Reserve, Hong Kong. *Journal of the Marine Biological Association of the United Kingdom* **86**: 141-152

Mous PJ, Sadovy Y, Halim A, Pet JS (2006) Capture for culture: artificial shelters for grouper collection in SE Asia. *Fish and Fisheries* **7**: 58-72

Ng JSS, Williams GA (2006) Intraspecific variation in foraging behaviour: the influence of shore height on temporal organization of activity in the chiton. *Acanthopleura japonica*. *Marine Ecology Progress Series* **321**: 183-192

Pauly D, Alder J, Sadovy Y, et al (2005) Marine Fisheries Systems. Chapter 18 in Ecosystems and Human Wellbeing: Current State and Trends. *The Millenium Ecosystem Assessment Series* **1**: 477-511

Pet JS, Mous PJ, Muljadi AH, Sadovy Y, Manica A (2006) Aggregations of *Plectropomus arcolotus* and *Epinephelus fuscoguttatus* (groupers, Serranidae) in the Komodo National Park. Indonesia monitoring and implications for management. *Environmental Biology of Fishes* **74**:209-218

Scale H, Balmford A, Liu M, Sadovy Y, Manica A (2006) Keeping bandits at bay? *Science* **313**: 612-613

Shen P, Zhou H, Lai HY, Gu J-D (2006) Benthic infaunal composition and distribution at an intertidal wetland mudflat. Water, *Air and Soil Pollution: Focus* **6**: 575-581

Sadovy Y (Ed.) (2005) Napoleon Fish (humphead wrasse), *Cheilinus undulatus*, trade in southern China and underwater visual census survey in southern Indonesia. *IUCN Groupers & Wrasses Specialish Group*. 26 pp.

Sadovy Y (Ed.) (2006) Development of fisherels management tools for trade in humphead wrasse, *Cheilinus undulatus*, in compliance with Article IV of CITES. *IUCN Groupers & Wrasses Specialish Group*. Final Report April 2006, 103 pp.

To AWL, Hau BCH, Lee SKH (2006) A study on the trade in dried abalones in Hong Kong. *TRAFFIC Bulletin*, **21**(1): 25-34

Wai T-C, Williams GA (2006) Effect of grazing on coralline algae in seasonal, tropical, low-shore rock pools: spatio-temporal variation in settlement and persistence. *Marine Ecology Progress Series* **326**: 99-113

Wai T-C, Williams GA (2006) Monitoring spatio-temporal variation in molluscan grazing pressure in seasonal, tropical rock pools. *Marine Biology* **149**: 1139-1147

Wang Y, Gu J-D (2006) Degradation of dimethyl isophthalate by *Viarovorax paradoxus* strain T4 isolated from deep-ocean sediment of the South China Sea. *Journal of Human and Ecological Risk Assessment* **12**: 236-247

Wang Y, Gu J-D (2006) Degradation of dimethyl terephthalate by *Variovorax paradoxus* T4 and *Sphingomonas* paucimobilis DOS1 of the South China Sea. *Ecotoxicology* **15**: 549-557

Wang Y, Leung PC, Qian P, Gu J-D (2006) Antibiotic resistance and plasmid profile of environmental isolates of *Vibrio* species from Mai Po Nature Reserve, Hong Kong. *Ecotoxicology* **15**: 371-378

Wenning RJ, Leung KMY (2006) Protecting China's rivers. *SETAC/ Integrated Environmental Assessment and Management* **2**: 101-102

Xu XR, Li HB, Gu J-D (2006) Simultaneous decontamination of hexavalent chromium and methyl *tert*-butyl ether by UV/TiO2 process. *Chemosphere* **63**: 254-260.

Yan Y, Chan BKK, Williams GA (2006) Reproductive development of the barnacle *Chthamalus malayensis* in Hong Kong: implications for the life-history patterns of barnacles on seasonal, tropical shores. *Marine Biology* **148**: 875-887

Yin B, Gu J-D (2006) Aerobic degradation of 3-methylindole by *Pseudomonas aeruginosa* Gs isolated from mangrove sediment. *Journal of Human and Ecological Risk Assessment* **12**: 248-258.

