Acta Crystallographica Section D
Biological Crystallography
ISSN 0907-4449

Get-Phases Beijing 2005

Xiao-Dong Su[a] and Tom Terwilliger[b]

[a]National Laboratory of Protein Engineering and Plant Genetic Engineering, Department of Biochemistry and Molecular Biology, College of Life Sciences, Peking University, Beijing 100871, People's Republic of China, and [b]Mailstop M888, Bioscience Division, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA

The International Workshop on Recent Advances in Phasing Methods for High-throughput Protein Structure Determination, in short, Get-Phases Beijing 2005, was held in the College of Life Sciences, Peking University from 30 October to 3 November 2005. This was the first international workshop on phasing methods to be held in China.

X-ray crystallography of biological macromolecules and complexes has been a rapidly developing field in recent years both in China and worldwide. Obtaining good phases is the key step in high-throughput protein structure determination. This workshop focused on all aspects of measuring and calculating phases for solving a protein structure. Additionally it provided a unique opportunity for crystallographers and students to interact with experts inside and outside China in the field of phasing methods. A wide variety of aspects of phasing were represented, including instrumentation, experimental strategies, algorithms and software developments.

Many prominent crystallographers and structural biologists attended the workshop and gave speeches on their phase determination methods and on protein structures they had determined. These speakers include: Paul Adams (USA), Gerard Bricogne (UK), Axel Brunger (USA), Zbigniew Dauter (USA), Kay Diederichs (Germany), Eleanor Dodson (UK), Thomas Earnest (USA), Chris Jacobsen (USA), Jules Hendrix (Germany), David Langs (USA), Anders Liljas (Sweden), Wladek Minor (USA), Poul Nissen (Denmark), Randy Read (UK), Tom Terwilliger (USA), B. C. Wang (USA), Nobuhisa Watanabe (Japan), Honglinag Xu (USA), Xinhua Ji (USA), Cheng Yang (USA), Jiaxing Yao (UK), Ruiming Xu (USA), Quan Hao (USA), Jianping Ding (China), Haifu Fan (China), Zihe Rao (China), Xiao-Dong Su (China) and Yuhui Dong (China). In addition to the speakers, over 120 people attended the workshop, including experts and graduate students from Australia, England, France, Canada, USA, Germany, Korea, India, Japan and China.

The topics of the Get-Phases workshop included the following scientific sessions: instrumentation for synchrotron radiation and in-house X-ray sources, methods for data collection and processing, SAD/MAD phasing and related algorithms, software developments and structural genomics, and big/difficult structures in general. Experts gave full introductions and descriptions of the newly developed methods in biological macromolecular crystallography and the most advanced results or developments in the hot fields of structural biology.

In addition to the excellent speeches, the workshop allowed most of the participants to attend three half-day practical sessions, which was the first time in China that such 'do-it-yourself' practical sessions had been held in the field of structural biology. These practical sessions enthused and engaged the imagination of many young students from China and other countries. During these sessions, participants could not only learn how to run different software under the guidance of experts (most of them being the authors of the software), but they also had a chance to process and phase their own data sets on the spot. We understand that more than five structures have been solved by participants as a direct result of this workshop; all rather difficult structures that had puzzled those participants for some time. The number of participants in the practical sessions was beyond our expectation and the participants were all quite excited and studious, some of them even worked until late into the night. Many of the students told us that as it was such a rare opportunity they would not like to miss a minute of the practical sessions. Most of our students hope that such a workshop or conference can be held again in China in the near future.

Finally, we would like to acknowledge the many people and organizations who have supported us financially and spiritually, they include people in the College of Life

Sciences, Peking University; CCrS (Chinese Crystallography Society); NSFC (National Natural Science Foundation of China); MOST (Ministry of Science and Technology of China); BSRF-CAS (Beijing Synchrotron Radiation Facilities, Chinese Academy of Sciences); ISGO (International Structural Genomics Organization); IUCr (International Union of Crystallography); and CCP4 (Collaborative Computational Project, Number 4), and companies including Beckman-Coulter, GE, Rigaku/MSC, mar research, Bruker-AXS, Douglas Instruments and Oxford Diffraction Ltd. We would also like to thank the workshop secretariat: Dr Yu-He Liang, Miss Jie Nan and Mr Erik Broströmer for their great efforts in the preparation and organization of the meeting.