

University of CAS Greets First Freshmen in History

The year 2014 witnesses a milestone in the history of the University of the Chinese Academy of Sciences (UCAS). By taking on its first ever undergraduate students enrolled from across China, UCAS will strive to nurture not only top-level masters and doctors, but also elite bachelors for the rapid S&T development in the country.

On September 5, the 360 freshmen participated in the UCAS fall semester opening ceremony and received a warm welcome from CAS President BAI Chunli at the university's Yanxihu campus in the northern suburbs of Beijing.

"After I graduated from Peking University, I became a post-graduate of CAS in 1978," Bai told them. At that time, UCAS was the "Graduate University of CAS", which was China's first graduate university.

As Bai pointed out, with the support of the academy's nationwide research institutes, UCAS distinguishes itself from other Chinese universities with a unique strength in science-education integration. Now, it is planning for a much more flexible teaching system for undergrads, including giving them multiple chances to choose their majors and fields, assigning more than one mentors to help them start academic career early, remarkably increasing the use of exploratory teaching and discussion to encourage active, critical thinking, and promoting exchange and international visits, he revealed.

Bai was echoed by UCAS President DING Zhongli, who revealed some details about the upcoming reform at the university concerning both undergraduate and postgraduate education. According to Ding, some UCAS schools in fundamental sciences will be merged into correspondent CAS institutes. For instance, the UCAS School of Mathematical Sciences will be hosted mainly by the CAS Academy of Mathematics and Systems Science, and the UCAS School of Physics mainly by the CAS Institute of Physics. The departments under a UCAS school will be crewed by both UCAS teachers and research professors from CAS institutes.

Ding emphasized that the goal of introducing bachelor students is by no means limited to prepping for UCAS's own postgraduate system. It is aimed at "impacting the existing undergraduate education regime in China that features indoctrination and streamline production of students," he said. "We must become aware of the utmost importance of quality teaching in the first two years of their university study, and pour the best teachers and



UCAS President DING Zhongli talks to freshmen after the university's fall semester opening ceremony on September 5, 2014.

resources into it."

However, he said that the focus of UCAS will still be on postgraduate education, and the enrollment of undergrads will be kept at a small scale.

WANG Boyi, a freshman majoring in biological sciences, said that she became interested in UCAS since she was a high school student, when participating in a scientific project at the CAS Institute of Microbiology. "Its famous scientist teachers and academic atmosphere have fancied me so much, and my family absolutely support my decision", she said excitedly.

She came up with a new interpretation of "UCAS" – "U Catch A Secret", indicating her strong scientific pursuit and high expectation here.

Today, UCAS boasts a luxurious teaching staff including about 3,000 internationally recognized scholars recruited through top national talent programs, and 334 Members of the Chinese Academy of Sciences and the Chinese Academy of Engineering. UCAS is home to four national laboratories, 30 basic research infrastructure facilities, 84 state key labs and 41 national engineering research centers.

The total number of students at UCAS stands at 45.7 thousand, half of them PhD applicants. In 2014, the recruitment toll is some 7,700, including 360 undergraduates and 853 foreign students.

According to Nature Publishing Index 2013, CAS ranks the 6th in the top 100 research institutions around the world, and number one in the Asia-Pacific rankings.

(By XIN Ling)

LI Jinghai Becomes New Vice President of ICSU

LI Jinghai, a chemist and vice president of the Chinese Academy of Sciences, has been elected to the deputy presidency of the International Council for Science (ICSU).

To be mainly in charge of scientific planning and review from 2014 to 2017, Li was elected during the 31st ICSU General Assembly which was convened in Auckland, New Zealand early September.

Li is an internationally recognized chemical engineer specializing in the simulation and optimization of chemical processes. His work pioneered the formation of a new sub-field of condensed matter physics known as mesoscience, which deals with materials between the nano-scale and the micro-scale.

After obtaining his PhD from the CAS Institute of Process Engineering (IPE), Li conducted post-doctoral studies at the City University of New York and the Swiss



Federal Institute of Technology. He joined IPE as a researcher in 1990, and was later appointed institute director and vice president of the academy.

Currently Li is also vice chairman of the China Association for Science and Technology. He is an academician of CAS and TWAS (the world academy of sciences for the advancement of science in developing countries).

It is the second time that a Chinese scientist has become vice president of ICSU, following soil geography expert SUN Honglie, who was elected in 1996 to serve in the same post.

ICSU is a non-governmental organization with a global membership of national scientific bodies and international scientific unions that represent over 140 countries. It aims to unify the international scientific community, and to leverage upon its combined knowledge and resources for the betterment of humanity.

TAN Tieniu Elected into Royal Academy of Engineering

TAN Tieniu, a leading scientist in pattern recognition and deputy secretary-general of CAS, was announced to be elected International Fellow of the Royal Academy of Engineering (RAEng) on September 16.

The announcement came after the Annual RAEng Meeting held on September 15 in London. Dr. Dame Ann Dowling, RAEng President, was quoted as saying, “Our newly elected Fellows bring an enormous breadth of expertise to the Academy, widening our collective scope and knowledge. I know that they will all make significant



contributions to the Academy’s activities in their time as Fellows and we look forward to working with them to create benefit for society through engineering.”

