



The Swire Institute of Marine Science

太古海洋科學研究所



Annual Report

2014



Gray 'enjoying' a mangrove field visit

Director's Foreword

At the end of 2014 the formal go-ahead for the SWIMS expansion was confirmed and the new development is now underway! We are extremely grateful for the support and vision of the Swire Group, and also Hong Kong University's new President and Vice Chancellor Prof Peter Mathieson's commitment to promote SWIMS as an international centre of excellence for marine science. The new expansion is also timely as 2015 will be another important milestone in SWIMS' evolution as it enters its 25th year since opening in 1990!

In line with SWIMS expansion in physical structure, we have also been lucky enough to appoint two new staff members through the School of Biological Sciences. In summer 2015 we shall welcome Drs Stefano Cannicci (currently Florence University, Italy), and Bayden Russell (currently Adelaide University, Australia). We look forward to Stefano and Bayden joining our growing team of staff at SWIMS. We would also like to thank Prof Christopher McQuaid who finished his term as Distinguished Visiting Professor at SWIMS in 2014 and who played an important role in helping SWIMS focus its research directions.

It has been another extremely successful year for SWIMS with numerous conferences and workshops as well as continued success with publications and grants. One notable event was SWIMS, led by Kenny Leung, joining the World Harbour Project team in November 2014. This project links us with 14 other countries / international harbour cities and is aimed at understanding the unique features of harbour ecosystems. We see such global collaborations as an important part of the new strategic development plan that SWIMS is initiating to mark its 25th anniversary. Given the new expansion, the continued success of current staff and students in securing funding and publications, and the arrival of new staff members it promises to be an exciting next 25 years at SWIMS .

Best wishes from the staff and students of SWIMS.

Gray A Williams



International Collaborations

This year saw a range of international collaborations, with numerous visitors to SWIMS. Ms Cherrie Teh (Universiti Sains Malaysia, Penang) stayed between March-April 2014 to examine the effect of ocean acidification on Malaysian oyster larvae in collaboration with Rajan's group. Dr Koji Seto (Shimane University) led a group including Dr Kaoru Yoshioka (Shimane University), Dr Jun Inoue (Osaka City University) and Dr Takamoto Okudaira (Osaka City University) to take sediment cores from Plover Cove Reservoir, Tolo Harbour, Victoria Harbour and Deep Bay with Moriaki as part of Circle's PhD research. As in previous years, Prof Mark Davies (Sunderland University) returned to collaborate with Terence and Gray on sexual selection in marine snails and in October Dr Alessandro Rinaldi (Palermo University, Italy) re-visited to supervise Alicia and Martin in their Dynamic Energy Budget (DEB) modelling of bivalves.

David hosted several visitors in 2014 including, in April, Dr Kiho Kim (American University) and Prof Laurie Raymundo (University of Guam Marine Lab) to discuss ongoing research in Micronesia. Mr Taihun Kim (Korea Institute of Ocean Science and Technology) joined David's team in July for a research cruise and to assist with sample analysis with collaborator Prof Shuh-Ji Kao's laboratory at MEL, Xiamen University. In September, Dr Ian Hewson (Cornell University) visited David to present his research on the ongoing seastar wasting disease epidemic on the US west coast. Leszek's long-term collaborator, Dr Glenn Gailey (Cascadia Research Collective, Washington, USA) also visited in October and contributed to a regional training workshop in computerised data management systems.

As in previous years our students went on exchange with students from the University of Johannesburg (UJ), with two students, Tommy Hui and Jack Ip, visiting the Tsitsikamma marine reserve in South Africa. Tommy also joined the TROPIMUNDO Erasmus Mundus Course in Florence, Italy

Leszek continued his regional capacity building efforts and organised three training workshops this year: in January, focusing on socio-behavioural analyses of group living animals; in May, focusing on demographic population trend analyses; and in October, focusing on computerised data management systems. The workshops were well-attended by researchers and postgraduate students from the China, Taiwan, Japan, Philippines, Malaysia, and HKU students. In June Simon Wong gave an invited talk and practical training in Zhuhai at the 1st Training Workshop of the Chinese White Dolphin Conservation Coalition which involves eight national reserves from the Mainland's provinces of Guangdong, Guangxi and Fujian.



Ale discussing DEB modelling with students



Moriaki taking sediment cores at Plover Cove Reservoir



Jack netting for fish with University of Johannesburg on the field excursion



Gray & Tommy on the TROPIMUNDO Course in Florence, Italy



UCAS group photo at Wu Kwai Sha, Hong Kong

The 6th UCAS Postgraduate Symposium: Conservation of Aquatic Biodiversity: From Scientific Research to Management

After two very successful symposia in Xiamen and Taiwan, UCAS returned to Hong Kong in Wu Kwai Sha Youth Village from 11-14 March 2014. Over 50 postgraduate students of different nationalities studying within the Greater China Region joined the meeting, and the symposium was also attended by professors from the three organizing institutions, the University of Hong Kong (HKU), Xiamen University (XMU) and National Taiwan Ocean University (NTOU).



UCAS students join together to debate pressing environmental issues

Like other formal conferences, there were student presentations and keynote addresses on a wide range of topics, including the blue economy, fish taxonomy, marine pollution and career development. To facilitate scientific exchange and communication among postgraduate students, the symposium was designed to be small and interactive, and much effort went into organizing various academic and social activities. Apart from the conference dinner, there was also a local tour, a BBQ night and farewell dimsum, eco-tours to Lions Nature Education Center and Tai Po Kau Nature Reserve and group debates on current conservation issues to stimulate critical thinking and interaction; and for the first time in a UCAS symposium – a fun and relaxing trivia night on facts about Hong Kong, China and Taiwan and aquatic sciences was held.

The symposium was very well-received by the participants and the feedback overwhelmingly positive. In 2015, the symposium will be hosted by XMU on their new campus in Xiamen, China. Stay tuned for news and updates: <http://mel.xmu.edu.cn/ucas/index/>



Fernando & Rui constructing 'Robolimpets' for deployment in SE Asia

Robolimpets to monitor coastal temperatures in SE Asia

Following on from the workshop on biomimetic sensors for temperature logging in the coastal environment held at SWIMS in 2013, a second more hands-on, workshop was held in January 2014 entitled 'Robolimpets to monitor coastal temperatures in SE Asia'. Twenty participants from 7 countries joined the workshop which focused on making an army of Robolimpets (biomimetic sensors to monitor temperature profiles), to be deployed around the NW Pacific. To oversee the manufacturing Drs Fernando Lima and Rui Seabra returned to SWIMS to teach participants how to make, calibrate and deploy the Robolimpets. Participants then returned with their newly made Robolimpets to attach them to log changes in environmental temperatures on shores ranging from Japan to Singapore.

The World Is Our Oyster

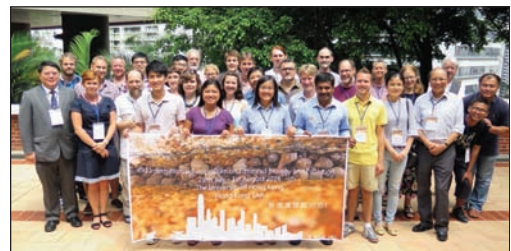
We all know that anthropogenic carbon dioxide taken up by the ocean is causing ocean acidification (OA) which is impacting marine life such as oysters. The impact of OA is economically significant when one considers that China produces over 80% of the world's oysters. Lau Fu Shan in Deep Bay is Hong Kong's traditional oyster-farming site, where oysters have been farmed for more than 50 years supporting ~ 1000 families; today, fewer than 50 families still grow oysters. The situation is worsening and soon more oyster families will be forced to change their livelihood. Why is this decline happening at Deep Bay? The answer to this question is crucial not only for scientists, but also for Hong Kong society and the regional economy. To address this issue, SWIMS organized a meeting in March 2014 along with HKU's Faculty of Science, Medical Faculty and CityU's Chemistry Department that was attended by over 50 scientists and oyster growers from China, Korea, Japan and Malaysia. The primary aim of this symposium was to form a multidisciplinary group involving scientists, seafood consumers and oyster growers to conserve edible oysters through scientific approaches.



Oyster workshop 2014

XI International Symposium on Littorinid Biology and Evolution (XI ISOLBE)

Littorinids are one of the most successful of all marine molluscan families that are found in almost all conceivable intertidal habitats around the world. They have long been attractive as study organisms for students and researchers, and they have been widely used as models in a dazzling array of research fields from ecology, taxonomy and physiology, to micro- and macro-evolution. Since the first ISOLBE meeting at the Natural History Museum in London in 1986, subsequent symposia have been organized regularly every 2-3 years. Traditionally the symposia were mostly hosted by institutes in Europe, and therefore this year we are very proud to have hosted the XI ISOLBE in Hong Kong, the first time in SE Asia! The symposium was held during 28 Jul - 1 Aug 2014 at HKU and SWIMS with 35 participants from 12 countries. The symposium continued the tradition of being informal, friendly and interactive. The talks were all related to littorinid biology but were multidisciplinary and inspiring, and the workshops allowed the sharing of research techniques. Many of our overseas colleagues were exhilarated by their first visit to mangroves in this part of the world. We look forward to engaging again in the great spirit of the ISOLBE in 2017!



Participants of the XI ISOLBE



Field trip at Sheung Pak Nai mangrove



Adonia and Barry during a survey of crocodile nests



SWIMS and Ocean Park Conservation Foundation Hong Kong



Measuring seahorse during underwater surveys in the Philippines

2014 marked the 10th anniversary of the University Student Sponsorship Programme (USSP) funded by the Ocean Park Conservation Foundation Hong Kong (OPCFHK). Initiated in a partnership with HKU a decade ago, the programme currently involves undergraduate students from across all universities in Hong Kong. This year, six HKU students participated in conservation research projects that focused on some of the most threatened wildlife species in Southeast Asia.

In May, Adonia Lam and Barry Yu travelled to a mountainous region of Cambodia where they joined a monitoring programme of reintroduced Siamese crocodiles. The students conducted surveys of crocodile nests and assisted in tracking animals tagged with radio trackers, gathering data on survival rates, movements and behaviours of this critically endangered species.



Chinese crested terns in the only known breeding colony of this species

In mid-June, Nicole Kit and Wai Ling Lam joined a conservation project iSeahorse - Philippines, where they assisted in field surveys of seahorse abundance and diversity, and helped government officials in identifying specimens taken in illegal fishing. Our students gave also talks in local schools, diving shops and hotels, sharing their experience and raising public awareness.

A new research project focusing on Chinese crested terns was among the highlights of this year's USSP. This is one of the world's most threatened bird species, thought to be extinct for over 70 years, until its rediscovery in 2000. Andy Lee and Benson Leung spent three weeks observing the only known remaining population of these birds, numbering less than 50 adult individuals, on an island in Zhejiang, China. Our students assisted in population census and behavioural monitoring, and participated in meetings with local government and conservation organisations where current threats and management plans for this local biodiversity icon were discussed.



Radio tracking of Siamese crocodiles

We are, as ever, grateful to OPCFHK for continuing to provide such unique and valuable opportunities for our students to experience conservation initiatives in this region.

Staff Research

Gray A Williams

Continued research into the physiology and behaviour of high shore littorinid snails dominated this year's work; including completion of the fieldwork for a large latitudinal study (from Japan to Singapore) into thermal tolerance of *Echinolittorina* snails; and on-shore observations of sexual selection of these snails with Dr Terence Ng. The climate change consortium INSHORE (International Network for the Study Of Rocky intertidal Ecosystems) continued to develop through a workshop to produce and subsequently deploy biomimetic temperature loggers (Robolimpets) around the coast of Asia, as well as a special workshop in Northeastern University, Boston.



Gray with other team members of INSHORE at Northeastern University, USA

Kenny Leung

My team and I completed a 2-year study on juvenile fish resources at the three marine parks at northeast Hong Kong for the government. This is a milestone study to show that juvenile fish diversity within the marine parks is higher than the adjacent waters, supporting the indispensable conservation role of the marine parks. The progress of the mega project on the “Ecology and biodiversity of benthic marine ecosystems before and after the trawling ban in Hong Kong coastal waters” is going well. Our preliminary results indicate some initial signs of ecosystem recovery in a site-specific manner.



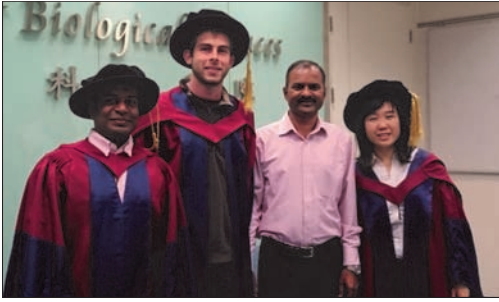
Kenny receiving a special gift for SWIMS from distinguished CAS Academician, Prof. Shou-Yi Zhen

Leszek Karczmarski

Our ongoing study of Chinese white dolphins expanded into the far-western reaches of the Pearl River Delta and comparative demographic analyses of Taiwan's dolphins. A regional Red List assessment of the Hong Kong dolphin population was completed. A genetic study of finless porpoises, conducted with colleagues from Sun Yat-sen University, revealed the distinctiveness of the porpoises from the Pearl River region and provided insights into the origin and phylogeography of the genus. A new project was initiated in the Philippines, investigating delphinid sympatric ecology in the protected Tañon Strait. The recently released software DISCOVERY was upgraded to include R functions, which largely expands its analytical power, and was launched during a keynote talk in Finland.