Yin B, Huang L, Gu J-D (2006) Biodegradation of 1-methylindole and 3-methylindole by mangrove sediment enrichment cultures and an isolated *Pseudomonas aeruginosa* Gs. *Water, Air and Soil Pollution* **176**: 185-199

SWIMS Publications (Dec. 2005-Nov. 2006)

Zhang R, Wang Y, Gu J-D (2006) Identification of environmental plasmid-bearing *Vibrio* species isolated from polluted and pristine marine reserves of Hong Kong and resistance to antibiotics and mercury. *Antoine van Leeuwenhoek - International Journal of General and Molecular Microbiology* **89**: 307-315.

Zhang R, Jiang J, Gu J-D, Li S (2006) Long term effect of methylparathion contamination on soil microbial community diversity estimated by 16S rRNA gene cloning. *Ecotoxicology* **15**: 523-530

Zhang R, Cui Z, Zhang X, Jiang J, Gu J-D, Li S (2006) Cloning of the organophosphorus pesticide hydrolase gene clusters of seven degrading bacteria isolated from a methyl parathion contaminated field site and evidence of their horizontal gene transfer. *Biodegradation* **17**: 465-472

Zhao Z, Gu J-D, Fan X-J, Li HB (2006) Molecular size distribution of dissolved organic matter in water of the Pearl River and trihalomethane formation characteristics with chlorine and chlorine dioxide treatments. *Journal of Hazardous Materials* **B134**: 60-66

Other Contributions from SWIMS

Ji-Dong Gu

Member of Editorial Boards: Biodegradation, International Biodeterioration & Biodegradation, Chinese Journal of Applied Ecology, Ecologic Science, Ecotoxicology, Journal of Polymers and the Environment, Journal of Tropical Oceanography, Water and Wastewater

Guest Editor: special issue in International Biodeterioration & Biodegradation journal (Volume 58, 2006)

Guest Professor: East China University of Science and Technology, Shanghai, and Zhejiang University, Hangzhou, China

Kenny Leung

Member of Editorial Board: Integrated Environmental Assessment and Management

Librarian, MBAHK

Liu Min

Member, IUCN Specialist Group for Groupers and Wrasses

Mainland China Coordinator, Reef Check Foundation

Yvonne Sadovy

Director, Society for the Conservation of Reef Fish Aggregations (SCRFA)

Chair, IUCN Specialist Group for Groupers and Wrasses

Co-Chair SSC Marine Conservation Sub-Committee

International Advisory Council of the University of British Columbia Fisheries Centre

Member, Scientific Advisory Committee of the Palau International Coral Reef Centre

Chair, Conservation Projects Committee, WWF-HK

Member of Editorial Boards: Conservation Biology, Fish & Fisheries, Reviews in Fish Biology & Fisheries

Gray A Williams

Member, Pacific Institutes of Marine Science Fellowship Committee

Vice Chairman, MBAHK

Cynthia Yau

Member, Cephalopod International Advisory Council

SWIMS representatives at the 7th International Temperate Reef Symposium in Santa Barbara, USA

Other Contributions from SWIMS

Conferences and Workshops

Ji-Dong Gu

Co-organizer; International Conference on Environmental Health and Pollution Control, 22-25 Oct. 2006, Nanjing, China.

Leading-edge Strategies and Technologies for Sustainable Urban Water management, 16-20 Sept. 2006, Hong Kong University of Science and Technology, Hong Kong.

The 4th Okazaki Biology Conference: Terra Microbiology 2, 10-15 Sept. 2006, Okazaki, Japan.

11th International Society of Microbial Ecology (ISME11) Meeting, 20-25 Aug. 2006, Vienna, Austria.

Invited Presentations; The 9th National Symposium on Environmental Microbiology, 15-18 Aug. 2006, Hangzhou, China.

Water 2006, August 1-4, 2006. Auckland, New Zealand.

International Conference on Catchments to Coast, 9-14 July 2006, Cairns, Queensland, Australia.

IWA Specialized Conference - Sustainable Sludge Management: State of the Art, Challenges and Perspectives, 28 May-2 June 2006, Moscow, Russia.

National Association of Corrosion Engineers, 12-16 Mar. 2006, San Diego, California, USA.

