Testing and Research Awards

Professor W.K. Li received the University Research Fellow Award 2009 for his significant contribution in quantum transport theory in mesoscopic systems and nanostructures.

Professor W.T. Wong, Chair Professor, Department of Physics, received the University Outstanding Research Award 2009 for his exceptional research accomplishments in the metal cluster and nanoparticles, X-ray crystallography, lanthanide chemistry, MRI contrast agents and luminescent probes for chemical imaging.

Professor J.G. Malpas, Chair of Earth Sciences and Pro-Vice-Chancellor, received the Award for Teaching Excellence 2007/2008 for his outstanding teaching performance and efforts in curriculum development in the Faculty of Science.

In addition to publishing our scientific findings in professional peer-reviewed journals, we also have the...
Getting Science to the Media
by Professor YJ Sadovy, School of Biological Sciences

For most scientists, there is enormous satisfaction in finally signing off on the proofs of a publication. With just the final printed article to come there is a great sense of achievement, especially so for those in their early years of publishing. Increasingly, however, for many of the scientific disciplines, publication of the actual science is just a first step. In fields of work that have significant environmental or conservation implications, or address major issues such as evolution or climate change, the need to ensure dissemination far beyond the scientific community is increasingly necessary. Only an educated public can understand debates on scientific matters, appreciate the relevance to their own lives of new developments, or even be inspired to support new policies in ways that could benefit our society.

Opportunities to Reach a Wider Audience
There are many ways to take science beyond the specialist journals. Popular magazines, University or Society publications, editorials or public speaking are obvious candidates as well as TV, radio and newspapers when opportunity arises. These all require sensitivity and a lighter touch with language to ensure that scientific outcomes and concepts are couched in a way that is accessible to a wide audience. There is a list of competition for airtime and column inches so stories need to be compelling and interesting as well as factual and accurate.

I would like to share a few of my experiences with newspaper stories covering my own work, opportunities to talk about work come through invitations from reporters or by issuing a press release. My passion and area of research lie with coral reef fisheries, especially ones of commercial importance threatened by overfishing. So my research in recent years has focused on the science of extinction risk in fishes, vulnerable life history traits, and fishery management in tropical fisheries, issues not always easy to convey simply. With the growing recognition that many of the world’s fisheries are overexploited has come a much greater interest from the media to cover fishery and conservation stories from the sea. I want to nourish and build upon that interest.

Delivering Messages Accurately
It took some time before I was able to convey my messages the way I wanted. And I am still learning. I could make my work more compelling by describing the interesting and beautiful species I work with. On the coral reef fish I see swimming in restaurant tanks around Hong Kong, did you know that some are older than you, or may have come to Hong Kong from half way across the planet? Depending on the interview, I could talk about the odd things that the animals I work on do, like change their sex, or teach them young where to go and breed. I try to use examples of fishes that are familiar to readers and occur in local restaurants and markets. For the press release of a recently published book, and my co-authors had a very short film made to compete with other book releases. This attracted press attention and opportunities for interviews.

I have learnt that it is well worth taking time to explain the broader context of my work to reporters. Often, because they cover many and varied stories, some of the more subtle points of my own stories became lost when the wider issues were not well understood. As one example, I recall a reporter who wanted me to say that people should categorically not eat shark fin. The issue in this case was not the shark fin itself but the fact that, currently, all fisheries for shark fin are conducted un-sustainably. In this particular case, biological sustainability was the issue, not food preferences, or the wasteful and cruel practices often associated with shark finning.

Dealing with the Media
Whether for an interview or press release, I always decide upfront what my one or two key messages are, and start with these. I try to express why the work is new and relevant, and how it addresses a particular problem. I use simple rather than technical language and am very careful to avoid making comments off the record; it may be difficult for a reporter to ignore these. I try to give them credits for gaining their interest in a possibly unprofitable endeavour.

I was told that the show did well in the viewership ratings. And for me, three names have been added to my list of artiste idols.

I asked Stephen why he had decided to produce the show while many similar programmes are already available on National Geographic and even TVB’s Pearl channels, especially as global warming is not an entertaining and marketable subject. He replied that so far none of those programmes were aimed at the Cantonese-speaking communities around the world; it was also a new attempt for them to bring on board earth scientists in a documentary show. Well, we should give them credits for taking the initiative in a possibly unprofitable endeavour.

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Finally, back to my theme, or rather, a plea. I strongly believe that, as scientists, we have a responsibility to communicate our work outside of our immediate peers, especially if it has important social or economic relevance. We should not just sit back and expect others to do this for us. Nowadays, we cannot just be scientists but must also train ourselves to become competent, credible and effective spokesmen (and women) for our discipline.
The Faculty of Science is celebrating its Platinum Jubilee in 2009, and it has launched its year-long activities at the Opening Ceremony of Stephen Hui Geological Museum on the University Main Campus on January 16, 2009.