Leszek and his postgraduates during a visit of the Director of School of Biological Sciences at the Tai O field station



Congratulations to Drs Vera BS Chan, Ackley Lane and Ramadoss Dineshram

V. ThiyagaRajan

Our group has established a relationship with oyster growers to attract public attention towards HK oysters and to lure extra funding for oyster research in this region. Our symposium on “world is our oysters” has identified HK oysters as a “cultural heritage, environmental model and biomedical inspiration”. We are developing technologies for sustainable production of oysters that are safe to eat under ocean acidification and climate change. There are many exciting things that have happened this year: three of our students graduated, I got tenure and three PhD scholars joined us from engineering, bioinformatics and biology disciplines. Our commitment for interdisciplinary work to unravel mechanisms behind climate change impacts on larval oysters and tubeworms is continuously gaining momentum.



Yvonne flying underwater to study spawning aggregations in Palau

Yvonne Sadovy

Yvonne has worked on the biology and preservation of spawning fishes for many years particularly in Fiji and Palau central and western Pacific. In 2014, she returned to Palau to resurvey an aggregation site after 5 years of protection. Of the three grouper species that use the aggregation site, the squaretailed coral grouper, which has a more rapid turnover rate and shorter lifespan than its confamilials, the marbled and camouflage groupers, showed clear signs of recovery. This result is one of few globally that show a positive effect of protection on a grouper aggregation and was good news for the Palauan government which is trying to manage its fisheries.



A welcome dinner in a Chaoyhou restaurant with Moriaki's visitors from Okinawa, Japan

Moriaki Yasuhara

Moriaki's lab continues to work on paleoecology, macroecology, and micropaleontology. The main outcomes this year include discovering pervasive impact of abrupt climatic changes on deep-sea biodiversity and potentially unimodal relationship between temperature and species diversity in the deep sea. Moriaki also published several papers on deep-sea ostracode taxonomy, and continues one of his main interests, tropical biodiversity, with an ongoing project funded by the RGC. Moriaki is now a committee member of bioDISCOVERY, board member of Deep-sea Biology Society, and WoRMS editor for Podocopida (Ostracoda); he is also serving as editorial board member of Global and Planetary Change and is associate editor of Paleontological Research.

David Baker

This year the Baker lab continued to grow with the addition of 2 PhD and 2 MPhil students to join exciting projects, including a new \$1.0M HKD GRF to study coral-hosted dinoflagellates and a \$0.5M ECF award to study nitrogen pollution records from coral skeletons. In the spring we welcomed Anna Depetris who created some incredible coral videos (http://youtu.be/hED3Y_1488A) and Isabelle Ng (Claremont College) for a summer research experience. 2014 ended with a survey of reefs of Myanmar in an effort to better understand their status before future development. Also this year, funding was secured through the HKU Visiting Research Professor Scheme to bring Profs. Nancy Knowlton & Jeremy Jackson for visits in each of the next three years.



David leading a shipboard lecture on stable isotope research to the Burmese dive team.

Post Doctoral Fellows

Terence Ng

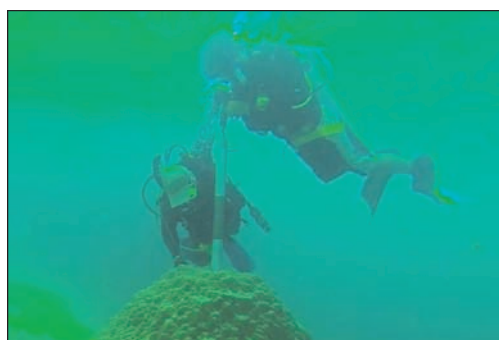
Terence continued his research on sexual selection and mating patterns using intertidal snails as models. Recently, Terence proposed a new hypothesis, that males select females larger than themselves to mate with (i.e. their choice is dependent on relative size), which may explain the formation of size-assortative mating, the most common mating pattern found in many animals. Terence applied these ideas during a Post Doctoral Fellowship at the The Sven Lovén Centre for Marine Sciences in Sweden. Terence has now started a new Postdoc at SWIMS and is working on a new project to investigate how climate warming may affect mating preferences, and hence sexual selection in marine snails.



Terence conducting field work with his helper, Sebastian, at Tjärnö, Sweden

Nicolas Duprey

Nicolas was funded in July 2014 by the HK ECF to work on the project entitled: Two centuries of nitrogen pollution in Hong Kong's coastal waters reconstructed from hard-coral and octocoral $\delta^{15}\text{N}$ records. This project included a two-week training at the Sigman laboratory (Princeton). He has presented results of this study and those of a parallel study aimed at determining which factors shape the coral biodiversity in Hong Kong. Dr. Duprey led three field expeditions to increase our understanding of the influence of nitrogen pollution on HK coral communities. He organized several public outreach workshops with Island School and ENVS undergrad students at SWIMS.



*Nicolas and Phil drilling a *Porites* sp. colony in Guam, USA*



Ackley using continuous flow mesocosms to examine how differences in CO₂ affects colonization

Ackley Lane

This has been a successful year for Ackley, completing his PhD and taking on Post-Doctoral responsibilities. Ackley's thesis, focusing on the tubeworm *Hydroides elegans*, showed genetic variation in pH tolerance, indicating potential for evolution. Ackley found significant effects of parental pH environment on offspring pH tolerance. Furthermore, using comprehensive experimental designs, he demonstrated the importance of separating maternal and paternal effects, which in this case were opposite and additive. Now, Ackley's research has shifted from organism to community scale. Using simple, and inexpensive techniques he is conducting CO₂ manipulation studies in a manner that will make community level research possible in labs worldwide.



Dinesh graduating during the 192nd Congregation, HKU

Ramados Dineshram

It has been a great year for Dinesh, as he successfully transitioned from PhD graduate to a post-doctoral research position at SWIMS. His PhD research investigated the effect of ocean acidification on oyster larvae at the molecular level using modern quantitative proteomics tools. Dinesh's study revealed that oyster larvae adopt an energy 'trade-off' strategy through metabolic suppression and adjust cell signalling pathways to overcome the stress induced by climate change. Several biomarkers in his study may help in identifying a tolerant oyster species for future aquaculture. His current post doctoral research will focus on characterizing the shell-forming proteins in oysters under ocean acidification.



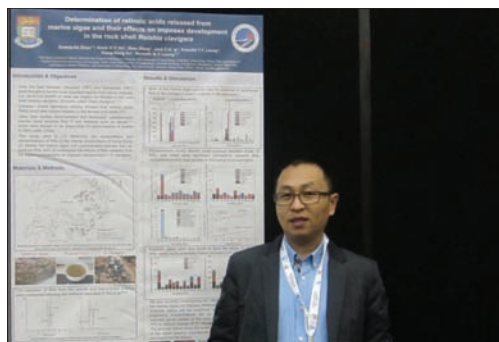
Kevin celebrating his Best Poster Award at the SETAC conference

Kevin Ho

After completion of his PhD in March 2014, Kevin Ho continues to work as a postdoctoral fellow on projects related to marine ecotoxicology. He has been investigating combined toxic effects of organotins and algal retinoic acids on the whelk *Reishia clavigera*, and revealing their toxic mechanisms on triggering sexual change in female whelks. As part of the trawl-ban project, Kevin also investigates the bioaccumulation and biomagnification of persistent organic pollutants in local marine organisms along the food chain.

Guang-Jie Zhou

As a Hong Kong Scholar, Guang-Jie Zhou investigates how marine organisms respond to combined effects of temperature and chemical exposure. Through a meta-analysis, he found that chemical toxicity increases with increasing temperature, or is lowest at an optimal temperature (OT) and increases with increasing or decreasing temperature from OT. These two patterns can be observed at both individual species and community levels. Thus, temperature changes due to climate change and seasonal fluctuation have profound influences on chemical toxicity to marine organisms. Concurrently he is studying combined toxic effects of triphenyltin and algal retinoic acids on a marine gastropod species.



Zhou Guangjie at SETAC Asia/Pacific 2014 Conference

Matthew Perkins

Having completed his PhD at Exeter University, UK, Matthew joined Professor Kenneth Leung's lab in July 2014 to research how the Hong Kong trawl ban is facilitating recovery of marine benthic ecosystems. Using stable isotopes to quantify food web structure, his research primarily investigates patterns and processes of this recovery at a community level. Additionally, through synthesis of existing literature, he is reviewing global impacts of coastal marine structures such as seawalls on biodiversity inhabiting intertidal habitats and their ecological function, with a view to understanding their impacts and identifying mitigation measures (e.g. ecological engineering).



Matthew teaching undergraduate students about rocky shore ecology in UK

Shiang-Lin (Alex) Huang

Alex joined SWIMS in June 2014 and his research focuses on (i) demographic analyses of cetaceans and modeling their population dynamics, (ii) marine mammal status assessment, (iii) oceanographic properties of cetacean distribution patterns, and (iv) impacts of habitat degradation on coastal delphinids. His earlier collaboration with the Cetacean Ecology Lab at SWIMS provided quantitative measures of continuous decline of the Chinese White Dolphin population in the Pearl River Estuary. His current work investigates the vulnerability of this dolphin to long-term habitat loss in the China-Taiwan region. He is also working on a new computer software application for population trend analyses that is intended for release in 2015.



Alex on a survey boat with his colleague on a field survey in Taiwan



Juan Carlos in Yau Ma Tei typhoon shelter to check his field experiments

Postgraduate Research

Distribution of non-native marine invertebrates in Hong Kong

Juan Carlos found non-native marine invertebrates to be restricted to estuarine and polluted environments. To understand whether these environments provide a niche with low predation for non-native species, he tested the recruitment of the non-native ascidian *Ciona intestinalis*. He discovered that winter season and disturbed environments provide a niche for *Ciona intestinalis* to reproduce and recruit in fouling communities with low predation pressure. Through testing the environmental and predation resistance of non-native bivalves, he demonstrated that the invasive *Xenostrobus securis* is resistant to a wide range of temperature and salinity but is vulnerable to a common predatory whelk.



Karen with HKU delegates during the 10th ITRS in Perth, Australia

Persistence in a highly stressful environment

Karen Villarta has been investigating the life history strategies of the limpet, *Cellana toreuma*, and its physiological response to environmental stress. Recent investigations showed how environmental factors affect thermal tolerance and investment in growth and reproduction. The low heat tolerance of this species during the summer can be associated with reduced food availability. Despite being thermally sensitive, this limpet can, however, persist in Hong Kong's highly stressful, dynamic environment by investing in fast growth and reproduction. Such a strategy illustrates that this species relies on annual settlement of juveniles, and any subsequent failure in supply or recruitment may result in local extinction.



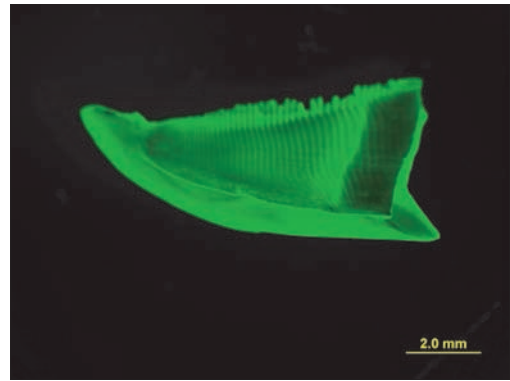
Elvis giving an oral presentation SETAC Conference in Australia

Integrative ecological risk assessment for marine protected areas

Elvis Xu systematically assessed the ecological risk of eight common endocrine disrupting chemicals (EDCs) in four Marine Protected Areas (MPAs) of Hong Kong using an integrative ecological risk assessment approach. He found elevated levels of these EDCs in sediments, seawater, and the tissues of marine organisms inhabiting the MPAs. The chemicals were also accumulated in transplanted mussels and semi-permeable membrane devices. Estrogenic activities in the water and sediment samples were high, as revealed by two bioassays. His results indicated high risks of EDCs to marine life at the Cape d' Aguilar Marine Reserve, and moderate risks at the other MPAs.

Reproductive strategies and growth of sea urchins

In the final stage of his PhD, Juan Diego is analyzing empirical data on a commercially exploited sea urchin in Hong Kong, collected during two years of field and laboratory work. Whilst studying two open fishing areas and two protected areas, Diego identified that sea urchins' secondary production was significantly higher at the Marine Reserve Cape d'Aguilar compared with the three other sites. For the first time in the field, Diego estimated seasonal growth in same urchin using two different fluorochromes. In the following months, he will continue to evaluate the urchin reproductive cycle using histological techniques to achieve the objective of using the data in a matrix model for conservation purposes.