Kenny Leung

Invited Presentation; The East Asian Seas Congress, 12-16 Dec. 2006, organized by the GEF/UNDP/IMO Regina Programme on Partnerships in Environmental Management for Seas of East Asia (PEMSEA), Hainan, China.

Co-organizer & Invited Presentation; International Conference on Environmental and Public Health Management: Aquaculture and Environment, 7-8 Dec. 2006, Hong Kong Baptist University, Hong Kong.

Invited Member; Workshop on Environmental Monitoring and Risk Assessment of Persistent Organic Pollutants (POPs), 23-25 Nov. 2006, organized by Environmental Protection Department of HKSAR Government, Hong Kong Museum of History, Hong Kong.

Oral & Poster Presentations; SETAC Asia/Pacific Annual Meeting, 18-20 Sept. 2006, Peking University, China.

Oral & Poster presentations; SETAC Europe 16th Annual Meeting, 7-11 May 2006, The Hague, The Netherlands.

Co-organizer; Workshop on the Environmental Impact of Nanomaterials. 2-6 May 2006, Croucher Foundation Advanced Study Institute on Nanotoxicology, City University of Hong Kong, Hong Kong.

Liu Min

Poster Presentation; Symposium on Biology and Assessment of Protogynous Hermaphrodites, 10-14 Sept. 2006, Lake Placid, New York, USA.

Oral Presentation; The 3rd Workshop on Gonadal Histology of Fishes, 11-12 July 2006, New Orleans, Louisiana, USA.

Oral Presentation; The 2nd Cross-Strait Coral Reef Symposium, 25-29 June 2006, Hainan, China.

Poster Presentation; Asia Pacific Coral Reef Symposium, 18-24 June 2006, The Chinese University of Hong Kong, Hong Kong.

Workshop on Western Pacific Workshop on Policy, Enforcement and Sustainable Trade for the CITES Appendix II Listed Humphead/Napoleon Wrasse, *Cheilinus undulatus*, 5-7 June 2006, Hong Kong.

Workshop on Regional Approach for Responsible Development of Mariculture in Asia-Pacific, 7-11 Mar. 2006, Guangzhou, Guangdong, China.

Ng Wai Chuen

Poster Presentation, International Conference on Environmental and Public Health Management: Aquaculture and Environment, 7-9 Dec. 2006, Hong Kong Baptist University, Hong Kong.

Invited Speaker; International Forum on the Future Development of Constructed Reefs in Taiwan, 10-11 Sept. 2006, Research Center for Biodiversity, Academia Sinica, Taiwan.

Best Poster Award with Yvonne Sadovy; Asia Pacific Coral Reef Symposium, 18-24 June 2006, The Chinese University of Hong Kong, Hong Kong.

Yvonne Sadovy

Oral Presentation; The 2nd Cross-Strait Coral Reef Symposium, 25-29 June 2006, Hainan, China.

Poster Presentation; Asia Pacific Coral Reef Symposium, 18-24 June 2006, The Chinese University of Hong Kong, Hong Kong.

Workshop on Western Pacific Workshop on Policy, Enforcement and Sustainable Trade for the CITES Appendix II Listed Humphead/Napoleon Wrasse, *Cheilinus undulatus*, 5-7 June 2006, Hong Kong.

Gulf and Caribbean Fisheries Institute Annual Meeting, 5-11 Nov. 2006, Belize City, Belize.

Asia Pacific Coral Reef Symposium, 18-24 June 2006, The Chinese University of Hong Kong, Hong Kong.

Wai Tak Cheung

Oral Presentation; 7th International Temperate Reef Symposium, 26 June-1 July 2006, The University of California, Santa Barbara, USA.

Gray A Williams

Oral Presentation & Session Chair; 7th International Temperate Reefs Symposium, 26 Jun-1 July 2006, The University of California, Santa Barbara, USA.

Speaker and Interviewer; University Student Application Programme, 1- 3 Dec 2006, Shanghai, China.

Cynthia Yau

Invited Adjudicator; The 2nd MBAHK Postgraduate Symposium, 21 Oct. 2006, The Hong Kong University of Science & Technology, Hong Kong.