Tan is a world-leading engineering researcher in pattern recognition. According to the RAEng website, “his research contributions have underpinned the sustainability of his fields and have led to numerous engineering applications of great societal importance in China and worldwide. His legendary leadership of research organizations and service to the

academic community has changed the landscape of his fields.”

Tan earned his PhD degree in electronic engineering from Imperial College London in 1989, and then worked as a research fellow, senior research fellow and lecturer at the Department of Computer Science, University of Reading. He returned to China in 1998 to join the National Laboratory of Pattern Recognition (NLPR), CAS Institute of Automation as a full professor. He was the director general of the institute between 2000 and 2007, and the director of NLPR from 1998 to 2013.

Now he serves as professor and director of the Research Center for Intelligent Perception and Computing under NLPR.

Tan is one of the seven newly elected International Fellows, together with 51 new Fellows and one Honorary Fellow, this year.

Founded in 1976, the Royal Academy of Engineering is UK’s national academy for engineering, and its fellowship has been one of the highest honors for engineers and engineering professors around the world. By far, the total number of RAEng Fellows stands at over 1,400.

Volvo Environment Prize Goes to Chinese Climate Scientist

Dr. QIN Dahe, a world renowned scientist in glaciology and climate change research, was awarded the 2013 Volvo Environment Prize for his outstanding contributions to the “scientific understanding of the climate, both in his own country of China and at the global level”.

According to a press release from the Volvo Environment Prize Foundation, Dr. QIN is “a key contributor” to the fifth IPCC assessment report, and “had a leading role in last year’s special report from IPCC on extreme events and catastrophes”.

Dr. QIN is the author of the first section of the 5th IPCC assessment report, “Physical Science Basis”. Meanwhile, the special report, of which he is a major co-author, proved to be a “game-changer”, as the Award Jury put it, demonstrating for the first time “a clear link between climate change and many extreme events, an issue of immediate relevance for human well-being in many parts of the world”.

For many years, Dr. QIN has been strongly involved in the study of the dynamics of glaciers and ice sheets around the world. He participated in or led many scientific expeditions to the Antarctic, Arctic, Qinghai-Tibetan Plateau and Western China, and his research on snow-to-glacier processes in Antarctica and in the Himalaya has been ground-breaking.

Now he works as a research professor at the Cold and



Arid Regions Environment and Engineering Institute of CAS in Lanzhou. He also serves as Co-chair of the IPCC Working Group 1. He is former director of the China Meteorological Administration and a former permanent representative with the World Meteorological Organization.

Founded in 1988, the Volvo Environment Prize is awarded every year to people who have made outstanding scientific discoveries within the area of the environment and sustainable development. Over the last two decades, the prize has gone to 40 people, including many well-known names and three Nobel Prize winners. It has become one of the most prestigious environmental prizes in the world. Dr. QIN received the award at a ceremony in Stockholm on November 26, 2013.

CAS Key Lab Approved to Launch Targeting Emerging and Highly Infectious Diseases

Recently a CAS Key Laboratory was approved to be established at the Wuhan Institute of Virology (WIV), CAS, as a platform for etiology and biosafety research on emerging and highly infectious diseases, including Ebola haemorrhagic fever. Once built, it is expected to provide R&D support for the prevention and control of important infectious diseases, as an integral part of the national security system.

Drawing on the existing build-up and resources at WIV in the field of emerging violent viruses and biosafety research, the new Key Lab is to boost the basic and applied fundamental research on quick detection of antigens, molecular epidemiology, epidemic forecast and alert, pathogenic mechanisms, and strategies for the prevention and control of emerging and highly infectious diseases, including Ebola haemorrhagic fever. It will also dedicate itself to R&D of therapeutic antibodies, vaccines, drug evaluation and appraisal, and biosafety.

The new Key Lab will take root in the Institute's build-up in the field of etiology and biosafety research in emerging and highly infectious diseases. Back to 2003, WIV made prompt responses to the outbreak of SARS and played an important role in the battle against this epidemic. WIV scientists successfully detected and isolated SARS-like coronavirus of genetic diversity from bats, demonstrating that bats could be natural hosts of SARS coronavirus. In the prevention and control of bird flu, they effectively detected the antigens and

antibodies, and isolated multiple strains of H5N1 bird flu virus, demonstrating that birds were still a potential way of the spread of this epidemic.

Experience accumulated from the above-mentioned battles against epidemics has equipped WIV with necessary capacity to address new challenges in the prevention and control of emerging viruses, paving the way for the setup of research groups in 2007 majoring in research on emerging viruses. In 2010 WIV saw the establishment of a research centre for studies of emerging infectious diseases on its campus, and later in 2012 formation of a team specialized in etiology for emerging infectious diseases. Over the past years, this team made a series of advances in antigen diagnosis, molecular epidemiology, virus immunology and structural biology, developing its own characteristics and advantages.

Director of the new Key Lab, Prof. SHI Zhengli, has long devoted herself to the research on emerging viruses, ranging from the isolation and identification of viruses, inheritance and evolution of viruses, techniques for virus detection, to molecular epidemiological research of viruses. Currently she focuses her efforts on virus carried by wild animals like bats, with extra emphasis on molecular epidemiology and molecular mechanisms underlying cross-species infections of viruses carried by bats that pertain to the health of both humankind and livestock.



Shown is a view from the equipment for sample preparation at WIV, used in the development of diagnosis techniques.