*Jaw of *Heliocidaris crassispina* under ultraviolet illumination with calcein tag*

Behaviour of Chinese White Dolphins in Hong Kong and impacts of coastal tourism

Simon Wong's study focuses on dolphin behaviour and patterns of response to anthropogenic disturbance. He conducts scan sampling and tracks dolphin activities and movement from shore-based vantage points on southwest Lantau Island. Simon also incorporates marine traffic information from Automatic Identification System (AIS) to study vessel-animal interactions. His work has documented a semi-diurnal pattern of dolphin behaviour and habitat selectivity. He is currently working on a behavioural response model, which incorporates a matrix of data that quantifies dolphin responses to dolphin-watch operations. Simon hopes that this information will contribute to more effective coastal conservation and management in Hong Kong.



Simon during his study trip to South Africa

Shallow marine ostracode distribution in Hong Kong

Marine ecosystems of Hong Kong have been seriously influenced by a variety of anthropogenic factors. Crustacean ostracodes are known to be sensitive to such environmental degradation. Here Circle Hong investigated spatial distribution of modern ostracode assemblages in grab samples. Preliminary results obtained from 55 sites covering most areas of Hong Kong waters showed that the most common species are *Sinocytheridea impressa* and *Neomonoceratina delicata* among 146 identified species. On the basis of MDS (multidimensional scaling) analysis, there are distinct differences in ostracod faunal composition among Western, Central and Eastern waters, while no cluster is clearly identified in Southern waters.



Sediment cores sampling by hand-push piston corer at Victoria Harbour



Marielle and a shop owner after sampling bêche-de-mer from Hong Kong dried seafood market

Size and price of sea cucumbers: key incentives in Hong Kong dried seafood market

As a delicacy, processed body-wall of sea cucumbers, bêche-de-mer (BdM), is among the most highly valued seafood commodities harvested worldwide to supply, almost exclusively, demand from the Chinese market. Marielle Dumestre investigates the dried seafood market in Hong Kong to determine which attributes (species, size, condition & organoleptic properties) influence retail prices of BdM. Twelve common species were identified from 48 shops with prices varying according to species and size. Relationships between BdM weight and price were species-specific and differ according to origin. Such information is invaluable for developing better post-harvest techniques and management practices that could help improve profits gained from exploiting and processing BdM in source countries.



Amina performing underwater photo-identification of spinner dolphins

Egyptian Red Sea spinner dolphins and science-based tourism management

Amina Cesario's study site, the Samadai Reef off the Egyptian Red Sea, is an important resting area for spinner dolphins and a hotspot of local dolphin-based tourism. Amina's data shows that ~400 spinner dolphins, organized in resident social clusters of mostly mixed sexes, frequent Samadai throughout the year following a predictable daily pattern. They arrive shortly after sunrise and use the innermost portion of the lagoon; departing before sunset to forage offshore. The presence of tourists/swimmers in the water affects the dolphins' spatiotemporal use of the site. Amina's results highlight the importance of the understanding of daily patterns, population parameters, and socio-behavioural dynamics in influencing the effectiveness of management.



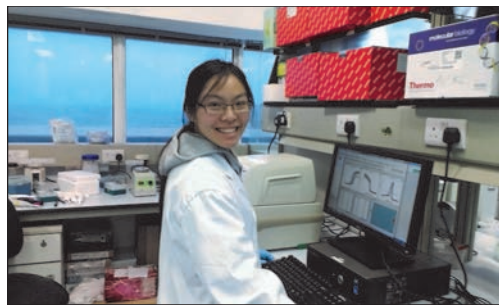
Calton preparing fish otoliths for age and growth study in a workshop at James Cook University, Australia

Biology and fisheries of seabreams in Hong Kong

Understanding key life history traits is critical for modelling fish population dynamics and the development of fishery management. Seabreams (Sparidae) are important in the fishery of Hong Kong and adjacent waters yet biological information is limited. Calton Law is conducting trophic and reproductive studies using histology, gut content analysis and stable isotopes on three sparids (*Acanthopagrus schlegelii*, *Erynnis cardinalis* and *Pagrus major*). Age and growth are being studied on *A. schlegelii* using ear bone), aided by training at James Cook University, Australia. Preliminary results determined that these species prey on benthic invertebrates. Protandric *A. schlegelii* matures at age 1 year and can change to female at 2-3 years old and live at least 8 years.

Influences of surface modifications of zinc oxide nanoparticles on their toxicities to aquatic microalgae

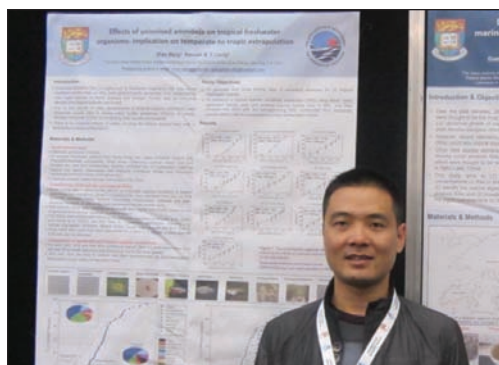
Zinc oxide nanoparticles (ZnO-NPs) are effective blockers of ultraviolet radiation. There is a growing environmental concern regarding the use of silane-coated ZnO-NPs in commercial sunscreens. Mana Yung investigates two silane-coated ZnO-NPs for their physicochemical properties and examines their toxicity to freshwater and marine microalgae. She found that ZnO-NPs coated with long carbon chain were less toxic than the uncoated ZnO-NPs and ZnO-NPs coated with amino group to all tested microalgae based on growth and photosynthesis inhibition. In general, marine microalgae *Thalassiosira pseudonana* and *T. weissflogii* were more sensitive to the test chemicals than freshwater microalgae *Chlamydomonas pyrenoidosa* and *Pseudokirchneriella subcapitata*.



Mana studies the effect of coated and bare ZnO nanoparticles on the gene expression of a marine diatom

How can temperature affect chemical toxicity to aquatic organisms?

Zhen Wang's PhD study aims to develop a unifying model for predicting temperature-dependent chemical toxicity (TDCT) to aquatic organisms. He conducted a comprehensive meta-analysis by comparing the toxicity of 13 chemicals to various freshwater species reported at different temperatures. He found a majority of studied organisms display the lowest toxic response at an optimum temperature (OT) and the toxicity increases with increasing or decreasing temperature from OT. A similar result was also observed at the community level, as verified by the species' sensitivity distribution analysis. Using this TDCT model, water quality criteria of chemicals can be derived for various temperatures.



Pacific 2014 Meeting, held at Adelaide, Australia during September 14-17, 2014

Spatio-behavioural ecology of large African cats

The understanding and monitoring of spatio-behavioural ecology of reintroduced animals are critical for successful wildlife reintroduction. Sze-Wing Yiu has continued her PhD study on the spatial behaviour of lions and cheetahs introduced to a South African wildlife reserve and found that cumulative home ranges of both species increased upon their release, indicating an exploration period, but their core areas remained restricted. Mating, territorial conflict, change in group membership and introduction of new individuals have all influenced movement patterns and home range use. Her study shows that intra- and inter-specific interactions between top-order predators represent the key factors that determine their spatiotemporal patterns of space use and habitat selection.



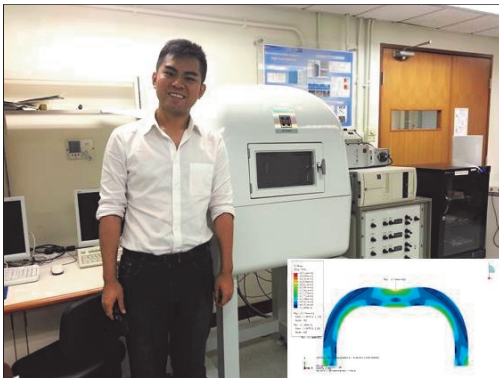
Sze-Wing during deployment of satellite collars on lions in South Africa



Carmen received the Best presentation by a Chinese student at the joint Workshop on Animal Social Evolution in China

Social and spatial ecology of Chinese White Dolphins in the Pearl River Estuary

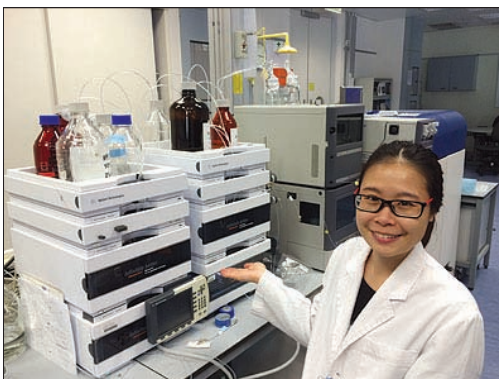
Carmen Or continued her data collection in Hong Kong and across the Pearl River Estuary in collaboration with postgraduate students from Sun Yat-Sen University in Zhuhai. Her revised analyses on spatial distribution of dolphins suggest that waters around the existing Marine Park and, especially, off the southwest Lantau Island, represent the core foraging grounds for Chinese White Dolphins in Hong Kong. Socializing behaviour, although not often seen, is also more frequent in those core areas. Carmen's study has generated a map of proposed marine protected areas in Hong Kong, which has been incorporated into the Hong Kong Red-List assessment of Chinese White Dolphins.



Roy busy in exploring 2D model of tubeworm shell to investigate its mechanical properties

Mechanical modeling of a shell under ocean acidification

Acidification, warming, and freshening of seawater due to rising anthropogenic CO₂ may collectively impair the calcification process and thus animals may form shells/tubes with poor mechanical properties. Through an interdisciplinary collaboration with biological, medical and engineering faculties, Roy Li has successfully applied variety of mechanical engineering tools such as micro-CT scanning and nanoindentation to measure various mechanical properties of the calcified tube formed by the worm *Hydroides elegans*. Consequently, He has modeled their tube strength using the engineering computational ABACUS model. His results showed that *H. elegans* tubes are weakened under acidification; however, warming offsets the negative effect of acidification.



Ginger using the LC-MS/MS to study proteome changes of Pacific oyster under multiple climate change stressors

Multiple climate change stressors impede recruitment of the Pacific oyster

Ginger Ko's previous studies showed that aquaculture production of edible oysters could be declining in the near future due to ocean acidification (OA). However, warming and freshening due to climate change are expected to exacerbate OA effects on oysters. Last year Ginger successfully tested this hypothesis using Pacific oyster larvae. Her multiple stressors, multiple life stages and relatively long-term exposure study convincingly showed how OA may combine with co-occurring warming and freshening in Chinese coastal areas to synergistically affect oyster production. Now she is interested to understand the molecular mechanisms behind such multiple stressors effects using quantitative shotgun proteomics.

Effects of trawl-ban on demersal fisheries resources in Hong Kong

Trawling has been banned across Hong Kong waters since 31 December 2012. Yanny Mak is investigating whether the trawl-ban facilitates recovery of the demersal fisheries resources. Her results indicate that there are significant changes in benthic fish composition in eastern and southern waters since the trawl-ban. Fish abundance, biomass and species richness uncovered in southern waters during dry season of 2013 are significantly higher than in 2012. During the post trawl-ban period, she encountered some very large fishes such as a conger pike *Muraenesox cinereus* (164 cm long; weighed 8.2 kg), and a Japanese butterfly-ray *Gymnura japonica* (81 cm; 11.4 kg).



Large Japanese butterfly-ray *Gymnura japonica*
with its pups

Environmental impacts on ostracod community and species diversity

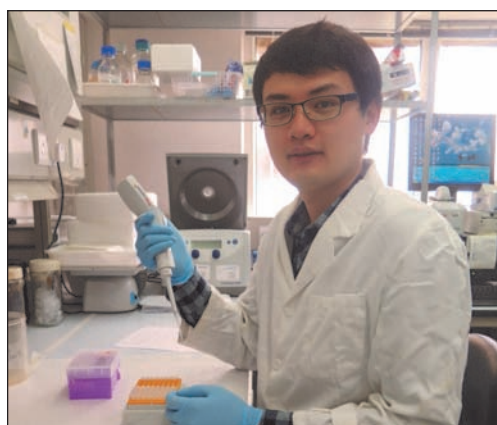
Ruby Chiu's project on Holocene ostracods in an Okinawan submarine cave has almost come to an end. The ostracod faunal analyses allowed reconstructing the paleoenvironment of the studied cave: the environment has changed from the open ocean to a closed cave system over the last 7000 years. She is now working on North American shallow-marine biogeographic and biodiversity distribution. She has spent one month in the United States to work with her co-supervisors in Washington DC and Virginia and then brought the samples back to Hong Kong for further observation. It is hoped that she will determine the environmental factors that are affecting the ostracod distribution patterns in North American continental margins.



Ruby is working on her ostracod samples under the stereomicroscope

Environmental 'omics' of two molluscan species

In the Asia-Pacific region, green-lipped mussels (*Perna viridis*) and intertidal whelks (*Reishia clavigera*) play important roles in marine pollution monitoring and ecotoxicological studies. As there is limited molecular information available for these two species, Jack Ip has established comprehensive transcriptome databases for them using Illumina sequencing. He has further conducted experiments and RNA sequencing to reveal the toxic mechanisms of organotin compounds in these species. At present, Jack is investigating the differentially expressed genes in these animals and conducting bioinformatics analysis to elucidate their genes and pathways involved in responses to organotin toxicity.



