Abstracts of papers presented
at the 2026 Cold Spring Harbor Asia Conference

GENOME EDITING: ALL THINGS CONSIDERED

November 9–November 13, 2026

Arranged by

Jens Boch, *Leibniz University Hannover*
Sidi Chen, *Yale University School of Medicine*
Virginijus Šikšnys, *Vilnius University*
Haoyi Wang, *Institute of Zoology, Chinese Academy of Sciences*
Wensheng Wei, *Peking University*

Cold Spring Harbor Conferences Asia
Cold Spring Harbor Laboratory

GENOME EDITING: ALL THINGS CONSIDERED
Monday, November 9 – Friday, November 13, 2026

Monday	7:00 pm	*Welcome Reception*
Tuesday	9:00 am	**1** High-Throughput Screening and Target Discovery
Tuesday	2:00 pm	**Poster Session**
Tuesday	7:00 pm	**2** Mechanistic Studies Related to Genome Editing
Wednesday	9:00 am	**3** Therapeutic Application
Wednesday	2:00 pm	*Visit to Old Suzhou**
Thursday	9:00 am	**4** New Developments in Genome Editing: Methods and Tools
Thursday	2:00 pm	**5** All Things Considered
Thursday	5:00 pm	*Cocktails and Banquet*
Friday		*Departure*

Oral presentation sessions are located in the CSHA Auditorium
Poster session is 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 12:00am - 1:30pm
Dinner: Main Cafeteria 6:00pm - 7:30pm
Banquet: Suz Garden 6:00 pm

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

PROGRAM

MONDAY, November 9—7:00 PM

Welcome Reception

TUESDAY, November 10—9:00 AM

SESSION 1 HIGH-THROUGHPUT SCREENING AND TARGET DISCOVERY

Chairperson: **Haoyi Wang,** Institute of Zoology, Chinese Academy of Sciences, Beijing, China

Genome editing and precision medicine
Hyongbum Henry H. Kim. [20'+5']
Presenter affiliation: Yonsei University, Seoul, South Korea. 1

Programming the cure—Gene editing for precision therapeutics
Wensheng Wei. [20'+5']
Presenter affiliation: Peking University, Beijing, China; Peking University Genome Editing Research Center, Beijing, China. 2

Randall Platt. [20'+5']
Presenter affiliation: ETH Zürich, Zürich, Switzerland.

Break

High-throughput screening at single-base resolution decodes functional sites in the human genome
Xuran Niu, Wei Tang, Yongshuo Liu, Binrui Mo, Ying Yu, Ying Liu, Wensheng Wei. [15'+5']
Presenter affiliation: Peking University, Biomedical Pioneering Innovation Center, Peking-Tsinghua Center for Life Sciences, Beijing, China. 3

A CRISPR/Cas9 safe-harbor knock-in platform for building TGF-β/SMAD reporter cell lines for high-throughput inhibitor screening
Alesya G. Bykonya, Svetlana D. Zvereva, Dmitry Y. Guschin, Lubov V. Krylova, Andrey V. Zvyagin. [15'+5']
Presenter affiliation: Sirius University, Sirius Federal Territory, Russia. 4

High-throughput discovery and design of cell-surface display elements for mammalian cell engineering
Joshua Saskin, Zhenhao Fang, Seok-Hoon Lee, Charles Zou, Shan Xin, Sidi Chen. [15'+5']
Presenter affiliation: Yale School of Medicine, New Haven, Connecticut; Yale University, New Haven, Connecticut. 5

TUESDAY, November 10—2:00 PM

POSTER SESSION

A Cas12a-based multiplex genome editing platform to model mosaic loss of Y chromosome in macrophages
Hao-Chun Chang, Marit Hjorth, Maito Suo, Jacob George, Saeed Esmaili.
Presenter affiliation: The Westmead Institute for Medical Research, Sydney, Australia. 6