Poster Presentation; Cephalopod International Advisory Council, International Symposium, 'Cephalopod Life-cycles: Biology, Management & Conservation', 6-10 Feb. 2006, Hobart, Australia. Cephalopod International Advisory Council, 'Movement and Migration of Cephalopods', 2-3 Feb. 2006, Hobart, Australia.

Postgraduates

Vivien Bao

Oral Presentation; 2nd Marine Biological Association of Hong Kong Postgraduate Symposium, 21 Oct. 2006, The Hong Kong University of Science and Technology, Hong Kong.

Oral Presentation; SETAC Asia/Pacific Annual Meeting 2006, 18-20 Sept. 2006, Peking University, China.

Poster Presentation; SETAC Europe 16th Annual Meeting, 7-11 May 2006, The Hague, The Netherlands.

Stephen Cartwright

7th International Temperate Reefs Symposium, 26 June-1 July 2006, The University of California, Santa Barbara, USA.

The 2nd MBAHK Postgraduate Symposium, 21 Oct. 2006, The Hong Kong University of Science & Technology, Hong Kong.

Damgy Chan

Oral Presentation; Larval 2006 - 7th Larval Biology Symposium, 27 Aug.-1 Sept. 2006, Oregon Institute of Marine Biology, Oregon, USA.

Oral Presentation; The 2nd MBAHK Postgraduate Symposium, 21 Oct. 2006, The Hong Kong University of Science & Technology, Hong Kong.

Wallace Choi

Workshop; Cephalopod International Advisory Council, 'Movement and Migration of Cephalopods', 2-3 Feb. 2006, Hobart, Australia.

Poster Presentation; Cephalopod International Advisory Council, International Symposium, 'Cephalopod Life-cycles: biology, management & conservation', 6-10 Feb. 2006, Hobart, Australia.

Kevin Kwok

Oral Presentation; International Conference on Environmental and Public Health Management: Aquaculture and Environment, 7-9 Dec. 2006, Hong Kong Baptist University, Hong Kong.

Oral Presentation; 2nd Marine Biological Association of Hong Kong Postgraduate Symposium, 21 Oct. 2006, The Hong Kong University of Science and Technology, Hong Kong.

Oral & Poster Presentation; SETAC Asia/Pacific Annual Meeting 2006, 18-20 Sept. 2006, Peking University, China.

Poster Presentations; SETAC Europe 16th Annual Meeting, 7-11 May 2006, The Hague, The Netherlands.

Workshop on the Environmental Impact of Nanomaterials. 2-6 May 2006, Croucher Foundation Advanced Study Institute on Nanotoxicology, City University of Hong Kong, Hong Kong.

Janet Lee

Oral Presentation; Catchments to Coast - Australian Marine Sciences Association Annual Conference 2006, 9-14 July 2006, Cairns, Australia.

Jasmine Ng

Oral Presentation; 7th International Temperate Reefs Symposium, 26 June-1 July 2006, The University of California, Santa Barbara, USA.

Avis Ngan

Oral Presentation; 7th International Temperate Reefs Symposium, 26 June-1 July 2006, The University of California, Santa Barbara, USA.

Anna Situ

Oral Presentation; The 2nd MBAHK Postgraduate Symposium, 21 Oct. 2006, The Hong Kong University of Science & Technology, Hong Kong.

Oral Presentation; 136th American Fisheries Society Annual meeting, 11-14 Sept. 2006, American Fisheries Society, Lake Placid, New York, USA.

Oral Presentation; Asia Pacific Coral Reef Symposium, 18-24 June 2006, The Chinese University of Hong Kong, Hong Kong.

Allen To

Organizer; The 2nd MBAHK Postgraduate Symposium, 21 Oct. 2006, The Hong Kong University of Science and Technology, Hong Kong.

Oral Presentation; Australian Society for Fish Biology 2006 Conference and Workshop on Cutting-Edge Technologies in Fish and Fisheries Science, 28 Aug.-1 Sept. 2006, Hobart, Tasmania, Australia.

Oral Presentation; Asia Pacific Coral Reef Symposium, 18 - 24 June 2006, The Chinese University of Hong Kong, Hong Kong, China.