Jack preparing his samples of the intertidal whelk for RNA-seq analysis



Archer's selfie at the rooftop of The Church of Saint Mary the Virgin in Cambridge

Marine benthic molluscs diversity in Hong Kong

As part of the trawl-ban study, Archer Wong is investigating the diversity, abundance and biomass of benthic molluscan species in eastern, southern and western waters of Hong Kong. With the data obtained between 2013 and 2014, he discovered some interesting spatial and temporal distribution patterns based on their diversity and abundance. The abundance was the highest during summer while species diversity varied great among the regions. He presented his results at the 7th Congress of the European Malacological Societies 2014 held in Cambridge University where he had chances to meet some leading researchers in Malacology and exchanged ideas with them.



Tommy collecting sediment samples to investigate the food value for the crabs

Modelling the foraging patterns of a deposit-feeding crab

Using the sandy shore crab, *Scopimera intermedia*, as an example, Tommy Hui is constructing a foraging model to investigate the movement patterns of deposit-feeding crabs. Tommy has shown that the foraging time of the crab is not equally distributed along its foraging trails, suggesting that the crab feeds on localized food patches. In fact, the feeding decisions of the crab are context-dependent, depending on whether a rich food patch is present and the spatial arrangement of food patches. Understanding the sensitivity of the crab to the value of its sediment food has given Tommy important insights into how to construct and test his model.



Yuan working on oyster in SWIMS

Do oysters produce weaker shells under ocean acidification?

Yuan Meng is a mechanical engineer with expertise in finite element analysis (FEA) of shoe heels and now she is perusing a PhD at SWIMS. Due to ocean acidification (OA), edible oysters are expected to produce mechanically weaker shells. Yuan is interested in using various mechanical engineering tools to test the above hypothesis using oysters as model. Ultimately, she will apply the knowledge obtained from oyster shell analysis to the biomedical field for gaining insights into the design of new biomaterials. She examined the effect of OA on juvenile oyster shells using *Crassostrea angulata* as a model. Not surprisingly, this species produced mechanically weaker and structurally altered shells under OA. Soon she will apply FEA to predict the potential vulnerabilities of oyster shells under various OA scenarios.

Population parameters and health condition of Hong Kong dolphins

Stephen Chan's PhD study focuses on population ecology of Indo-Pacific humpback dolphins (*Sousa chinensis*) in the Pearl River Estuary (PRE). With the application of photo-ID mark-recapture and population modelling techniques, Stephen quantifies demographic parameters and investigates population structure of the dolphins inhabiting Hong Kong waters, and their population connectivity with the animals in the middle and far-Western reaches of PRE. His recent findings furnished a first measure of ecological health assessment of the local dolphin population in Hong Kong, indicating that nearly one-third of the animals suffer from various skin disorders and about 4% bear wounds from human-induced trauma.



Stephen demonstrating photo-ID survey during the marine mammal field course in the Philippines

Effects of the trawl-ban on demersal crustacean resources in Hong Kong

As part of the trawl-ban project, Lily Tao has been investigating whether benthic marine crustacean diversity and their average trophic level will gradually increase after the trawl-ban. She found that community structures of crustaceans differed between before (December 2012) and after the intervention (2013 & 2014). For example, during wet season, total crustacean abundance in 2014 was higher than that in 2012 across Hong Kong waters. Through population dynamics and cohort analyses, she found some species became bigger in size after the trawl-ban. Using stable isotope techniques, she is quantifying and comparing trophic levels of crustacean species before and after the trawl-ban.



Trawling Group working in the lab after trawl surveys

Oyster shell matrix proteins under ocean acidification

Production of organic matrix proteins (OMP) to assemble CaCO_3 crystals into an incredibly strong oyster shell may be affected by climate-related stressors, particularly ocean acidification. Abhishek has successfully extracted and quantified organic matrix proteins (OMP) from oyster shells and examined their profile using conventional electrophoresis. Soon, he will be using bioinformatics tools, quantitative and comparative shotgun proteomics to study OMP under projected near future climate change scenarios.



Abhishek profiling oyster shell proteins using SDS-PAGE (1-D) Gel Electrophoresis



Richard is using microscope to observe ostracodes from one of his core samples in the East China Sea

Taxonomy and distribution of Plio-Pleistocene and recent Ostracoda in Taiwan and adjacent regions

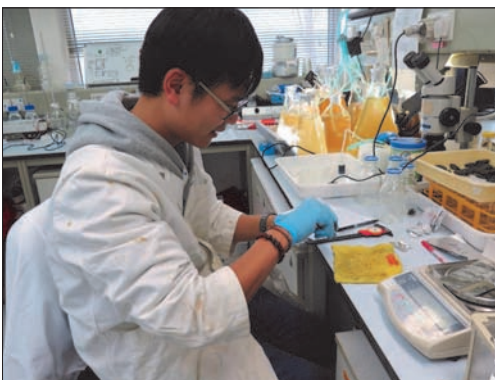
Being an island surrounded by the South China Sea, the East China Sea and the Philippine Sea, Taiwan is an interesting place for studying biogeography since it is within the Indo-Australian Archipelago (IAA) which is a well-known biodiversity hotspot of shallow marine ecosystem. Ostracods are small aquatic organisms that are abundantly preserved in marine sediments as fossils because of their calcified valves. Richard Cheung has identified over 10000 specimens of fossil ostracods to examine the Plio-Pleistocene and recent marine biodiversity and biogeography of Taiwan and adjacent regions.



Camilla visiting Lau Fau Chau oyster farm

Prey-Predator interaction in a changing coastal climate

In future coastal oceans, climate change related stressors such as acidification and warming will affect intertidal organisms through multiple processes. At the beginning of Camilla Campanati's PhD, she investigated the interactive effect of acidification and hypoxia on barnacle larvae and found that a phenotypic buffering at the larval stage or a stimulation of the transition phase by an external cue (e.g. settlement factor) could counteract any negative effects. Now, Camilla will focus on the prey-predator interactions in the intertidal habitat using oysters as prey and snails as predators. This work will specifically explore climate change induced impairments of the prey's protective armour (shells) and its ecological consequences.



Martin measuring the shell length of mussels for selecting suitable size class for experiments

Dynamic energy budget model for the green-lipped mussel, *Perna viridis*

Understanding how animals allocate the energy obtained from food for growth and reproduction under a variable environment is a vital step to forecast the effects of climate change on ecologically or economically important species. Martin Cheng is building up a mechanistic model, based on Dynamic Energy Budget (DEB) theory, to predict different life history traits such as size, lifespan and reproductive success of *Perna viridis*, an abundant, widespread, commercially and ecologically important species. By integrating the DEB model with real-time and forecasted environmental data, it will be possible for Martin to derive an accurate prediction of the future distribution and success of *P. viridis*.

Symbiodinium diversity and host-symbiont ecological physiology in Hong Kong

Symbiotic marine dinoflagellates belong to the diverse genus, *Symbiodinium*. Using PCR, Phil Thompson has been genotyping *Symbiodinium* from various hard coral host genera in culture at SWIMS and various field sites in Hong Kong. His initial examination was to assess the *Symbiodinium* biodiversity and observe which clades and subclades occur in Hong Kong. His new question is what is the ecological significance of host-clade type relationships under nutrient enrichment? He plans to incubate various coral hosts with heavy nitrogen and carbon isotopes to assess nutrient assimilation in the presence of heat stress.



Symbiodinium diversity and host-symbiont ecological physiology in Hong Kong

The coral-algal symbiosis in a changing climate

Symbiont shuffling, a change in composition of the algal symbiont communities, has been observed in some reef-building corals in response to environmental change. These shifts have been suggested as an adaptive mechanism to physical stress, especially for those corals hosting multiple *Symbiodinium* clades. Jane Wong is investigating the dynamics and competitiveness among *Symbiodinium* species through field sampling and culturing *in vitro*. She will examine the changes in composition, abundance and physiology of symbionts in a range of environmental settings such as nutrient enrichment, increased temperature and irradiance.



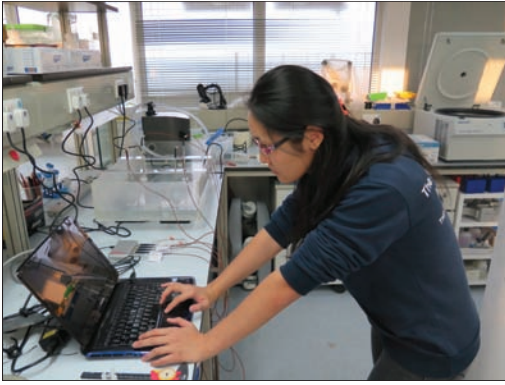
A very fine day for field work at Cape d'Aguilar Marine Reserve!

Effects of climate change on marine benthic biota using deep-sea ostracod communities from the subpolar North Atlantic as a model

Anna Joest investigates fossilized ostracods from Icelandic waters. The aim of her study is to elucidate predominant controlling factors of marine biodiversity and faunal patterns in space and time in this climatically sensitive area. Being in her second year of PhD, so far, she has identified 140 ostracod species from sediment fractions of present-day fauna. In the following year, she will investigate fossil ostracode assemblages of marine oxygen isotope stages (MIS) 11 - 15 (0.8 – 0.35 Ma, Middle Pleistocene). Her results on faunal shifts during this period may help better predict future ecosystem alterations caused by the changing climate.



Anna picking ostracods from deep-sea sediments with a binocular-microscope



Alicia monitoring the respiration rate of *Mytilopsis sallei*

Predicting the future distribution of *Mytilopsis sallei* under climate change

The black striped mussel, *Mytilopsis sallei*, is an aggressive invasive species which has a negative impact on economic and ecological resources and its geographic spread is, therefore, of great concern to relevant stakeholders. In this study, Alicia Tan is applying a Dynamic Energy Budget (DEB) model to investigate the energy allocation strategies of this mussel by combining experimental, literature and mathematical procedures. Based on the constructed DEB model, Alicia will be able to predict the stress responses and potential future distribution of *M. sallei* under different scenarios of climate change to determine whether this invasive species is likely to extend its range.



Martin diving with a sea horse in HK waters – Can you spot it?

The physiological responses of different clades of *Symbiodinium* to light and heat stress in elevated ammonium and nitrate conditions

Symbioses between corals and the microalgae (*Symbiodinium*) they host inside their tissues are disrupted by excessive nutrients. Specifically, dissolved inorganic nitrogen (DIN) has been recently shown to worsen coral bleaching. However, the responses of free-living *Symbiodinium* to elevated DIN concentrations are poorly understood. Martin Wong aims to study the potential differences in physiological responses among different clades of *Symbiodinium* to elevated nitrogen concentrations under light and heat stress. He will investigate how the physiology of *Symbiodinium* responds to elevated ammonium or nitrate concentrations and how these responses vary across the diversity of *Symbiodinium*.



Roniam Sham dissecting her target species (*Cynoglossus bilineatus*) for TPT analysis

Biomagnification of triphenyltin along marine food chain

As triphenyltin compounds (TPTs) are extensively used in antifouling paints, they become widespread contaminants in coastal waters of South China. They are highly toxic to marine organisms. However, it remains unclear whether TPTs can be biomagnified in top predators, such as large predatory fishes and marine mammals. Roniam Sham embarks on investigating the tissue concentration and biomagnification potential of TPTs in these higher trophic organisms that inhabit western waters of Hong Kong. She will verify their trophic levels using gut content and stable isotope analyses. Her results will shed light on the impact of TPTs in our marine ecosystem.

Nutrient acquisition of Hong Kong octocorals

Inga Conti-Jerpe is a new PhD student using stable isotope analysis to examine nutrient acquisition in different species of soft corals from Hong Kong. By measuring the C and N stable isotope ratios of different species, Inga will estimate and compare their trophic niche areas. Differences in how soft coral species obtain food and nutrients is a key factor in understanding their resilience to anthropogenic stressors such as nutrient pollution and global climate change. This past year, Inga presented talks on work from her master's degree at two conferences: the Annual Benthic Ecology Meeting and the Coastal Carolina Scientific Diving Association Symposium.



Inga using SCUBA to collect octocorals

The nitrogen isotope fingerprint of rainwater, seawater and wastewater effluents in Hong Kong

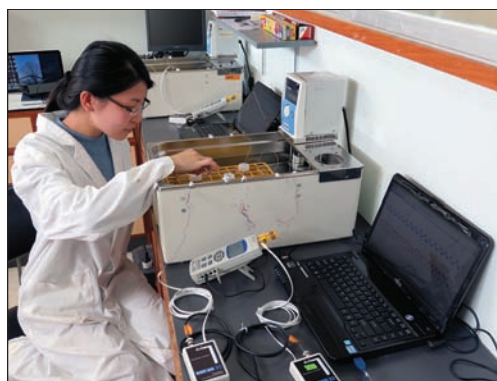
While the Hong Kong Environmental Protection Department has established long-term monitoring of nitrogen concentrations in marine waters and wastewater effluents, the data obtained on the size of the total nitrogen pool does not indicate the proportion which is derived from human activities. Stable isotope analysis of nitrogen ($\delta^{15}\text{N}$) can provide more accurate information on the sources of nitrogen, not only in the receiving environment but also in the marine and benthic organisms present. Archana's PhD aims to determine the stable isotope fingerprint of Hong Kong's nitrogen sources from seawater, rainwater and wastewater effluents.



