Abstracts of papers presented
at the 2025 Cold Spring Harbor Asia Conference

THE REPETITIVE AND MOBILE GENOME

April 7–April 11, 2025

Arranged by

Gael Cristofari, *Institute for Research on Cancer and Aging*
Xiaohua Shen, *Tsinghua University*
Mikiko Siomi, *The University of Tokyo*
Zhao Zhang, *Duke University*

Cold Spring Harbor Conferences Asia
Cold Spring Harbor Laboratory

THE REPETITIVE AND MOBILE GENOME
Monday, April 7 – Friday, April 11, 2025

Monday	7:00 pm	**1** Keynote Session
Tuesday	9:00 am	**2** Silencing and Epigenetic Control
Tuesday	2:00 pm	**Poster Session**
Tuesday	3:00 pm	*Chinese Tea and Beer Tasting*
Tuesday	7:00 pm	**3** Domestication and Adaptation
Wednesday	9:00 am	**4** Molecular Regulation and Impacts
Wednesday	1:30 pm	*Visit to Old Suzhou**
Wednesday	7:00 pm	**5** Molecular Mechanism and Consequence
Thursday	9:00 am	**6** Aging, Cancer, Disease, and Therapeutics
Thursday	2:00 pm	**7** Physiological Consequences
Thursday	5:00 pm	*Cocktails and Banquet*
Friday	9:00 am	**8** Evolution, Development, and Innovation

Oral presentation sessions are located in the CSHA Auditorium
Poster session and Chinese Tea & Beer Tasting are in the Lake Front Hall.
Cocktail social hour is held outside in the Suz Garden.
Old Suzhou visits depart from the CSHA lobby
**optional tour requires additional fee.*

Meal locations and times are as follows:
Lunch: Main Cafeteria 12:00pm - 1:30pm
Dinner: Main Cafeteria 6:00pm - 7:30pm
Banquet: Suz Garden 6:00pm

More information will be available at CSHA office.
(Map at the end of this abstract book)

PROGRAM

MONDAY, April 7—7:00 PM

SESSION 1 KEYNOTE SESSION

Chairperson: **Gael Cristofari,** Institute for Research on Cancer and Aging, Nice, France

TUESDAY, April 8—9:00 AM

SESSION 2 SILENCING AND EPIGENETIC CONTROL

Chairperson: **Sungjin Moon,** Kangwon National University, Chuncheon, Korea

TUESDAY, April 8—2:00 PM

POSTER SESSION

TUESDAY, April 8—3:00 PM

Chinese Tea and Beer Tasting

SESSION 3 DOMESTICATION AND ADAPTATION

Chairperson: **Jie Cui,** Fudan University, Shanghai, China

SESSION 4 MOLECULAR REGULATION AND IMPACTS

Chairperson: **Zhengyu Liang,** Southern University of Science and Technology, Shenzhen, China

Co-evolution of transposable elements and host silencing in the gigantic genomes of salamanders
Jie Wang, Jiaxing Tang, Guangpu Zhang, Shuai Tan, Mueller L. Rachel [10'+5']
Presenter affiliation: Chengdu Institute of Biology, CAS, Chengdu, China. 45

WEDNESDAY, April 9—1:30 PM

Visit to Old Suzhou

WEDNESDAY, April 9—7:00 PM

SESSION 5 MOLECULAR MECHANISM AND CONSEQUENCE

Chairperson: **Yang Zhao,** Zhejiang University, Hangzhou, China

Transposons, a selfish friend in mammalian preimplantation development
Lin He [20'+10']
Presenter affiliation: UC-Berkeley, Berkeley, California. 46

Molecular determinants of LINE-1 retrotransposon targeting in human genomes
Gael Cristofari [20'+10']
Presenter affiliation: University Cote d'Azur, INSERM, CNRS, Nice, France. 47

Unraveling the role of HERV-H in Parkinson's disease pathogenesis
Hin-Man Tai, Vidya P. Nair, Henyuan Liu, Lucas C. Gomes, Paul Lingor, Dmitrij Frishman, Michelle Vincendeau [10'+5']
Presenter affiliation: Helmholtz Centre Munich, Munich, Germany. 48

