



From left: Prof. Wu Cheng, Prof. Zhang Lihe, Prof. Mei Ziqiang, officiating guests President Prof. Poon Chung-kwong and Deputy Director of the Liaison Office of the Central People's Government Mr Wang Fengchao, Prof. Chen Nanxian, Prof. Yang Le, and Prof. Lu Qiang.

Tribute to renowned mainland scholars

Six renowned scholars from the Chinese mainland were honoured by the University at a special presentation ceremony of the "Distinguished Chinese Visiting Scholars Scheme" held on campus.

These scholars are: Prof. Wu Cheng, Professor of the Department of Automation, Tsinghua University; Prof. Zhang Lihe, Professor of the School of Pharmaceutical Sciences, Peking University; Prof. Mei Ziqiang, Professor and former Director of the China Textile Academy; Prof. Chen Nanxian, Professor of the Department of Physics, Tsinghua University; Prof. Yang Le, President of the Academy of Mathematics and System Sciences, Chinese Academy of Sciences (CAS); and Prof. Lu Qiang, Professor of the Department of Electrical Engineering, Tsinghua University.

During their stay in Hong Kong, the distinguished scholars, who were nominated by the University's academic departments, presented a series of public lectures and seminars on PolyU campus. They also exchanged ideas with and advised the departments concerned on a wide range of topics.

Prof. Wu Cheng is a dedicated scientist in Automation Technology and a pioneer of China's Contemporary Integrated Manufacturing Systems (CIMS) project,

which provided solutions to information integration in complicated environments. Prof. Wu is Member of the Chinese Academy of Engineering and Director of the National CIMS Engineering Research Center.

Prof. Zhang Lihe is a distinguished expert in pharmaceutical sciences. His research focuses on the Chemistry of Nucleoside and Nucleotides, Anticancer and Antiviral drugs. He is Member of the CAS and Director of the Chemistry Department of the National Natural Science Foundation.

Prof. Mei Ziqiang is a well-known specialist in Textile Engineering. He has been instrumental to the development of various world-class machinery which contributed immensely to the textile industry of China. Prof. Mei is Member of Chinese Academy of Engineering and Member of the 8th and 9th Chinese People's Political Consultative Conference.

Prof. Chen Nanxian is a highly respected physicist both at home and abroad. He has

developed a number of solutions to key problems in Applied Physics and Material Science. Prof. Chen is Member of CAS, Director of the Applied Physics Research Institute of Beijing University of Science and Technology, and Senior Research Associate of the International Centre for Theoretical Physics in Italy.

Prof. Yang Le has made significant contributions to mathematics, especially in the modular and angular distribution of entire and meromorphic functions, as well as the normal families. Prof. Yang is President of the Academy of Mathematics and System Sciences, CAS, and Member of the Chairman Group and Member of CAS.

Prof. Lu Qiang is a renowned scientist in Power Systems and Control Theory. He is Member of the CAS, Chief Scientist of the National Key Basic Research Project on Power Systems and the Director of the National Key Laboratory of Power Systems, Tsinghua University. ❖



The Scheme provides an excellent foundation for PolyU's collaboration with mainland institutions.

Flashback: Major conferences

The Sixth Asian Textile Conference

22-24 August

Held on campus from 22-24 August by The Hong Kong Institution of Textile and Apparel with the support from PolyU's Institute of Textiles and Clothing, the event gathered together more than 400 participants from over 20 nations and cities. With the theme "Innovation and Globalisation", the forum focused on the current trends in the textiles and clothing fields. Kicking off the conference were: Mr Brian Chau, Secretary for Commerce and Industry of the HKSAR; Mr Chu Zhi-nong, Director General of Education of Liaison Office of The Central People's Government; Mr Chan Sui-kau, Honorary Chairman of Textile Council of Hong Kong Ltd., and PolyU President Prof. Poon Chung-kwong.