Archana sampling treated effluent from Mui Wo Sewage Treatment works, Lantau

Climate change and marine bioinvasion

As global climate change accelerates, there is increasing concern about how ecosystems may change as a result of biodiversity loss and species replacement. It is expected that climate change will promote bioinvasions as invasive species are generally tolerant of environmental extremes. Nina Yu investigated the thermal tolerances of the invasive mussel *Perna viridis*, and the non-invasive mussel *Septifer virgatus* for her MSc. She found that *P. viridis* had a higher intrinsic heat tolerance and phenotypic plasticity that allows for rapid adaptation, and is therefore, more likely to be favoured under future climate conditions as compared to *S. virgatus*. Nina hopes to pursue this research for a PhD at SWIMS in 2015.



Nina measuring the heart rates of mussels under different temperature



ENCs students (Baptist University) exploring rockpool communities led by Dr. Stephen Cartwright

Community Outreach

As in previous years we hosted a great variety and number (> 750) of groups and visitors to SWIMS. As always school groups (Australian International, Island School, South Island School, Discovery College, West Island School; Kellet School and KGV School) were the dominant visitors, coming to learn about marine biology and conservation for their curricula or for knowledge exchange. SWIMS also entertained visits from numerous individuals, including our new President and Vice Chancellor, Prof Peter Mathieson; as well as numerous green groups, alumni and visits from Swire Management Trainees.



Kenny presented an invited talk at the TWGHs Healthy School Symposium

SWIMS was also involved in a number of public engagement events. Kenny was invited to give a talk entitled "When boys become girls: Impacts of endocrine disrupting chemicals to humans and the environment" at the Tung Wah Group of Hospitals (TWGHs) Healthy School Symposium held on 9 October 2014 which was officiated by the Deputy Secretary for Education, Education Bureau, Dr Catherine Chan Ka-ki, and well attended by 500 school teachers and headmasters from TWGH Schools. In February, Leszek gave an invited talk at public forum organized by an independent public participation group 'Talk Ocean' attended by 150 participants addressing the complexities of conservation management of Chinese White Dolphins in Hong Kong and Pearl River Delta.

This year also saw the first exchange with Tokyo University of Marine Science and Technology (Japan) who sent 4 students to work and stay at SWIMS as Research Assistants. We were also lucky enough to have a number of students help SWIMS as Research Assistants from Baptist University (Hong Kong) as part of their Biology Internship programme, and also volunteers from HKU and overseas universities such as Dalhousie University (Canada). We would like to thank these students for their cheerful help!



TUMST students (front row) presented their experiences during their visit to SBS and SWIMS staff and students

Conservation

SWIMS and IUCN

Hong Kong has a large appetite for seafood and is a world trade centre for luxury seafood, including abalone, shark fin, live fishes and invertebrates and sea cucumber. Many of these species are overexploited and from developing countries, while some are threatened. Therefore it is important to seek ways to trade more sustainably. Yvonne and her colleagues analysed patterns in these trades. Hong Kong imports seafood, for both local consumption and onward export to China, from two-thirds of all countries and could contribute towards more sustainable trade through seafood choice by consumers and by better and more responsible trade practices, and improved monitoring and enforcement.

Under the Convention on Biological Diversity (CBD), Hong Kong is obliged to develop a Biodiversity Strategic Action Plan (BSAP). Throughout the year, many SWIMS staff and postgraduates were involved with the development and implementation of the BSAP, including chairing committees and working groups. Yvonne, together with many current and past SWIMS and HKU postgraduates, helped to develop a regional system for assessing conservation status, based on the IUCN Red List approach. The group was involved in redlisting 27 fish species, revealing several threatened species, and in discussions on standards for data-reporting. This work was a great opportunity to catch up with SWIMS alumni who now form a professional network across Hong Kong. We were also especially pleased to host a visit from Ms Christine Loh (Deputy Secretary for the Environment, Hong Kong SAR) to discuss conservation issues and the BSAP process.

SWIMS and Reef Check

Reef Check was successfully conducted on 9th August 2014 with support from many SWIMS postgraduates, post-docs, alumni, summer internship helpers and affiliates. The programme is part of a global coral monitoring scheme under coordination of AFCD and the Reef Check Foundation aiming to promote sustainable use of coral reef and raise public awareness on marine conservation. As with the past nine years, the team conducted a dive survey in Siu Long Ke. The team was divided into sub-groups to survey the abundance and species diversity of indicator taxa to assess the health of the coral communities. This year the team recorded 38% coral coverage, similar to last year's figure. There was little sign of coral damage or bleaching. Indicator fish species were not observed in this year's survey but other coral associated invertebrates, such as sea cucumber (*Holothuria leucospilota*), sea urchins (*Diadema* sp. and *Anthocidaris* sp.) and clusters of squid eggs were recorded. The survey team is getting bigger and bigger, and is looking forward to participating again next year.



Live seafood on sale



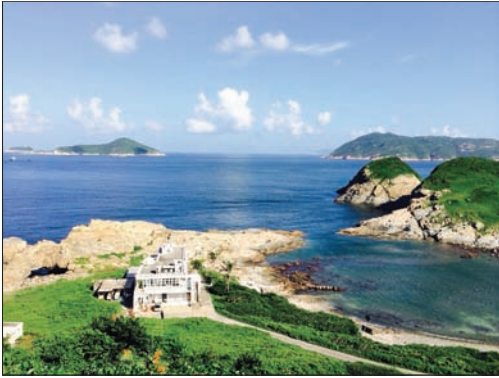
HKSAR Governments BSAP logo



Terence illustrating the biodiversity data base to Ms. Christine Loh



SWIMers in the 2013 Reef Check team



SWIMS as seen from the Old Residence balcony

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 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/Internships

Undergraduate students holding a permanent Hong Kong identity card are encouraged to apply to work as volunteer student research assistants during the semester breaks/summer holidays. Undergraduate students from both local and overseas institutions who are enrolled in a degree programme, which requires the completion of an internship, may also contact us to discuss how we can facilitate that requirement. Interested students should contact Ms Sylvia Yiu.



Dinner time at the Residence

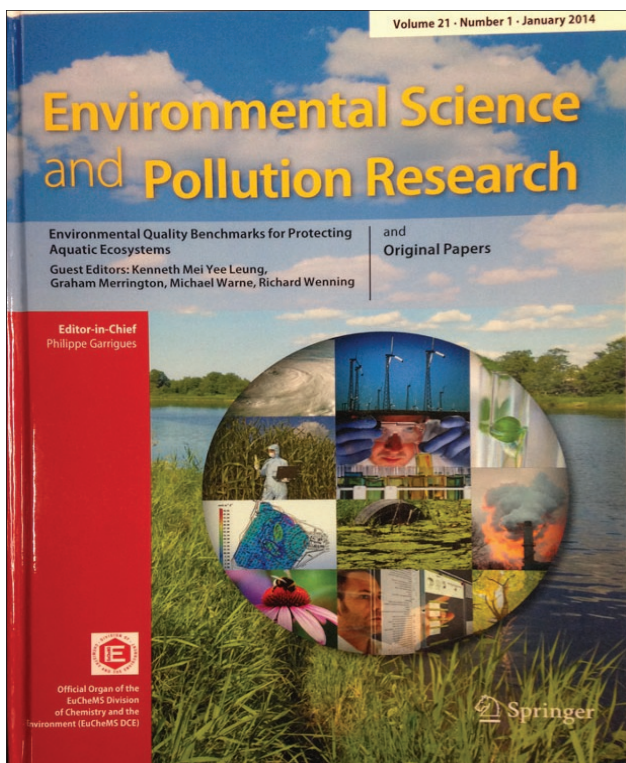
Accommodation

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

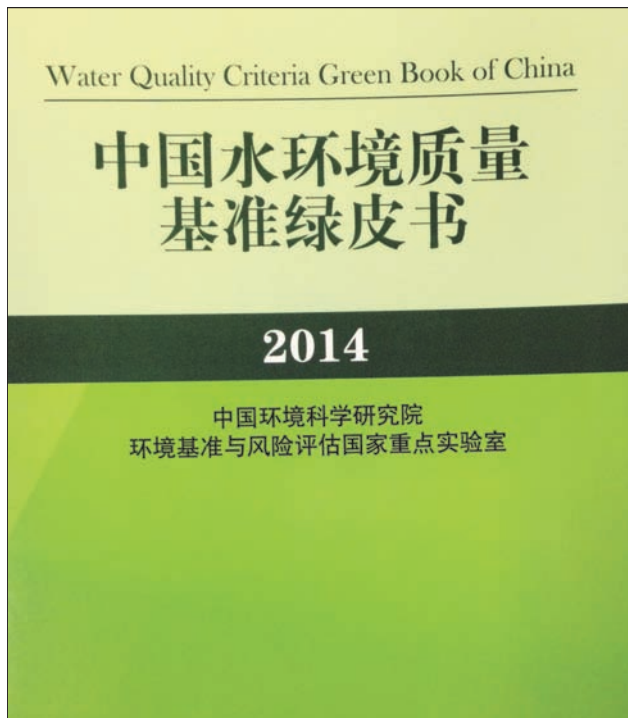
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- Jia K, Lin W, Gui D, Karczmarski L, Wu Y (2014) Molecular evidence reveals the distinctiveness of Indo-Pacific finless porpoises (*Neophocaena phocaenoides*) in the Pearl River Estuary and insights into genus *Neophocaena*'s origin. *Marine Biology* **161**: 1919-1930 (DOI 10.1007/s00227-014-2474-y)
- Ko WKG, Dineshran R, Campanati C, Chan VBS, Havenhand J, Thiyagarajan V (2014) Interactive effects of ocean acidification, elevated temperature and reduced salinity on early-life stages of the Pacific oyster. *Environment Science and Technology* **48**: 10079-10088
- Lau ETC, Yung MMN, Karraker NE, Leung KMY (2014) Is an assessment factor of 10 appropriate to account for the variation in chemical toxicity to freshwater ectotherms under different thermal conditions? *Environmental Science and Pollution Research* **21**: 95-104
- Leung KMY, Merrington G, Warne MSTJ, Wenning RJ (2014) Scientific derivation of environmental quality benchmarks for the protection of aquatic ecosystems: Challenges and opportunities. *Environmental Science and Pollution Research* **21**: 1-5
- Leung KMY, Merrington G, Warne MSTJ, Wenning RJ (Eds.) (2014) Environmental quality benchmarks for protecting aquatic ecosystems. *Environmental Science and Pollution Research* **21**: 1-243
- Leung PTY, Ip JCH, Mak SST, Qiu JW, Lam PKS, Wong CKC, Chan LL, Leung KMY (2014) De novo transcriptome analysis of a tropical marine mussel, *Perna viridis* highlights tissue-specific patterns for environmental studies. *BMC Genomics* **15**: 804