Amy Zhang

Best Oral Presentation Award; The 2nd MBAHK Postgraduate Symposium, 21 Oct. 2006, The Hong Kong University of Science & Technology, Hong Kong.

Postgraduate students at the SWIMS Christmas party

Student Graduations

Ph.D

Cheung Ka Hong (2006) - Chromate toxicity assessment and detoxification by bacteria from the marine environment.

Yeung Chung Yan (2006) - The ecology of *Nerita yoldii* and *N. albicilla* on Hong Kong rocky shores.

M.Phil

Ho Chun Man (2006) - Biology and fishery of the bartail flathead, *Platycephalus indicus* (Linnaeus, 1758), in the northern South China Sea.

Lai Chien Houng (2006) - Heat shock protein expression in limpets on Hong Kong rocky shores.

Lui King Yung (2006) - Ecology of commercially important stomatopods in Hong Kong.

Yip Choi Wan (2006) - Degradation of *N*-heterocyclic aromatics indole and 2-methylindole by bacteria from wetland sediment and characterization of the bateria involved.

Staff Training

Mr. Patrick Chan, Mr. Cheung Ming & Mr. Cheung Ming Hong have attended the First Aid Refresher Course and passed the examination.

Ms. Chan Kit Ping has attended the General Safety Training for Cleaners on 6 September, 2006.

Visitors to SWIMS

Dr. Peter Ng (National University, Singapore)
Dr. Konstantin Lutaenko (Institute of Marine Biology, RAS, Vladivostok, Russia)
Prof. Sun Kwok (Faculty of Science, HKU)
Ms. Angela Tsang (Faculty of Science, HKU)
Dr. Choi Kwang-Sik (Cheju National University, S Korea)
Prof. Lee Joon-Baek (Cheju National University, S Korea)
Dr. Yoon Seok-Hoon (Cheju National University, S Korea)
Dr. Richard Stafford (Centre for the Environment, Fisheries and Aquaculture Science (CEFAS), UK)
Dr. Mark Davies (University of Sunderland, UK)
Dr. F Bunker (MarineSeen, Wales)
Dr. Anne Bunker (MarineSeen, Wales)
Mr. Jasper Ip (Department of Architecture, HKU)
Mr. Sam Lam (Department of Architecture, HKU)
Mr. Huey Pang (Department of Architecture, HKU)
Ms. Suzanne Gendron (Ocean Park Conservation Foundation)
Mr. Timothy Ng (Ocean Park Conservation Foundation)
Ms. Ellen Storey (Hull University, UK)
Mr. Joseph Chau (Fukien Secondary School)
Mr. Lin Hu (Sea Coral Limited)
Ms. L.P. Lau (Sea Coral Limited)
Mr. Edward Wong (AFCD)
Mr. Patrick Lau (AFCD)
Mr. Alex Kwok (AFCD)
Mr. Simon Forder (King George V School)
Mr. Ronnie Wong (Internal Audit Office, HKU)
Mr. Jason Sin (Internal Audit Office, HKU)
Mr. Jeff Wan (Internal Audit Office, HKU)
Mr. Sin Yung Wa (CUHK)
Dr. John MK Wong (Hong Kong Marine Conservation Society)
Prof. Zhou Kai-ya (Nanjing Normal University, China)
Dr. Yu Xin-rong (Nanjing Normal University, China)
Dr. Michael Eitel (Veterinary University (TIHO) Hannover, Germany)
Dr. Henry Kaspar (Cawthron Institute, New Zealand)
Mr. Roger King (Cawthron Institute, New Zealand)
Mr. Patrick Ho (WWFHK)
Ms. Margaret Chan (WWFHK)
Mr. Mark Savelli (New World First Bus Services Ltd.)
Ms. Yvonne Chan (Solomon Systech (Int'l) Ltd.)
Dr. Zoe Lyle (Plymouth University, UK)
Dr. Mawgan Grace (Plymouth University, UK)
Dr. Benny Chan (Academia Sinica, Taiwan)
Mr. Hsu Chih-Hsiung (Academia Sinica, Taiwan)
Ms. Fan Yi-Chun (National Taiwan University)
Prof. Li Fu-xue (Xiamen University, China)
Mr. Jack Mark (CUHK)
Mr. ST Cinnamond (Institute of Human Performance, HKU)
Dr. Neil Hutchinson (Amakusa Marine Biological Laboratory, Japan)
Prof. RD Hill (DEB, HKU)
Dr. K Yin (HKUST)
Dr. Ren Jianguo (National Natural Science Foundation of China)
Dr. Chai Yucheng (National Natural Science Foundation of China)
Dr. Minhan Dai (Xiamen University, China)
Dr. Wong Fook-yee (AFCD)
Dr. Leung Kim Fung (EPD)
Ms. Lam Yin Ha (Chinese University)
Ms. Lee Mei Wah (Chinese University)
Mr. Tsang Yu Man (Chinese University)
Mr. David Lai (Ocean Park, Hong Kong)
Mr. Walter Tang (Ocean Park, Hong Kong)
Ms. Yvonne Lim (Ocean Park, Hong Kong)
Mr. Abraham Wong (Ocean Park, Hong Kong)
Dr. Zhang Ying (Ocean Park, Hong Kong)
Dr. Nimal Fernando (Ocean Park, Hong Kong)
Dr. Dmitry Lajus (St. Petersburg State University, Russia)
Dr. Amiard Troguet (Universiti de Nantes, France)
Dr. Amiard Jean-Clarde (Universiti de Nantes, France)
Ms. Christine Hui (Hong Kong Economic Times)
Ms. Elaine Chan (China Office, External Affairs, HKU)
CCTV Film Crew

