

# 2019 GU XIAOCHENG LECTURE

## 顾孝诚讲座

The 2019 GU XIAOCHENG LECTURE is awarded to Dr. Guang-hui Liu of Institute of Zoology, Chinese Academy of Sciences.

The Gu Xiaocheng lecture award was established by the Gu Xiaocheng Memorial Fund in 2012. The lectureship recognizes young investigators showing promises to become future leaders in life science research, especially those who work in China.



Dr. Guang-hui Liu received his Ph.D. from Institute of Biophysics, Chinese Academy of Sciences, China in 2007. He did postdoctoral research in The Scripps Research Institute (2007-2009) and Salk Institute for Biological Studies (2009-2012) in USA. Under the National 1000 Young Talents Program, Dr. Liu became a member of Institute of Biophysics, Chinese Academy of Sciences, in 2012. He recently moved his laboratory to Institute of Zoology, Chinese Academy of Sciences.

In his study of aging mechanism, Dr. Liu first discovered that SIRT6 forms a complex with both nuclear factor erythroid 2-related factor 2 (NRF2) and RNA polymerase II. This complex could transactivate NRF2-regulated antioxidant genes. This activation may induce overexpression of HO-1 in SIRT6-null human mesenchymal stem cells to rescue premature cellular attrition. Furthermore, a SIRT6-null cynomolgus monkey (*Macaca fascicularis*) model was created by using a CRISPR-Cas9-based approach. SIRT6 deficiency led to histone hyperacetylation at the imprinting control region of H19, which results in CTCF recruitment and upregulation of H19. This may suggest that SIRT6 functions are related to human perinatal lethality syndrome. In another study, Dr. Liu found that DiGeorge syndrome critical region 8 (DGCR8) is important in maintaining heterochromatin organization and attenuating aging. Overexpression of DGCR8 alleviated mouse osteoarthritis, which points to a potential drug target for osteoarthritis.

Dr. Liu is recognized for his original contributions to the understanding of molecular mechanisms of stem cell aging, and stem cell based gene therapy. His work is fundamental to the future development of translational medicine for aging related diseases. He has come on stage as a new leader in the field of aging research.

Dr. Liu will present his latest work in the 11<sup>th</sup> Ray Wu Symposium at School of Life Sciences, Xiamen University, on November 2, 2019.