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- Leung PTY, Park TJ, Wang Y, Che CM, Leung KMY (2014) Isoform-specific responses of metallothioneins in a marine pollution biomonitor, the green-lipped mussel, *Perna viridis*, towards different stress stimulations. *Proteomics* **14**: 1796-1807
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- Li C, Chan V, He C, Meng Y, Yao H, Shih K, Thiyagarajan V (2014) Weakening mechanisms of the serpulid tube in a high CO₂ world. *Environmental Science & Technology* **48**: 14158-14167
- Lin W, Frère CH, Karczmarski L, Xia J, Gui D, Wu Y (2014) Phylogeography of the finless porpoise (genus *Neophocaena*): testing the stepwise divergence hypothesis in the northwestern Pacific. *Scientific Reports* **4**(6572): 1-8 (DOI: 10.1038/srep06572)
- Lui GCS, Li WK, Bjørgesæter A, Leung KMY (2014) Deriving field-based sediment quality guidelines from the relationship between species density and contaminant level using a novel nonparametric empirical Bayesian approach. *Environmental Science and Pollution Research* **21**: 177-192
- Maneja RH, Dineshran R, Thiyagarajan V, Browman HI, Skiftesvik AB, Frommel AY, Clemmesen C, Piatkowski U, Geffen AJ, Folkvord A (2014) Proteome of Atlantic herring larvae is resistant to elevated CO₂. *Marine Pollution Bulletin* **86**:154-60
- Meador JP, Warne MStJ, Chapman PM, Chan KM, Yu S, Leung KMY (2014) Tissue-based environmental quality benchmarks and standards. *Environmental Science and Pollution Research* **21**: 28-32
- Merrington G, An YJ, Grist EPM, Jeong SW, Rattikansukha C, Roe S, Schneider U, Sthiannopkao S, Suter GWII, Van Dam R, Van Sprang P, Wang JY, Warne MStJ, Yillia PT, Zhang XW, Leung KMY (2014) Water quality guidelines for chemicals: Learning lessons to deliver meaningful environmental metrics. *Environmental Science and Pollution Research* **21**: 6-16
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- Ng TPT, Williams GA (2014) Size-dependent male mate preference and its association with size-assortative mating in a mangrove snail, *Littoraria arduiniana*. *Ethology* **120**: 995-1002
- Ory NC, Dudgeon D, Duprey N, Thiel M (2014) Effects of predation on diel activity and habitat use of the coral-reef shrimp *Cinetorhynchus hendersoni* (Rhynchocinetidae). *Coral Reefs* **33**(3): 639-50. DOI:10.1007/s00338-014-1163-0
- Prusina I, Sarà G, De Pirro M, Dong Y-W, Han G-D, Glamuzina B, Williams GA (2014) Variations in physiological responses to thermal stress in congeneric limpets in the Mediterranean Sea. *Journal of Experimental Marine Biology and Ecology* **456**: 34-40
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- Wang Z, Kwok KWH, Lui GCS, Zhou GJ, Lee JS, Lam MHW, Leung KMY (2014) The difference between temperate and tropical saltwater species' acute sensitivity to chemicals is relatively small. *Chemosphere* **105**: 31-43
- Wang M, Lib Z, Ganmanec M, Xieb JY, Urriago JD, Qiu JW (2014) Polymorphic microsatellite markers in the long-spined sea urchin *Diadema setosum*. *Conservation Genetics Resources* **6**(4): 983-985
- Williams GA, Leung KMY, Ng TPT, Cheng MCF (2014) A review of marine biodiversity and ecological surveys in Hong Kong. Final report submitted to the Environment and Conservation Fund, pp. 1-42
- Wong KKW, Tsang LM, Cartwright SR, Williams GA, Chan BKK, Chu KH (2014) Physiological responses of two acorn barnacles, *Tetraclita japonica* and *Megabalanus volamo*, to summer heat stress on a tropical shore. *Journal of Experimental Marine Biology and Ecology* **461**: 243-249
- Wong SWY, Leung KMY (2014) Temperature-dependent toxicities of nano zinc oxide to marine diatom, amphipod and fish in relation to its aggregation size and ion dissolution. *Nanotoxicology* **8** (S1): 24-35
- Wu RSS, Richardson BJ, Au DWT, Shin PKS, Leung KMY (Eds.) (2014) The 7th international conference on marine pollution and ecotoxicology. *Marine Pollution Bulletin* **85**: 315-830
- Xu EGB, Liu S, Ying GG, Zheng GJS, Lee JHW, Leung KMY (2014) The occurrence and ecological risks of endocrine disrupting chemicals in sewage effluents from three sewage treatment plants, and in natural seawater from a marine reserve of Hong Kong. *Marine Pollution Bulletin* **85**: 352-362
- Xu EGB, Leung KMY, Morton B, Lee JHW (2015) An integrated environmental risk assessment and management framework for enhancing the sustainability of marine protected areas: a case study in Hong Kong. *Science of the Total Environment* **505**: 269-281
- Xu E.G.B., B. Morton, J.H.W. Lee, K.M.Y. Leung (2015) Environmental fate and ecological risks of nonylphenols and bisphenol A in the Cape D'Aguilar Marine Reserve, Hong Kong. *Marine Pollution Bulletin* **91**: 128-138
- Yasuhara M, Okahashi H (2014) Quaternary deep-sea ostracode taxonomy of Ocean Drilling Program Site 980, eastern North Atlantic Ocean. *Journal of Paleontology* **88**(4): 770-785
- Yasuhara M, Grimm M, Brandão SN, Jöst A, Okahashi H, Iwatani H, Ostmann A, Martínez Arbizu P (2014) Deep-sea benthic ostracodes from multiple core and epibenthic sledge samples in Icelandic waters. *Polish Polar Research* **35**(2): 341-360
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- Yasuhara M, Stepanova A, Okahashi H, Cronin TM, Brouwers EM (2014) Taxonomic revision of deep-sea Ostracoda from the Arctic Ocean. *Micropaleontology* **60**(5): 399-444
- Yi AXL, Han JH, Lee JS, Leung KMY (2014) Ecotoxicity of triphenyltin on the marine copepod *Tigriopus japonicus* at various biological organisations: from molecular to population-level effects. *Ecotoxicology* **23**: 1314-1325
- Yi AXL, Leung PTY, Leung KMY (2014) Photosynthetic and molecular responses of the marine diatom *Thalassiosira pseudonana* to triphenyltin exposure. *Aquatic Toxicology* **154**: 48-57
- Zhou GJ, Wang Z, Lau ETC, Xu XR, Leung KMY (2014) Can we predict temperature-dependent chemical toxicity to marine organisms and set appropriate water quality guidelines for protecting marine ecosystems under different thermal scenarios? *Marine Pollution Bulletin* **87**: 11-21



Kenny served as the chief editor of this special issue of the Springer journal, Environmental Science and Pollution Research (Volume 21) entitled "Environmental Quality Benchmarks for Protecting Aquatic Ecosystems" featuring a collection of 23 scientific papers presented by experts at the International Conference on Environmental Quality Standards for the Protection of Aquatic Species (EQSPA-E-2011) held at the University of Hong Kong December 2011



In 2014, Kenny was invited by the Chinese Research Academy of Environmental Science (CRAES) to serve as one of the academic advisors to assist the production of this important book "Water Quality Criteria Green Book of China" which provides the scientific framework and methods for deriving water and sediment quality criteria and standards in China

Student Graduations

Ph.D

Dineshram, Ramadoss (2014) - Proteomic analysis of oyster larvae reveals molecular mechanism of ocean acidification and multiple stressor effects.

Ho, King Yan Kevin (2014) - Ecological and human health risks associated with organotin contamination in the marine environment of Hong Kong and Shenzhen, China

Lane, Ackley (2014) - Early life stages under ocean acidification: direct effects, parental influence, and adaptation.

Staff Training

Ms. Sylvia Yiu attended the Briefing on Smartcard Upgrade Project on 17 January 2014 (PM).

Ms. Cecily attended the DLP Training on 25 September 2014 (PM).

Ms. Chan Kit Ping attended the General Safety for Cleaners on 14 October 2014 (AM).

Other Contributions from SWIMS

Leszek Karczmarski

Member, IUCN Species 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.

Postgraduate Advisor, National Taiwan University, Taiwan

Postgraduate Advisor, Sun Yat-sen University, China

Postgraduate Advisor, University of Pretoria, South Africa

Associate Research Fellow, Mammal Research Institute, University of Pretoria, South Africa

Research Associate, Division of Forestry and Wildlife, State of Hawaii, USA

Invited Co-Editor, Primatology Monographs

Kenny Leung

Member (Reviewer), Pre-proposal Evaluation Committee (2013/2014 round), the French National Research Agency (ANR).

Immediate Past President and Director, the Asia-Pacific Geographic Unit of the Society of Environmental Toxicology and Chemistry (SETAC)

Subject Editor and Founding Editorial Board Member, Integrated Environmental Assessment and Management

Editorial Board, Scientific Reports, Marine Pollution Bulletin, Integrative Zoology, Canadian Journal of Zoology, Toxicology and Environmental Health Sciences, Ocean Science Journal

Member, Advisory Council on Food and Environmental Hygiene, HKSAR

Member, Endangered Species Advisory Committee, HKSAR

Member, Environment and Conservation Fund (ECF) Research Projects Vetting Subcommittee, HKSAR

Chairman, Marine Mammal Conservation Working Group, HKSAR

Member, Red Tide/Harmful Algal Bloom Expert Advisory Group, HKSAR

Member, Genetic Modified Organisms (Control of Release) Expert Group, HKSAR

Member, Biodiversity Strategy and Action Plan (BSAP) Marine Biodiversity Working Group, HKSAR

Co-opt Member, Marine Parks Committee, HKSAR

Member, The Outstanding Young Persons' Association

Coordinator, Joint University Consortium on Biodiversity, Ecology and Conservation of Marine Ecosystems (BECOME), Hong Kong

V Thiagarajan

Council Member, Hong Kong Proteomics Society
Editorial Board, PLoS One Journal
Editor (Review), Aquatic Biology, Aquaculture Environment Interactions

Yvonne Sadovy

Co-Chair (and founder), IUCN World Conservation Union Specialist Group of Groupers and Wrasses (www.humphheadwrasse.info)
Director (and co-founding member), Science & 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
Board Member, Gulf and Caribbean Fisheries Institute
Member, Board of Directors, Ocean Park Hong Kong
Chair, Education Advisory Committee, Ocean Park Hong Kong
Member, Executive Committee, World Wide Fund for Nature Hong Kong
Chair, Conservation Advisory Committee, World Wide Fund for Nature Hong Kong
Invited Panel Member, The Harbour Area Treatment Scheme Stage 2B Review
Invited EIA Technical Briefing Group, Marine Ecology & Fisheries for Three-Runway System at Hong Kong International Airport
Chairman, Marine Fish Focal Group, Biodiversity Strategy and Action Plan (BSAP) Marine Biodiversity Working Group, HKSAR
Co-chair, Red-list & Standards Focal Group, Biodiversity Strategy and Action Plan (BSAP) Marine Biodiversity Working Group, HKSAR Editorial Board, Fish and Fisheries
Board member, Luc Hoffmann Institute

Gray A Williams

Guest Professor, The University of Xiamen
Chairman, Advisory Committee of the Dongshan-Swire Marine Research Station
Visiting Research Professor, The Marine Science Center, Northeastern University, USA
Special Visiting Research Fellow, National Council for Scientific and Technological Development, Brazil
Erasmus Mundus TROPIMUNDO Visiting Scholar, Florence University, Italy
Editorial Board, Journal of Thermal Biology
Subject Editor, Zoological Studies
Member of the Biodiversity Strategy and Action Plan (BSAP) Marine Biodiversity Working Group, HKSAR and Co-Chair Marine Habitat Assessment Focus Group

Moriaki Yasuhara

Scientific Committee member, bioDISCOVERY
Board Member, the Deep-Sea Biology Society
Guest editor, special volume of 17th International Symposium on Ostracoda
Podocopida (Ostracoda) editor, World Register of Marine Species (WoRMS)
Associate Editor, Paleontological Research
Research Output Prize, The University of Hong Kong

Conferences and Workshops

David Baker

Oral Presentation; Ocean Science Meeting, 24-28 Feb 2014, Hawaii, USA.
Guest Seminar; University of the Ryukyus, 14 Mar 2014, Okinawa, Japan.
Guest Seminar; Princeton University, 9 Oct 2014, New Jersey, USA.
Guest Seminar; Ocean Park Hong Kong, 29 Oct 2014, Hong Kong.

Nicolas Duprey

Oral Presentation; Ocean Science Meeting, 25 Jan 2014, Hawaii, USA.
Guest Seminar, University of the Ryukyus, 11 Mar 2014, Okinawa, Japan.
Oral Presentation; 3rd Asia-Pacific Coral Reef Symposium, 24 June 2014, Kenting, Taiwan.

Kevin Ho

Oral Presentation; The First Xiamen Symposium on Marine Environmental Sciences, 9-11 Jan 2014, Xiamen University, Xiamen, China.
The Fourth Academic Committee Meeting of the State Key Laboratory in Marine Pollution, 13-14 Jan 2014, City University of Hong Kong, Hong Kong.
Oral Presentation; The SETAC Europe 23rd Annual Meeting, 11-15 May 2014, Basel, Switzerland.
Oral Presentation; The 11th International Symposium on Persistent Toxic Substances, 27-30 Oct 2014, City University of Hong Kong, Hong Kong.
Collaborative Research Fund Symposium, 11 Dec 2014, City University of Hong Kong, Hong Kong.

Leszek Karczmarski

Co-authored Oral Presentation; Planning for *Sousa chinensis* Corridors and Protected Areas in the Southeast Asian Sea Eco-region, 21-23 Jan 2014, Xiamen, China.
Chair and Organiser; Regional Training Workshop 'Socio-behavioural analyses', 28 Jan 2014, Hong Kong.
Chair and Organiser; the 7th South-East Asian Training Workshop in Marine Mammal Research Techniques: 'Population Trend Analysis', 9-11 May 2014, Hong Kong.
Chair and Organiser of regional training workshop 'Photo-ID data management software: Application of R statistics', 17-26 October 2014, Hong Kong.
Keynote Lecture; the 1st International Wildlife Photo-ID Network Symposium, 3-6 Nov 2014, Joensuu, Finland.

Kenny Leung

Invited Speaker and Expert Participant; ECETOC Workshop on Estimating Toxicity Thresholds for Aquatic Ecological Communities from Sensitivity Distributions, 11-13 Feb 2014, Amsterdam, The Netherlands.
Invited Speaker and Panel Expert; Nickel Tropical Risk Assessment Workshop, 29-30 Apr 2014, Singapore.
Invited Lecturer and Co-organiser; the First Sino-Finnish Summer School in Environmental Science, 4-15 Aug 2014, Jyväskylä, Finland.
Invited Expert Participant; International Workshop on New Diagnostics for Multiply-Stressed Marine and Freshwater Ecosystems: Integrating Models, Ecoinformatics and Big Data, 10-12 Sept 2014, Sydney, Australia.
Presenter; Oral and Poster Presentations; the 9th SETAC Asia/Pacific 2014 Conference, 14-17 Sept 2014, Adelaide, Australia.
Presenter and Oral Presentation; The 3rd World Conference on Marine Biodiversity, 12-16 Oct 2014, Qingdao, China.
Invited Speaker and Hong Kong Representative; The World Harbour Project – 2014 Workshop, 11-13 Nov 2014 and Official Launch Ceremony for The World Harbour Project, IUCN World Parks Congress, 17 Nov 2014, Sydney, Australia.

