

In memory of Professor Tungsheng Liu

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Tungsheng Liu, a former member of the PAGES SSC (1991 – 1995), died on 6 March 2008 in Beijing at the age of 91. His passing is a great loss to the PAGES community but his contributions will be remembered by all who study past global changes. Tungsheng was instrumental in the initiation and implementation of the PAGES Pole-Equator-Pole (PEP) projects, and was a co-leader of PEP II. One major component of the project was the extraction of paleoenvironmental information from the loess deposits in northern China.

It was in the spectacular Loess Plateau that his wisdom, scientific insight and vision were fully manifested. With over half a century of tireless and energetic endeavor, Tungsheng and his colleagues magically turned the successions of dust deposits on the apparently fragmented land into one of the biggest books on the history of Earth's environment. The widely accumulated loess deposit, with thicknesses of up to a few hundred meters, was a blessing of nature and its origin was hotly debated. From the 1950s, Tungsheng led numerous expeditions to the Loess Plateau. The unprecedentedly large volume of field and laboratory data, published in three monographs in 1960s, allowed him to demonstrate convincingly that loess was laid down by wind, which had changed over time. This opened an entirely new chapter in the study of past climate change in China. From the 1980s, Tungsheng led a number of major research projects that aimed to probe the pulses of past climate. These led to a series of new discoveries on the climatic history of East Asia on both glacial-interglacial and millennial scales, as evidenced in numerous publications in international journals. Hence, by the 1990s, the dust sequence in China was recognized as one of the three most important sources of past environmental information, alongside deep-sea sediments and polar ice sheets.

Two important contributions that Tungsheng made to the paleoscience community were the promotion of international collaboration and the training of new generations of scientists. With his support and encouragement, numerous scientific collaborations across many fields of past global change research, between China and other countries, were established. Many young scientists who interacted with him during the past decades



Tungsheng Liu, a grand pioneer of loess paleoclimatology and a former member of the PAGES Scientific Steering Committee, will be greatly missed by the paleoscience community.

are now becoming important players in PAGES activities. Tungsheng was also a strong advocate for interdisciplinary collaboration and the study of human impact on the environment. He was a "scientific magnet" and made an immense effort to bring together scientists from a wide range of scientific fields, with interests spanning many timescales.

Tungsheng was probably the most internationally renowned Chinese Earth scientist of our time. He was elected as Vice President (1982-1991), and then President (1991-1995) of INQUA. His distinguished career also brought him many prestigious awards. In 2002, he was a Laureate of the Tyler Prize for Environmental Achievement, the premier award for "environmental science, energy and medicine conferring great benefit upon mankind". He won

China's Supreme State Science and Technology Award in 2003. He was the EGU Alexander von Humboldt Medallist in 2007. He was a member of the Chinese Academy of Sciences and the Third World Academy of Sciences, and held Honorary Doctorates from the Australian National University and Lingnan University.

Tungsheng was one of the world's greatest geoscientists. He has left with us a solid foundation for a multidisciplinary approach to tackling issues related to past global change, and his pioneering work will allow us to continue our journey towards better understanding of the role of dust in climate change. We are greatly saddened by Tungsheng's passing but his spirit will live on as a source of inspiration for paleoscience.