International Symposium on Accrual-based Government Accounting and Budgeting

28-31 August

This event was held at PolyU from 28-31 August as a collaborative effort between PolyU's China Accounting and Finance Research Centre and the Budget Department of the Ministry of Finance. Drawing on international experiences in government accounting and budgeting reform, it aimed to analyse the current situation in the Chinese mainland, and to further study the feasibility and specific measures of implementing accrual-basis to the accounting and budgeting functions of the Chinese government. The symposium was attended by scholars, professionals, as well as policy makers, including Mr Lou Jiwei, Deputy Minister of the Ministry of Finance and Mr Guo Xiangru, Deputy Governor of Liaoning Province.

The Second State of Hong Kong Tourism Conference

18 October

Entitled "Tourism Horizons", the event was organised by the School of Hotel and Tourism Management at Hotel Nikko Hongkong on 18 October 2001 to provide a forum for the tourism industry to discuss the current state and future of tourism in Hong Kong. A highlight of the meeting was the keynote speech delivered by Dr H. Varma, Regional Representative for Asia and the Pacific of the World Tourism Organisation, "Hong Kong 2020 - The Big Picture". In particular, a plenary session was set aside to examine the implications of the recent incidents in the US for the local tourism industry.



Prof. Chau Wai-yin Memorial Lecture

15 December

Esteemed researcher Prof. Tom Kirkwood has been invited to deliver this year's Prof. Chau Wai-yin Memorial Lecture on campus on 15 December. Entitled "What Makes Us Age? The Science of Human Ageing", his talk uncovered some of the secrets of ageing by examining the role of genes in ageing and health. Prof. Kirkwood came from the Institute for Ageing and Health, University of Newcastle-upon-Tyne, UK. To commemorate the life and work of Professor Chau Wai-yin, the late Deputy President, PolyU has established a Memorial Fund to support lectures by eminent scientists and scholarships for outstanding students. This year, two students received scholarships sponsored by the Fund.

Symposium on co-operation with Shaanxi

20 December

A symposium on "The Prospect of Economic Cooperation Between Shaanxi Province and Hong Kong and Business Negotiation", was held on campus on 20 December to offer the latest information on the nation's plan to develop its western region, and to explore co-operation opportunities thus arising. The event was co-organized by PolyU, the Government Policy Consultative Committee of Shaanxi Province, and the Science and Technology Bureau of Shaanxi Province.

Antioxidants study attracts grant from

Researchers at PolyU have been awarded a grant of \$870,084 by the World Cancer Research Fund (WCRF) for a research project to investigate the possible anti-cancer effects of fruits, vegetables and Chinese herbs.



The London-based WCRF funds only around 10 research projects worldwide per year, and this is the first one to originate in Hong Kong or greater China.

The research team members involved in this international collaborative study are Dr Iris Benzie (Principal Investigator), Mrs Christine Yow and Ms Mimi Tse, of the Department of Nursing and Health Sciences, and Prof. Andrew Collins, a leading DNA specialist based at the world famous Rowett Research Institute in Aberdeen, Scotland. The aim of the research project is to develop a more physiologically relevant test to assess the short and long term benefits of antioxidant-rich foods in relation to cancer prevention.

Biomedical Scientist Dr Benzie said, "Cancer is the leading cause of death in Hong Kong, and anything that can delay the onset or slow down the progression of cancer will have a significant impact for our local population. We are delighted that the World Cancer Research Fund has approved this funding for our research, in which we aim to develop a more 'life-like' model for assessing the DNA protective effects of fruits, vegetables and traditional Chinese herbal medicines. The WCRF grant application process is highly competitive, and this success is a very exciting development in antioxidant research at PolyU".

The vision of the WCRF is to prevent cancer worldwide, and the health



From left Mrs Christine Yow, Dr Benzie and Ms Mimi Tse, with some of the TCM, foods and beverages to be tested for antioxidant and anti-cancer properties

enhancement and antioxidant research team hopes to contribute to this through their research work and the dissemination of research findings.

Dr Benzie and her colleagues are working in various aspects of antioxidants and diet, health enhancement and ageing. In Hong Kong, as well as elsewhere in the developed world, cancer and cardiovascular disease are the major killers. However, there is a growing epidemic of Type 2 diabetes mellitus, and Hong Kong's population is a rapidly ageing one.