Terence Ng

Oral Presentation; 10th International Temperate Reef Symposium, 12-17 Jan 2014, Perth, Australia.
The Linnaeus Centre for Marine Evolutionary Biology (CeMEB) 11th Assembly, 9-11 Apr 2014, University of Gothenburg, Sweden.

V Thiyagarajan

Keynote Lecturer; Will the Pacific oysters invade and attack Hong Kong by 2100?, 8-9 Jan 2014, Chinese University of Hong Kong, Hong Kong.
Keynote Lecturer; Ocean Global Change Biology: Interactive Effects of Multiple Global Change Variables, 6-11 July 2014, New Hampshire, USA.
Keynote Lecturer; International Symposium on Human Impacts on Oceanic Environment, Ecosystem, and Fisheries, 11-12 Nov 2014, Nagasaki, Japan.
Keynote Lecturer; International Conference on Eco-aquaculture and Public Health, 29 Nov 2014, Hong Kong.
Keynote Lecturer; Inter-academy Lecture Workshop on Climate Change, 27-28 Mar 2014, India.
Keynote Lecturer; CeMEB Advanced Course Marine Evolution Under Climate Change, 1-6 Dec 2014, Sweden.

Yvonne Sadovy

Presentation and Session Organizer; Gulf and Caribbean Fisheries Institute 67th Annual Meeting, 9-13 Nov 2014, Barbados.
Presenter and Invited Expert; Stanford University Campus at Beijing University: Fisheries and Food Security in China, May 13-15 2014, Beijing, China.

Gray A Williams

Oral Presentation; 10th International Temperate Reef Symposium, 12-17 Jan 2014, Perth, Australia.
Keynote Speaker; Climate Change Adaptation: Aquatic Invasive Species-Coastal Restoration Symposium, 26-27 Feb 2014, Singapore.
Keynote Speaker; The role of individual responses to the functioning of coastal systems, 10-14 Mar 2014, South African Institute for Aquatic Biodiversity (SAIAB), South Africa.
Visiting Lecturer; Zoology Fieldcourse to Tsitsikamma Marine Reserve, 26 Mar-3 Apr 2014, University of Johannesburg, S. Africa.
Special Workshop Presentation; Ocean Genome Legacy (OGL) & INSHORE, 30 Sept-2 Oct 2014, Northeastern University, USA.
Visiting Lecturer; TROPIMUNDO Erasmus Mundus Masters Course, 19 Nov-3 Dec 2014, Florence University, Italy.

Moriaki Yasuhara

Invited Speaker; North American Paleontological Convention, 15-18 Feb 2014, Florida, USA.
Invited Lecture; 1st Meeting of Asian Ostracodologists, 23-27 June 2014, Seoul, Korea.
Session Organizer, Chairperson and Speaker; The 3rd World Conference on Marine Biodiversity, 12-16 Oct 2014, Qingdao, China.
Invited Lecture; An invited seminar in Tokyo University of Marine Science and Technology, 29 Oct 2014, Tokyo, Japan.
Short Lecture; bioDISCOVERY SC Meeting, 10-11 Dec 2014, Paris, France.
Invited Lecture; American Geophysical Union Fall Meeting, 15-19 Dec 2014, San Francisco, USA.

GJ Zhou

Oral and Poser Presentation; SETAC Asia/Pacific 2014 Conference, 14-17 Sept 2014, Adelaide, South Australia.
Oral Presentation; The 11th International Symposium on Persistent Toxic Substances, 27-31 Oct 2014, City University of Hong Kong, Hong Kong.

Postgraduates

Amina Cesario

Invited Speaker; The Third International Conference on Marine Mammal Protected Areas, 'Protecting Spinner Dolphin Resting Areas' workshop, 9-11 Nov 2014, Adelaide, Australia.

Camilla Campanati

Poster Presentation; GRC Ocean Global Change Biology Conference "Interactive Effects of Multiple Global Change Variables", 6-11 July 2014, Waterville Valley, NH, USA.
Poster Presentation; CeMEB Advanced Course Marine Evolution Under Climate Change, 1-6 Dec 2014, Sweden.

Stephen Chan

Oral Presentation; Planning for *Sousa chinensis* Corridors and Protected Areas in the Southeast Asian Sea Eco-region, 21-23 Jan 2014, Xiamen, China.
Regional Training Workshop: Socio-behavioural Analyses, 28 Jan 2014, Hong Kong.
7th South-East Asian Training Workshop in Marine Mammal Research Techniques: Population Trend Analysis, 9-11 May 2014, Hong Kong.
1st International Wildlife Photo-ID Network Symposium and Workshop, 3-6 Nov 2014, Joensuu, Finland.

Ruby Chiu

Oral Presentation; 10th North American Paleontological Convention, 15-18 Feb 2014, Florida, USA.
Oral Presentation; 1st meeting of Asian Ostracodologists in Korea, 23-27 June 2014, Seoul, Korea.

Marielle Dumestre

Oral Presentation; The 2nd Asian Marine Biology Symposium, 1-4 Oct 2014, Jeju, Korea.

Circle Hong

Oral Presentation; 1st Meeting of Asian Ostracodologists, 23-27 June 2014, Korea.

Tommy Hui

Oral Presentation; 10th International Temperate Reef Symposium, 12-17 Jan 2014, Perth, Australia.
Guest Seminar; 20-22 Feb 2014, Danang University of Education, Vietnam.
Oral Presentation; The role of individual responses to the functioning of coastal systems, 10-14 Mar 2014, South African Institute for Aquatic Biodiversity (SAIAB), South Africa.
Oral Presentation; TROPIMUNDO Erasmus Mundus Masters Course in Tropical Biodiversity and Ecosystems, 1-4 Dec 2014, University of Florence, Italy.

Jack Ip

Poster Presentation; First Xiamen Symposium on Marine Environmental Sciences, 9-11 Jan 2014, Xiamen University, Xiamen, China.
Oral Presentation; Society of Environmental Toxicology and Chemistry (SETAC) Europe 23rd Annual Meeting, 11-15 May 2014, Basel, Switzerland.
Outstanding Oral Presentation Award; The 11th International Symposium on Persistent Toxic Substance, 27-30 Oct 2014, City University of Hong Kong, Hong Kong.

Ginger Ko

Poster Presentation; Gordon Research Conferences on Ocean Global Change 2014, 6-11 July 2014, New Hampshire, USA.

Roy Li

Oral Presentation; Japan Geoscience Union Meeting 2014, 28 Apr-2 May 2014, Yokohama, Japan.

Yanny Mak

6th Joint Postgraduate Symposium on Aquatic Sciences – “Conservation of Aquatic Biodiversity: From Scientific Research to Management”, 11-14 Mar 2014, Hong Kong.
The 3rd World Conference on Marine Biodiversity, 12-16 Oct 2014, Qingdao, China.

Yuan Meng

Oral Presentation; Japan Geoscience Union Meeting 2014, 28 Apr-2 May 2014, Yokohama, Japan.
Oral Presentation; Human Impacts on Oceanic Environment, Ecosystem, and Fisheries, 11-13 Nov 2014, Nagasaki, Japan.

Carmen Or

Oral Presentation; Planning for *Sousa chinensis* Corridors and Protected Areas in the Southeast Asian Sea Eco-region, 21-23 Jan 2014, Xiamen, China.
Best Oral Presentation by Chinese Student (jointly with Ms Y. Mo, a PhD student at Sun Yat-sen University); Workshop on Animal Social Evolution, 29 June-3 July 2014, Heishiding, China.
1st International symposium and workshop: Wildlife Photo-ID Network, 3-6 Nov 2014, Joensuu, Finland.

Lily Tao

Oral Presentation; 3rd The World Conference on Marine Biodiversity, 12-16 Oct 2014, Qingdao, China.

Phil Thompson

Oral Presentation; 3rd Asia-Pacific Coral Reef Symposium, 24 June 2014, Kenting, Taiwan.

Abhishek Upadhyay

Oral Presentation; Multi-disciplinary Conference of “International Journal of Art and Sciences”, 26-30 May 2014, Boston, USA.

Karen Villarta

Oral & Poster Presentation; 10th International Temperate Reefs Symposium, 12-17 Jan 2014, Perth, Australia.

Zhen Wang

The first Sino-Finnish Summer School in Environmental Science (SFISSES 2014), 4-15 Aug 2014, Jyväskylä, Finland.
The Best Poster Award; The 9th Society of Environmental Toxicology and Chemistry (SETAC) Asia/Pacific 2014 Conference, 14-17 Sept 2014, Adelaide, Australia.

Archer Wong

Oral Presentation; 7th Congress of the European Malacological Societies, 8-12 Sept 2014, Cambridge, UK, United Kingdom.
Oral Presentation; The 3rd World Conference on Marine Biodiversity, 12-16 Oct 2014, Qingdao, China.

Simon Wong

Oral Presentation; Planning for *Sousa chinensis* Corridors and Protected Areas in the Southeast Asian Sea Eco-region, 20-23 Jan 2014, Xiamen, China.
Engagement Forums of Biodiversity Strategy and Action Plan (BSAP), 7 June 2014, Hong Kong.
Oral Presentation; Chinese White Dolphin Conservation Coalition 1st Training Workshop, 12-13 June 2014, Zhuhai, China.
Certificate of Teaching and Learning in Higher Education, July 2014, The University of Hong Kong, Hong Kong.

Elvis Xu

Oral Presentation: Regional EIA Symposium 2014, 9-11 Jan 2014, The Chinese University of Hong Kong, Hong Kong.
Oral & Poster Presentation: The 9th Society of Environmental Toxicology and Chemistry (SETAC) Asia/Pacific 2014 Conference, 14-17 Sept. 2014, Adelaide, Australia.

Sze Wing Yiu

12th Savanna Science Network Meeting, 9-13 Mar 2014, Kruger National Park, South Africa.

Mana Yung

The First Sino-Finnish Summer School in Environmental Science (SFISSES 2014), 4-15 Aug 2014, Jyväskylä, Finland.
The 9th Society of Environmental Toxicology and Chemistry (SETAC) Asia/Pacific 2014 Conference, 14-17 Sept 2014, Adelaide, Australia.

Robolimpets to Monitor Coastal Temperatures in SE Asia, 18-24 Jan 2014, The Swire Institute of Marine Science, Hong Kong

Invited Keynote Speaker:

Dr. Fernando Lima (University of South Carolina, USA)

Overseas Participants:

Prof. Christopher McQuaid, Dr. Yunwei Dong, Dr. Monthon Ganmanee, Mr. Kee Alfian, Dr. Neil Hutchinson, Dr. Benny Chan, Dr. Rui Seabra, Ms. Jindara Premepramote, Ms. Chayanid Meepoka, Ms. Alicia Tan & Mr. Jia Wang

From SWIMS:

Prof. Gray Williams (Organizer), Dr. Terence Ng, Ms. Michelle Luk, Ms. Karen Villarta, Mr. Tommy Hui & Mr. Martin Cheng

XI International Symposium on Littorinid Biology and Evolution, 28 July-1 Aug 2014, The University of Hong Kong, Hong Kong

Overseas Participants:

Prof. Mark Davies, Prof. Christopher McQuaid, Dr. Yunwei Dong, Dr. Monthon Ganmanee, Dr. Anja Westram, Prof. Roger Butlin, Prof. Kerstin Johannesson, Prof. Elizabeth Boulding, Mr. Christopher Austin, Mr. Arseniy Lobov, Dr. David Reid, Dr. Mark Ravinet, Dr. Johan Hollander, Prof. David Marshall, Dr. Laurent Seuront, Ms. Severine Fourdrills, Dr. Márten Duvetorp, Dr. Natalia Mikhailova, Prof. Andrei Granovitch, Dr. Marina Panova, Mr. Xiongwei Huang, Ms. Cynthia Wong, Dr. Arina Maltseva & Ms. Zinaida Starunova

From Chinese University of Hong Kong:

Prof. Ka-Hou Chu & Mr. Daniel Wang

From Hong Kong Baptist University:

Ms. Huawei Mu

From AFCD, HKSAR:

Dr. Yiu-Ming Mak & Ms. Kathy Li

From SWIMS:

Prof. Gray Williams (Organizer), Dr. Terence Ng (Organizing Committee), Ms. Karen Villarta, Mr. Tommy Hui, Mr. Martin Cheng & Mr. Ramadoss Dineshram

The World Is Our Oyster, 4-5 Mar 2014, The University of Hong Kong, Hong Kong

Overseas Participants:

Prof. Kwang-Sik Choi, Dr. Sam Dupont, Prof. Aileen Tan, Dr. Ziniu Yu & Ms. Emily Driscoll

From Chinese University of Hong Kong:

Prof. King-Ming Chan, Prof. Sidney Cheung, Dr. Doris Wu, Shengxia Wu, Zijing Wu & Chuhan Yan

From The Hong Kong University of Science & Technology:

Ms. Caroline Chan, Yingwei Hu & Ms. Peggy Pai

From City University of Hong Kong:

Dr. SG Cheung, Dr. Yun-Wah Lam (Symposium Organizer) & Haoyu Zhang

From The Open University of Hong Kong:

