



# The 10<sup>th</sup> Lecture Series by Academicians from the Chinese Academy of Sciences (CAS)

Jointly Organized by  
School of Life Sciences and  
Office of Academic Links (China)

- Speaker:** Prof. CAO Xiaofeng  
Division of Life Sciences and Medicine  
Chinese Academy of Sciences  
中國科學院生命科學和醫學部曹曉風院士
- Title:** Dynamic Histone Methylation in Higher Plants
- Date:** Wednesday, 22 February 2017
- Time:** 15:30
- Venue:** Room 706, Mong Man Wai Building
- Registration:** [http://www.cuhk.edu.hk/oalc/cas\\_2017/](http://www.cuhk.edu.hk/oalc/cas_2017/)



### Biography

Dr. Xiaofeng Cao is a Professor of Institute of Genetics and Developmental Biology, Chinese Academy of Sciences. She is a co-director of the Centre of Excellence for Plant and Microbial Science (CEPAMS), jointly established by the Chinese Academy of Sciences (CAS) and John Innes Centre (JIC, UK). Dr. Cao obtained her BSc and MSc degree in Biochemistry from Peking University in 1988 and China Agricultural University in 1991, respectively. She received her PhD in Molecular Biology from Peking University in 1997. During her postdoctoral training, she worked with Dr. John Rogers at the Institute of Biological Chemistry, Washington State University and subsequently worked with Prof. Steve Jacobsen at UCLA, where she initiated her studies on plant epigenetics. In 2003, Dr. Cao was awarded “Young Talented Investigator Award” in China and took up a professorship at the Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Beijing. The Cao lab uses rice and Arabidopsis as models to investigate the epigenetic control of plant development, genome stability and stress response, particularly plant adaptation to low or high temperature. Dr. Cao has received many awards including “China Young Female Scientists Awards, 2010”, “National Outstanding Scientist Awards, 2010” and “DuPont Young Professor Award, 2008”. She is an editor for several leading journals including “The Plant Cell” and “Current Opinion in Plant Biology”, and is Associate Editor-in-Chief for “Science China Life Sciences”. She was elected a member (Academician) of Chinese Academy of Sciences in 2015, a member of the Academy of Sciences for the Developing World (TWAS) in 2016.

### Dynamic Histone Methylation in Higher Plants

Transcription activity of chromatin is regulated by covalent modifications on nucleosomes and DNA. Recent efforts have identified a lot of chromatin modifiers, which play important roles in various aspects of biological processes. These chromatin modifiers normally bind a subset of specific genomic loci. Discovering the mechanisms of recruiting these modifiers is essential for understanding the biological function of them. We previously identified Arabidopsis JMJ14 and JMJ12/REF6 as H3K4 and H3K27-specific histone demethylase, which use two distinct mechanisms to their genome-wide targets. The C-terminal FYR domain of JMJ14 interacts with a pair of NAC domain containing transcription factors, which bring JMJ14 to their common target genes; whereas REF6 recognizes its target loci by direct recognizing specific DNA sequence through its tandem C2H2-Zinc finger domains.