Transcriptomic landscape of transposable elements reveals *LTR7-PLAAT4* as a novel oncogene and potential therapeutic targets in PAAD
Meilong Shi, Chuanqi Teng, Shan Zhang, Xiaobo He, Lingyun Xu, Ganjun Yu, Jingwen Liu, Yanfeng Wu, Yan Ren, Gang Jin, Jing Li [10'+5']
Presenter affiliation: Second Military Medical University, Shanghai, China. 49

THURSDAY, April 10—9:00 AM

SESSION 6 AGING, CANCER, DISEASE AND THERAPEUTICS

Chairperson: **Jing Li,** Second Military Medical University, Shanghai, China

Novel role of LINE-1 ORF1p in masking viral mimicry in pancreatic cancer
Siyu Sun, Eunae You, Jungeui Hong, David Hoyos, Isabella Del Priore, Kaloyan M. Tsanov, Om Mattagajasingh, Hua Jiang, Samira Hozeifi, Daniel Zenklusen, John LaCava, Scott W. Lowe, David T. Ting, Christine A. Iacobuzio-Donahue, Alexander Solovyov, Benjamin D. Greenbaum [10'+5']
Presenter affiliation: Memorial Sloan Kettering Cancer Center, New York, New York. 55

Break

Targeted detection of endogenous LINE-1 proteins and ORF2p interactions
Mathias I. Nielsen, Peter C. Fridy, Michael P. Rout, John LaCava [20'+10']
Presenter affiliation: The Rockefeller University, New York, New York. 56

Lightning CAR-T cells produced by an optimized DNA transposon system demonstrate significant antitumor effects against hematologic and solid tumors
Chengyi Song, Pingjing Zhang [10'+5']
Presenter affiliation: Yangzhou University, Yangzhou, China. 57

The expression of transposable elements in Parkinson's disease
Raquel Garza, Anita Adami, Oliver Tam, Talitha Forcier, Annabel Curle, Diahann Atacho, Annelies Quaegebeur, Joanne Jones, Agnete Kirkeby, Roger Barker, Molly G. Hammel, Johan Jakobsson [10'+5']
Presenter affiliation: Lund University, Lund, Sweden. 58

Amplification editing enables efficient and precise duplication of DNA from short sequence to megabase and chromosomal scale
Hao Yin [10'+5']
Presenter affiliation: Wuhan University, Wuhan, China. 59

SESSION 7 PHYSIOLOGICAL CONSEQUENCES

Chairperson: **Fu Yang,** Wuhan University, Wuhan, China

Linking silencing of endogenous retroviruses to brain innate immune cell plasticity and senescence
Xin Yan, Christina Georgopoulou, Hang-Mao Lee, Jenny Russ, Ala Ahrari, Vijay Chandrasekar, Tim Ducksch, Giuliano Crispatzu, Miriam Stork, Emma-Dorotea Zanfi, Manon Chevallot-Beroux, Paolo Salomoni [10'+5']
Presenter affiliation: German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany. 66

THURSDAY, April 10—5:00 PM

COCKTAILS and BANQUET

FRIDAY, April 11—9:00 AM

SESSION 8 EVOLUTION, DEVELOPMENT AND INNOVATION

Chairperson: **Xiao-Ou Zhang,** Tongji University, Shanghai, China

Evolution of KoRV—A transcriptional silencing in wild koalas
Tianxiong Yu, Michaela B J. Blyton, Milky Abajorga, Birgit S. Koppetsch, Samantha Ho, Bo Xu, Zhongren Hu, Jeremy Luban, Keith Chappell, Zhiping Weng, William E. Theurkauf [20'+10']
Presenter affiliation: University of Massachusetts Chan Medical School, Worcester, Washington. 67

The epigenetic regulation of transposon activity in embryonic development and pluripotency transition
Shaorong Gao [20'+10']
Presenter affiliation: Tongji University, Shanghai, China. 68

Evolution of transposable elements and their impact on genomic and phenotypic diversity
Jinfeng Chen [10'+5']
Presenter affiliation: The State Key Laboratory of Integrated Management of Pest Insects and Rodents, Beijing, China. 69