Kin-Ka Chan, Ms. Celia Kwok, Dr. Wang-Fat Lee, Ka-Yiu Li, Wing-Wai Wan & Kam-Chau Wu

From The Hong Kong Polytechnic University:

Dr. Haimin Yao

From SWIMS:

Dr. V Thiagarajan (Organizer), Dr. Ackley Lane, Dr. Vera Chan, Dr. Ramadoss Dineshram, Mr. Abhishek Upadhyay, Ms. Camilla Campanati, Mr. Martin Cheng, Ms. Ginger Ko (Organising Committee and MC), Mr. Roy Li, Ms. Michelle Luk, Ms. Yuan Meng & Ms. Cherrie Teh

From HKU:

Prof. Sun Kwok (Dean of Science), Prof. Rudolf Wu, Prof. David Dudgeon, Prof. Kenny Leung, Ms. Jessie Lai, Ms. Jade Chan (Symposium Co-ordinator), Ms. Ivy Cheng, Mr. Sam Cheung, Dr. David Green, Ms. Giedre Jurkonyte, Ms. Winnie Lai (Symposium Co-ordinator), Dr. Kelvin Yeung (Symposium Organizer), Changzhong Liao, Xiuqing Lu, Dr. Kaimin Shih, Minhua Su, Yutong Sun, Dr. Patsy Wong, Hanlu Yan & Zhengyuan Zhou

The 6th UCAS Postgraduate Symposium Conservation of Aquatic Biodiversity: From Scientific Research to Management, 11-14 Mar 2014, Wu Kwai Sha Youth Village, Hong Kong

From XMU; National Taiwan Ocean University; Tongji University, Université Bordeaux I:

Dr. Nenwang Chen, Dr. Deli Wang, Prof. I-Shing Chen, Prof. Ching-Ta Chuang, Dr. Li-Li Chen

Ms. Li Chen, Ms. Mengshan Duan, Ms. Xiaozhen Yang, Mr. Ling Li, Ms. Yinqi Wu, Mr. Penghui Li, Ms. Jing-Jen Lin, Mr. Xun Li, Mr. Junlong Chen, Mr. Hsinhung Huang, Ms. Ching Hsien Ho, Mr. Po Wei Yeh, Ms. Chunpei Liao, Mr. Chin-Yi Huang, Mr. Rongmo Huang, Mr. Weiting Wu, Ms. Xiaowan Ma, Mr. Guochen Jiang, Ms. Rouying Lu, Mr. Kunting Lin, Ms. Meifang Wu, Mr. Paul-Antoine Fougères, Mr. ZongHan Wen, Ms. Yijie Wang, Mr. Kandasamy Kalimuthu, Ms. Yifan Chen, Mr. Yudong Cui, Mr. Jianlong Li, Ms. Ya-Wen Zhang, Mr. Yuting Zhang, Ms. Yingying Wang, Mr. Chengtsung Tseng, Ms. Dangni Zhang, Ms. Hoyjung Cha, Mr. Yu-Chun Chen & Mr. Cheng-Chien Huang

From SWIMS:

Prof. Yvonne Sadovy & Prof. Kenny Leung
Mr. Calton Law, Ms. Yanny Mak, Mr. Abhishek Upadhyay, Mr. Martin Cheng, Ms. Lily Tao, Mr. Richard Cheung, Ms. Mana Yung, Ms. Yuan Meng, Ms. Circle Hong, Mr. Archer Wong & Mr. Phil Thompson

From SBS, HKU:

Prof. David Dudgeon, Mr. Edward Lau, Mr. Samuel Wang, Ms. Beverly Po, Ms. Elaine Yuen, Mr. Siukit Ho & Mr. Anthony Lau

Visitors to SWIMS

Dr. Fernando Lima (University of South Carolina, USA)
Prof. Christopher McQuaid (Rhodes University, S. Africa)
Dr. Yunwei Dong (Xiamen University, China)
Dr. Monthon Ganmanee (KMUTT, Thailand)
Dr. Neil Hutchinson (James Cook University, Singapore)
Dr. Benny Chan (Academia Sinica, Taiwan)
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Dr. Rui Seabra (CIBIO - Universidade do Porto, Portugal)
Mr. Jie Wang (Xiamen University, China)
Ms. Christine Loh (Deputy Secretary for the Environment, HKSAR Government)
Prof. Peter Mathieson (President and Vice Chancellor, HKU)
Prof. Mark Davies (University of Sunderland, UK)
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Prof. Chris Scholin (Monterey Bay Aquarium Research Institute, USA)
Dr. James G. Bellingham (Monterey Bay Aquarium Research Institute, USA)
Dr. Yanwu Zhang (Monterey Bay Aquarium Research Institute, USA)
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Dr. Vianney Denis (Academia Sinica, Taiwan)
Ms. Julia Leung (Academia Sinica, Taiwan)
Ms. Abby Hinchcliffe (South Island School)
Ms. Kiara Suzuki (South Island School)

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Dr. Yayoi Oshima (Tokyo University of Marine Science and Technology, Japan)
Dr. Yumiko Sato (Tokyo University of Marine Science and Technology, Japan)
Dr. Toshiaki Komatsu (Tokyo University of Marine Science and Technology, Japan)
Dr. Ian Hewson (Cornell University, USA)
Mr. How Man Wong (China Exploration & Research Society)
Dr. Bill Bleisch (China Exploration & Research Society)
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Ms. Teresa Ma (City University of Hong Kong)
Ms. Natalie Chen (City University of Hong Kong)
Ms. Veronica Lam (City University of Hong Kong)
Dr. Ellen Raghoudi (University of Adelaide, Australia)
Mr. James Hui (Hong Kong)
Mr. R Anand (Hong Kong)
Dr. Khaki Chan (AFCD)

Group Visits

29 staff & students from Australian International School Hong Kong, Feb. 2014
50 staff & students of HKU Knowledge Exchange Project Scheme (Water Sampling), Mar. 2014
27 staff & students from College of International Education, Hong Kong Baptist University, Mar. 2014
15 staff from Surf Hong Kong Ltd., Mar. 2014
16 staff & students from Island School, Mar. 2014
80 staff & students from South Island School, Apr. 2014
25 staff & students from Discovery College, June 2014
35 staff and students of ASU and CityU course on urban sustainability in Hong Kong (Topic: Marine Management), June 2014
25 staff & students from Shatin Methodist College, June 2014
22 UGS from BIOL 2318, HKU, July 2014
9 staff & students from Kellett School, Sept. 2014
31 management trainees of Swire Group, Sept. 2014
64 staff & students from West Island School, Sept. 2014
80 UGS from ENVS 1002/1301, HKU, Sept. 2014
50 UGS from ENVS 2001, HKU, Nov. 2014
90 members & family members from Swire Hong Kong Staff Association, Sept. 2014
90 staff & students from King George V School, Nov. 2014
18 staff & students from Island School, Dec. 2014

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Conti-Jerpe, Ramadoss Dineshram, Marielle Dumestre, Nicolas Duprey, Kevin Ho, Alex Huang, Tommy Hui, Yuanyuan Hong, Jack Ip, Anna Joest, Leszek Karczmarski, Ginger Ko, Ackley Lane, Calton Law, Cecily Law, Kenneth Leung, Priscilla Leung, Roy Li, Yanny Mak, Yuan Meng, Terence Ng, Carmen Or, Yvonne Sadovy de Mitcheson, Matthew Perkins, Ronia Sham, Alicia Tan, Lily, Tao, V Thiyagarajan, Phil Thompson, Abhishek Upadhyay, Juan Diego Urriago, Karen Villarta, Zhen Wang, Gray Williams, Archer Wong, Jane Wong, Martin Wong, Simon Wong, Elvis Xu, Moriaki Yasuhara, Sze Wing Yiu, Nina Yu, Mana Yung, GJ Zhou

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Dr. SJ Cannon, Executive Vice-President, HKU
Prof. Paul Tam, Vice-President and Pro-Vice-Chancellor, HKU
Prof. Sun Kwok and staff, Faculty of Science, HKU
Prof. Rudolf Wu and staff, School of Biological Sciences, HKU
Mr. KL Tam, Director, Estates Office, HKU
Mr. KS Wong, Assistant Director, Estates Office, HKU
Mr. EKS Yiu and staff, Estates Office, HKU
Dr. Edmund KM Hau and staff, Safety Office, HKU
Ms. SSM Lo 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
Dr. YM Mak and staff, AFCD
Ms. HY Lee, AFCD
Ms. Anissa SY Wong, Director, EPD
Mr. Lui and staff, PCCW Cape d'Aguiar Station
Mr. Shun Chi-Ming and staff, the Hong Kong Observatory
Ms. Suzanne Gendron and staff, Ocean Park Conservation Foundation Hong Kong

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Australian International School
Surf Hong Kong Limited
Discovery College
Kellett School
West Island School
King George V School
Island School

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Contact Details

Director

Resident Scientists

Prof. Gray A Williams
Dr. Kenneth Leung
Dr. V Thiyagarajan
Dr. Leszek Karczmarski
Dr. David Baker

hrsbwga@hku.hk
kmyleung@hku.hk
rajan@hku.hk
leszek@hku.hk
dmbaker@hku.hk

Non-Resident Scientists

Prof. Yvonne Sadovy
Dr. Moriaki Yasuhara
Dr. Ng Pun Tung, Terence
Dr. Nicolas Duprey
Dr. Ackley Lane

yjsadovy@hku.hk
yasuhara@hku.hk
puntung.ng@gmail.com
nicolas_duprey@yahoo.fr
acklelane@gmail.com

Post Doctoral Fellows

Dr. Ramadoss Dineshram
Dr. Ho King Yan, Kevin
Dr. Guang-Jie Zhou
Dr. Matthew Perkins

dinbiot@gmail.com
hokingyankevin@gmail.com
zhougj01@gmail.com
mperkins@hku.hk

Research Assistants

Postgraduate Students

Dr. Huang Shiang-Lin, Alex
Ms. Yu Tai Nga, Nina
Mr. Juan Carlos Astudillo
Ms. Karen Villarta

lamanciahuang@gmail.com
niniyu1111@gmail.com
juanfila@gmail.com
karen718@hku.hk

Mr. Xu Genbo, Elvis
Mr. Juan Diego Urriago
Ms. Amina Cesario
Ms. Hong Yuanyuan, Circle

genboxu@126.com
urriago@gmail.com
amina.cesario@gmail.com
oocirclr@gmail.com

Ms. Marielle Dumestre
Mr. Wong Wai Ho, Simon
Mr. Law Sui Wai, Calton
Ms. Yung Man Na, Mana

marielle.dumestre@gmail.com
simonforsure2002@yahoo.com.hk
calton0720@gmail.com
yungmana@hotmail.com

Mr. Wang Zhen
Ms. Ko Wai Kuen, Ginger
Ms. Yiu Sze Wing, Cwing
Ms. Or Ka Man, Carmen

zhen.wang@hku.hk
waikuenko@gmail.com
cwingyiu@hku.hk
carmenor@hku.hk

Mr. Li Chaoyi, Roy
Ms. Mak King Yan, Yanny
Ms. Chiu Wing Tung, Ruby
Mr. Ip Chi Ho, Jack

roy.chaoyili@gmail.com
yannymak@hku.hk
rubychiu@ymail.com
jackipchiho@hotmail.com

Mr. Wong Tik Lung, Archer
Mr. Hui Tin Yan, Tommy
Mr. Abhishek Upadhyay
Mr. Chan Chiu Yin, Stephen

archerw@connect.hku.hk
hty13@hku.hk
abhiup01@gmail.com
stephen_ssg@yahoo.com.hk

Ms. Shiru Tao, Lily
Ms. Yuan Meng
Mr. Cheung Ching Wa, Richard
Ms. Anna Joest

shirutao@connect.hku.hk
yuanmeng.connect@gmail.com
h1026139@hku.hk
annaJoest@gmx.de

Mr. Cheng Chun Fai, Martin
Mr. Phil Thompson
Ms. Wong Ching Yan, Jane
Ms. Camilla Campanati

kazukicheng@gmail.com
phil257@connect.hku.hk
wcyjing@gmail.com
camilla.campanati@gmail.com

Ms. Tan Lee Sian, Alicia
Mr. Wong Cheong Wai, Martin
Ms. Sham Chung Tin, Ronia
Ms. Inga Conti-Jerpe

xuanalicia@gmail.com
martincwong39@gmail.com
rcsham@hku.hk
ingacontijerpe@gmail.com

Ms. Archana Anand
Ms. Yiu Sik Fong, Sylvia
Ms. Law Chi Ling, Cecily
Ms. Chan Kit Ping

archanaa@connect.hku.hk
ssfyyiu@hku.hk
ccllaw@hku.hk

Secretary

Technical staff

Mr. Chan Pui Cheung, Patrick
Mr. Cheung Ming
Mr. Cheung Ming Hong
Mr. Wong Kam Kin, Simon



The Swire Institute of Marine Science, The University of Hong Kong

Cape d'Aguilar Road, Shek O, Hong Kong

Tel: (852) 2809-2179 • Fax: (852) 2809-2197

Email: swims@hku.hk • <http://www.swims.hku.hk/>

香港石澳鶴咀 • 香港大學 • 太古海洋科學研究所