Institutional abbreviations:
AFCD - Agriculture, Fisheries and Conservation Department; **City U HK** - City University of Hong Kong; **CUHK** - The Chinese University of Hong Kong; **DEB, HKU** - Department of Ecology & Biodiversity, The University of Hong Kong; **EPD** - Environmental Protection Department; **HKBU** - Hong Kong Baptist University; **HKUST** - Hong Kong University of Science and Technology;

Group Visits

103 staff and relatives from HKU Libraries, Jan. 2006
26 staff and students from Fukien Secondary School, Mar. 2006
29 staff of Genome Research Centre, HKU, Mar. 2006
37 secondary school students from the SuperSaturday Programme, Mar. 2006
20 staff and student of King George V School, Mar. 2006
44 secondary school students from the SuperSaturday Programme, Apr. 200
35 secondary school students & their teachers from the Youth Science Conference 2006, Apr. 2006
18 people from the Victoria Parents' Educational Group, May 2006
40 members of the HK (Reef) Fish I.D. Association (HKFID), May 2006
40 participants from "Ocean's 10 bus design competition" of WWFHK, Jun. 2006
20 members from the Association of Laboratory Technicians in Education and Manpower Bureau, Jun. 2006
51 staff and students from Island School, Jun. 2006
36 staff and students from South Island School, Jun. 2006
41 Young Ambassadors from The Hong Kong Federation of Youth Groups, Jul. 2006
36 secondary school students, volunteers and staff from the St. James Settlement, Aug. 2006
30 students from the M.Sc. in Environmental Management course, HKU, Sept. 2006
60 staff and students from Department of Earth Science, HKU, Sept. 2006
44 staff and students from King George V School, Oct. 2006
30 Enviromental Life Science Society students, Oct. 2006
16 staff and students from the HKBU, Oct. 2006
23 students from HKUST, Oct. 2006

Ms Elaine Chan (China Affairs Office, HKU) with the production team for CCTV at Cape d'Aguilar