Mr William L K Yui, Dr Stephen Hui’s son and officiating guest of the Ceremony, said that the museum was always his late father’s dream, and it gave him immense pleasure to see it coming into being. “I would like to thank the staff of the Department of Earth Sciences for their painstaking efforts in setting up this museum virtually from scratch.” Mr Yiu said. In thanking the Hui Family, Professor Richard Y C Weng, the Deputy-Vice-Chancellor and Provost, said: “Generation after generation, the Hui Family have lent their very generous support to the University.” Professor S Kwok, Dean of Science, said that the museum provided an attractive object-based learning laboratory for the nature and evolution of the planet to visitors at all ages. “The museum is vital in driving the development of Earth Science education at Hong Kong.”

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A souvenir will be given once your article is selected.

iii. no minimum words but not more than 500 words;
ii. in any literary style or format;
If you wish to share the memorable stories of your university life, interesting experience of the

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A Touch of Research Project: Conference Experience of Undergraduate Student

by Miss Tennia Zhao

Year 3, BSc (Earth Sciences)
Poster presenter at 2008 American Geophysical Union Fall Meeting, Dec 15-19, 2008
Participant of 2008 Summer Research Fellowship Scheme, Faculty of Science

My conference experience started as a summer research project on atmospheric and ionospheric anomalies prior to earthquakes. From the moment my two supervisors suggested this topic to me as one of the possibilities for my summer project, I knew this was the one I would choose. It was a tough project in that there was no well-established theories or methodology. However, it was very intriguing to me because the exploration started from natural phenomena themselves instead of theories. The project was an adventure in every step of the way, and what I was able to learn in this process was much more than I could have ever imagined.

Halfway through the project Professor J.C. Alchison told me that we might possibly submit the results of this project to a major conference. It was great to hear but I did not believe that it could really happen at all. Somehow, it sounded a bit too good to be true, but it happened! Our submission to hear but I did not believe that it could really happen at all. Somehow, possibly submit the results of this project to a major conference. It was great I could have ever imagined.

I would like to take this opportunity to thank my two supervisors: Dr K.H. Lenkie and Professor J.C. Alchison, who have proved to me that geologists are among the world’s most wonderful people. Whatever I have achieved in this experience is a testimonial of their kind guidance, encouragement and support.

Research of spintronics in the Faculty

by Professor J Wang, Department of Physics

The great application of spintronics microelectronics over the past few decades has changed our life in an essential way. Since the invention of integrated circuit in 1958, the number of transistors that can be placed in an integrated circuit doubled every 18 months, this is the so-called Moore’s law. The size of field effect transistor (the central component of microelectronics) has shrunk to 45 nanometers. According to Moore’s law, we anticipate that its size will reach atomic limit in about 15 years. Hence, the further development of microelectronic device needs new designing, new structures, new materials and most importantly new working principle. The goal of nanoelectronics is to develop a new technology for this purpose in the near future. This is why almost all the developed countries in the world are working very hard to develop nanoelectronics. One of the most important possibilities of nanoelectronics is the hope of using spin—addition to charge—for nonlinear electronic device applications. So far, progress has been achieved in several areas of spin-electronics (spintronics) such as the applications of giant magnetoresistive effect, the understanding of material properties of magnetic semiconductors, the improvements of spin injection across a magnetic-insulator interface, and optical manipulation of spin degrees of freedom. Traditional electronics is based on the flow of charge: the spin of the electron is ignored. Charge current presents a unique advantage in that it can manipulate spin degrees of freedom. In contrast, spintronics manipulates spin degrees of freedom more significantly because the heat it generates can damage tiny components that are too close together. The emerging technology of spintronics will make the leap such that the flow of spin, in addition to charge, will be used for electronic applications. Spin current is produced by a perpendicular gate voltage through a spin-orbit interaction. To generate spin current one can use a transport phenomena called spin-Hall effect originated from spin-orbit interaction: an electric current induces a transverse spin current. Recently, the spin Hall effect has been observed experimentally in semiconductors. To reduce the power dissipation, the notion of dissipations of quantum spin current has been a proposed for a result of quantum spin Hall effect that has been realized experimentally in high-$T_c$ superconductors. It is believed that quantum spin Hall current could enable quantum spintronics devices with integrated information processing and storage units, operating with low power consumption and performing reversible quantum computation.

Physicists in the Department of Physics are actively involved in the research of spintronics. The research projects include novel ways of detecting spin current and various novel transport behaviors of spin-current. The research team includes Professor F.C. Zhang, Professor J Wang, Professor S.Q. Shen and Dr X.D. Cui.

Prizes: $50 book token
Deadline: May 30, 2009

Please email your answer together with your name and school (for students), to sciwxs@hku.hk. Five winners will be drawn randomly from the contestants who give the correct answer.

Answer to Last Issue’s Quiz: Enceladus, a satellite of the planet Saturn.