ADVERTISEMENT FEATURE

A PIONEER IN BIOLOGICAL RESEARCH AND EDUCATION IN CHINA

A renowned biochemist and educator in China and a former president of China's prestigious Peking University, Longxiang Zhang made pioneering contributions to the development of biological research and education in China.

Professor Longxiang Zhang devoted his whole life to the development of biochemistry and higher education in China.

"As one of the most prestigious universities in China with concentrated resources in research and education, Peking University should dare to shoulder the responsibility of propelling the science and technology take-off of the nation," Longxiang Zhang once said while president of Peking University (PKU). Whether conducting scientific research or administering a higher education institution, Zhang always strived to advance the development of China's science and technology.

Longxiang Zhang at age 25. This photograph was taken in March 1941 at the University of Toronto.

2016 marks the 100th anniversary of Zhang's birth. The School of Life Sciences at PKU organized a symposium in March to honor Zhang. It was attended by members of Zhang's family, former colleagues and students, as well as current faculty members and students at the university. Delegates from the Chinese Society of Biochemistry and Molecular Biology, the Peking University Education Foundation and the SungenBio Company also attended the symposium. Participants recalled Zhang's remarkable life and paid tribute to his remarkable contributions to the university and China. Participants also witnessed the establishment of the Longxiang Zhang Memorial Fund, to which SungenBio contributed 3 million RMB. This fund will be used for various functions in the School of Life Sciences, including activities organized by the alumni association, a financial relief programme for teachers and students and the promotion of innovation and entrepreneurship of faculty and students.

Born on 19 March 1916 in Nanxun in Zhejiang Province, Zhang obtained his bachelor's degree in chemistry at Tsinghua University in 1937. In 1939, he became a research assistant at the Agricultural Research Institute of Tsinghua University and was admitted to the Boxer Indemnity Scholarship Program. He went to the University of Toronto in 1940 for his doctoral studies in biochemistry, which focused on the metabolism of carcinogenic polycyclic aromatic hydrocarbons. In 1942, Zhang conducted postdoctoral research in the Department of Chemistry of Yale University, studying the lipid chemistry of the pathogenic bacterium *Mycobacterium tuberculosis*.

In 1944, Zhang returned to China to work as a researcher at Chongqing Tung Oil Institute. He later joined PKU as a professor in the Department of Chemistry and subsequently joined its Department of Biology. Since the foundation of the People's Republic of China, Zhang held various administrative positions at PKU, including the associate secretary-general, director of research administration, vice-president and president of PKU. He passed away in 1996.

Research achievements in biology

Zhang pioneered research in China on trypsin (a protein cleavage enzyme found in the mammalian digestive system). He focused on the area from 1953 and in 1958 mentored young faculty members in chemically synthesizing oxytocin (an eight-residue peptide hormone). In the early 1960s, Zhang systematically studied the molecular mechanism of trypsin autolysis in the intestine. He established a well-equipped research laboratory on protein structure and function. In 1985, Zhang took the lead in launching the trypsin molecular design and protein engineering project, which later became part of the National High-Tech Research and Development Program (863 Program). Zhang's laboratory also became part of a National Key Laboratory.

Reestablishing the biochemistry major in China

In addition to his research accomplishments, Zhang promoted the re-establishment of the biochemistry major in China after the foundation of the People's Republic of China. This resulted in PKU being the first Chinese university to offer a biochemistry major. Over the next 60 years, more than 2,000 biochemistry major students graduated from the university and many of them became leaders in various fields.

Zhang was a co-founder of the Chinese Society of Biochemistry (now the Chinese Society of Biochemistry and Molecular Biology) and served in various positions, including secretary-general, vice president and president of the society. He also served three terms as executive editorial board member of the Chinese Biochemical Journal, which was established in 1985. Because of his expertise, Zhang was selected to review grants in the fields of protein engineering and biotechnology for China's 863 Program from 1987 to 1993.

Zhang was a forerunner in promoting international collaboration for biochemistry education and research. In the 1980s, Zhang was appointed chairman on the China side for the China–United States Biochemistry Examination and Application (CUSBEA) programme, which selected and placed Chinese students to pursue a PhD degree in biochemistry at top American universities. He also encouraged CUSBEA students to return to China after finishing their studies in the United States, and, as a result, many CUSBEA fellows have become leading scientists in China today.

Promoting other developments in science and technology

Zhang's contribution to Chinese science extends beyond the field of biochemistry. While in charge of research at PKU, Zhang supported many major projects of great significance. For example, he promoted the chemical synthesis of the protein hormone insulin, which was a collaborative effort between PKU and the Shanghai Institute of Biochemistry and the Institute of Organic Chemistry, Chinese Academy of Sciences. After seven years of effort, the team successfully synthesized bovine insulin in 1965 — the first synthesis of a bioactive protein in the world.

Zhang was also a key figure in the development of a Chinese-character laser phototypesetting system. He consistently supported the project from 1976 to 1985, when a prototype was developed. This system quickly entered the market and revolutionized the Chinese printing industry. The Founder Group was founded based on this technology, which yielded enormous social and economic benefits.

Reforming China's higher education

Zhang devoted much of his life to reforming China's higher education. In the 1960s, he participated in formulating policies that put China's postgraduate education on the right track. This greatly promoted the healthy development of postgraduate education in China.

When Zhang became president of PKU in 1981, only five years after the end of the chaotic Cultural Revolution, he reinforced solidarity and stability in the university, boosted its policy of opening up by strengthening connections with other world-famous universities, and steadily implemented various reforms. He used a loan from the World Bank to accelerate the construction of teaching and research laboratories as well as rapidly improve experimental facilities and teaching quality at PKU. Zhang's pioneering work also included establishing a course credit system and the Academic Degrees Committee and starting a series of new majors and a PhD degree conferring ceremony. By the time he retired from the post of president of PKU, the university had made great strides in education, research, faculty development and logistics.

Zhang was not given to pursuing wealth or fame. A venerable mentor for PKU and an invaluable advocate for biochemistry in China, he was committed to education and research until the end of his life. Inheriting Zhang's spirit, we are striving to make PKU a global first-class university.

PEKING UNIVERSITY SCHOOL OF LIFE SCIENCE

The predecessor of today's School of Life Sciences at PKU was the Department of Biology, which was founded in 1925, making it one of the earliest biology departments in China. A great number of outstanding scholars started their careers here and later exerted great influence in research and education in China and worldwide. Since 1952, approximately 8,600 undergraduates and 2,800 graduate students have been educated and trained at the school. It currently has two National Key Laboratories, one Key Laboratory of the Chinese Ministry of Education, five National Key Disciplines and eight doctoral programs. Of the 74 principal investigators, 5 are members of the Chinese Academy of Sciences, 3 are members of the US National Academy of Sciences, 11 are Cheung Kong Scholars, 16 have been granted National Natural Science Foundation Funds for Distinguished Young Scholars, and 6 and 12 are Thousand Talent Plan and Thousand Young Talent Plan scholars, respectively. According to the 2016 QS World University Rankings, the School of Life Sciences at PKU is ranked 48th in life science — the only Chinese institution in the world's top 50 for this field. The School is committed to creating an intellectually stimulating environment, encouraging innovative scientific research and educating qualified citizens, scholars and leaders for China and the world.

Contact: http://www.bio.pku.edu.cn/

Advertiser retains sole responsibility for content