Students from the SuperSaturday Programme visit the shore

Students barbecuing at SWIMS residence

Environmental Life Science Society students

Acknowledgements

Sir John and Sir Adrian Swire, John Swire & Sons Ltd

Mr. Robert Cutler, The Swire Group of Companies, Hong Kong

Prof. Tsui Lap-Chee, Vice-Chancellor, HKU

Mr. Kenneth PK Wong, Director of Land Development, HKU

Mr. KPK Wong, Director, Estates Office, HKU

Mr. KS Wong, Assistant Director, Estates Office, HKU

Dr. D Mabbott, Dr. M Mackett and staff, Safety Office, HKU

Mr. PBL Lam, Director of Finance Office, HKU

Ms. Bernadette Tsui and staff, Development and Alumni Affairs Office, HKU

Ms. Karen Tang, Ms. Katherine Ma and staff, External Relations Office, HKU

Prof. D Dudgeon and staff, Department of Ecology & Biodiversity, HKU

Directors and staff, WWF HK

Mr. TCY Chan, Director of Agriculture, Fisheries and Conservation Department

Dr. FY Wong, AFCD

Mr. Edward Wong, AFCD

Mr. Patrick Lau, AFCD

Mr. Alex Kwok and staff, AFCD

Mr. KKK Kwok, Director of Environmental Protection Department

Mrs. SM Stimpson and staff, Registry, HKU

Dr. Paul Shin, Chairman and Council of The Marine Biological Association of Hong Kong

Mr. Lui and staff, PCCW Cape d'Aguilar station

Mr. Lam Chiu Ying and staff, the Hong Kong Observatory

Ms. Suzanne Gendron, Mr. Timothy Ng and staff, Ocean Park Conservation Foundation

Clearwater Bay Country Club

Volunteer divers

Many thanks to all the following for their cheerful and excellent help: Ms. Jamius Yeung, Mr. Daniel Williams, Mr. Shehan Peiris, Ms. Doris Sin Yat Sum, Mr. Xavier Lo, Mr. Ka Wai Lin, Mr. Derek Ko K, Ms. Yvonne Yau, Ms. Nadia So, Ms. Jing Zhao, Mr. Philip Wong, Ms. May Chuen, Mr. Cooper Cheng, Ms. Kathy Li, Ms. Alina So, Mr. Jonathan Man, Mr. Parker Lam, Mr. Lesley Leung, Mr. Ringo Chu, Ms. Winnie Yeung, Ms. Miho Mugino, Ms. Leanne Chan, Ms. Lily Zhang, Mr. Matthew Lind, Ms. Jacqueline Fok, Ms. Katherine Kwok, Ms. Janice Au, Ms. Maggie Kwok, Ms. Doris Chan, Ms. Ip Yuen Ting, Mr. Siu Kam To, Ms. Vince Cheung, Ms. Janice Leung, Ms. Tiffany Tsui, Ms. Hannan Tsoi, Mr. Sanchit Kumar, Ms. Anna Whitthoft, Ms. Jessica Williams, Ms. Shadow Sin, Mr. Cheung Kai Hoi, Mr. Felix Ringechan, Ms. Kiki Khangura, Ms. Vivian Lam, Mr. Leon Chan, Mr. John Ngan, Ms. Ada Lee, Ms. Coral Law, Ms. Sarah Mak & Ms. Sophia Chan, Ms. Vivian Lam, Ms. Bell Lau, Ms. Teresa Ma, Ms. Molly Fu, Mr. Hu Yu, Ms. Wong Wai Yu, Creamy Lam, Mr. Ben Wong, Mr. Hui Siu Kwong, Ms. Ng Tung Tung, Ms. Ann Ng, Ms. Vivien Fu, Ms. Stockard Leung, Ms. Lai Nga Yee, Mr. Kingsley Wong, Mr. Wong Yuk, Mr. Lui Ho Wah & Ms. Angel Wong

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Albert Au, Vivien Bao, Stephen Cartwright, Damgy Chan, Wallace Choi, PL Colin, Milla Fok, Cecily Law, Ji-Dong Gu, Kevin Kwok, Kenneth Leung, Liu Min, Ng Wai Chuen, Avis Ngan, Ricky Tang, Yvonne Sadovy, Stanley Shea, Shadow Sin, Anna Situ, Allen To, James True, Wai Tak Cheung, Gray Williams, Cynthia Yau, Ariel Yeung, Amy Zhang

Members of the SWIMS Advisory Board. From left to right: Prof. D Dudgeon; Ms. Angela Tsang (Secretary); Prof. CY Ma; Prof. Sun Kwok (Chairman); Dr. Gray Williams; Mr. Robert Cutler (SWIRES); Dr. Wong Fuk Yee (AFCD); Prof. Rudolf Wu (City University); Prof. Jon Aitchison; Dr. Kenneth Leung; Dr. Yvonne Sadovy

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