Cancer, cardiovascular disease, diabetes and other age-related disease, such as Alzheimer's disease, Parkinson's disease, arthritis, cataract and macular degeneration, are strongly and indisputably linked to oxidative damage to key biological sites within the body.

Oxidative damage accumulates with age, increasing the risk of age-related, degenerative disease. In addition, oxidative damage ('oxidative stress') is thought to be

World Cancer Research Fund



Dr Benzie with team members PolyU International Postgraduate Research Scholarship holder Ms Sissi Wachtel-Galore and Post-Doctoral Fellow Dr Szeto Yim-tong.

a crucial component of the ageing process itself. Oxidative damage to protein, lipid and DNA is caused by 'free radicals', or reactive oxygen species. These reactive species are sometimes from the environment, but many are by-products of our own normal metabolism and immune system, and so are largely unavoidable.

These often unwelcome, and potentially very damaging reactive oxygen species affect the functioning of our cells and tissues. We manufacture and also obtain from our diet many effective antioxidant defences, which protect our cells and structures from damage.

However, antioxidants are not infallible, and deficiency can occur, especially if the demand for antioxidant defence is high or the dietary intake is inadequate. In such cases, oxidative damage to DNA, cell membranes and other important biological sites occurs, leading to dysfunction and disease. Oxidative damage and antioxidant levels can be detected using an array of sensitive biomonitoring tools, and this provides insight into the oxidant/antioxidant balance of the body.

Oxidative damage may be decreased or prevented by increasing the body's antioxidant defences. This may, in turn, help maintain health and promote successful ageing. The research focus of the research team at PolyU focuses on the antioxidant properties of fruits, vegetables, teas and Chinese herbs in relation to human ageing and health.

Co-investigator Ms Mimi Tse said, "Many people have read that 'free radicals' are bad and that antioxidants are good for health – but things are not quite so simple. For example, we need to establish if antioxidants in food and Chinese herbs are absorbed and study the mechanisms underlying their health benefits."

With this in mind, research is being performed by the team to assess the bioavailability (the ability to absorb) of antioxidants from foods and herbs, and to investigate the short- and longer-term effects of ingestion of antioxidant-rich foods and herbs on biochemical or biological markers ('biomarkers') of antioxidant defence, oxidative damage and disease risk. Using this biomarker approach, the reputed health promoting effects of, for example, Vitamin C, green tea and traditional Chinese medicines (TCM), such as Lingzhi (*Ganoderma lucidum*) are being scientifically evaluated. "TCM is receiving a lot of attention worldwide", said project team member Mrs Christine Yow, "and many members of our local community take TCM regularly for health promotion and cancer prevention. However, in our knowledge-based society, we need to establish if and how TCM work at the molecular level."

Several of the biomarkers used for this purpose have been pioneered and evaluated by Dr Benzie and her co-workers. These include:

- the Ferric Reducing (Antioxidant) Power

(FRAP) assay (Benzie & Strain 1996; US patented) for measuring total antioxidant capacity

- a modification of the FRAP assay, known as FRASC, for the simultaneous measurement of Vitamin C (ascorbic acid) and total antioxidant capacity
- a High Performance Liquid Chromatography technique for allantoin
- a flow cytometric technique for detecting lipid peroxidation in the membranes of living cells
- DNA damage by the enzyme assisted comet assay
- a modified, lysed cell, comet assay, which is being evaluated by Dr Y.T. Szeto, Research Fellow in the antioxidant team.

Using these and other biomarkers, the researchers have performed numerous research studies and generated a host of papers and publications over the past few years, placing PolyU on the world stage of antioxidant and age-related research.

Because of the strong relationship between health, diet, antioxidants, oxidative stress, ageing and age-related disease, antioxidant research is inter-disciplinary and highly collaborative. PolyU has thus established extensive research links with internationally recognised experts in human nutrition, cancer biology, DNA damage and repair, ageing, and diabetes.