Discovery and engineering of avian R2 retrotransposons for all-RNA-mediated targeted DNA integration in human cells
Yangcan Chen, Yanping Hu, Shengqiu Luo, Bangwei Mao, Na Tang, Xinchen Wang, Yuze Wang, Haoyi Wang, Qi Zhou, Wei Li.
Presenter affiliation: Institute of Zoology, Chinese Academy of Sciences, Beijing, China. 7

Deep mutagenesis engineering unlocks hypercompact TnpB-ωRNA systems for high-efficiency and broad-spectrum in vivo genome editing
Jinqi Shi, Ruochen Guo, Chunlong Xu, Zhifang Li.
Presenter affiliation: Lingang Laboratory, Shanghai, China. 8

Specific and efficient RNA A-to-I editing through cleavage of an ADAR inhibitor
Guangye Li, Jia Chen
Presenter affiliation: ShanghaiTech University, Shanghai, China 9

Mapping the functional code of Cas13 HEPN domains for AI-guided RNA editor design
Guanglin Zhu, Xiaomeng Guo, Guo Li.
Presenter affiliation: Xianghu Laboratory, Hangzhou, China. 10

Discovery of nucleic acid-binding proteins via protein language model prediction and automated high-throughput screening
Kaihang Li, Wen Sun, Haoyi Wang.
Presenter affiliation: University of Chinese Academy of Sciences, Beijing, China. 11

Accelerating knock-in engineering with an AI-designed CasN platform and automated workflow
Rex Li, Longfei Yang, Wenjuan Hao.
Presenter affiliation: Upper Biotechnology Ltd., Shanghai, China. 12

Prime editor-based high-throughput screening reveals functional synonymous mutations in human cells
Xuran Niu, Wei Tang, Yongshuo Liu, Binrui Mo, Ying Yu, Ying Liu, Wensheng Wei.
Presenter affiliation: Peking University, Biomedical Pioneering Innovation Center, Peking-Tsinghua Center for Life Sciences, Beijing, China. 13

Non-uniform silencing of barcoded transgene concatemers in mouse embryonic stem cells
Anastasia Ryzhkova, Alexander Smirnov, Anastasia Yunusova, Polina Belokopytova, Artem Nurislamov, Pavel Salnikov, Nariman Battulin.
Presenter affiliation: Institute of Cytology and Genetics, Novosibirsk, Russia. 14

Coordinated protein and donor RNA engineering for R2-mediated genome integration
Joshua Saskin, Seok-Hoon Lee, Xiaoyu Huang, Daniel Park, Sidi Chen.
Presenter affiliation: Yale University, New Haven, Connecticut. 15

Evolution of //SpCas9// directed by CRISPR-induced targeted random insertion and deletion mutagenesis
Meng Wang, Rui-Rui Jiang, Chun-Yi Yang, Si-Cheng Liu, Yi-Li Feng, An-Yong Xie.
Presenter affiliation: Zhejiang University School of Medicine, Hangzhou, China. 16

TUESDAY, November 10—7:00 PM

SESSION 2 MECHANISTIC STUDIES RELATED TO GENOME EDITING

Chairperson: **Jens Boch,** Leibniz University, Hannover, Germany

Novel TnpB-based compact genome editing tools
Virginijus Sikšnys, Gytis Druteika, Tautvydas Karvelis. [20'+5']
Presenter affiliation: Vilnius University, Vilnius, Lithuania. 17

Antiviral immunity via telomerase-like reverse transcription
Samuel H. Sternberg. [20'+5']
Presenter affiliation: Columbia University, New York, New York. 18

tRNA cleavage marks the end but also the beginning of CRISPR immunity
Chase L. Beisel. [20'+5']
Presenter affiliation: Botnar Institute of Immune Engineering, Basel, Switzerland. 19

Leveraging RNA-targeting mechanisms for genome editing applications
Chengtao Xu, Tao Qi, Ailong Ke. [20'+5']
Presenter affiliation: Yale University, New Haven, Connecticut. 20

Versatile and stable genome editing toolkit for clinical bacterial pathogens
Ming Li, Chao Liu. [20'+5']
Presenter affiliation: Institute of Microbiology, CAS, Beijing, China. 21

Precise DNA base editing using AlphaFold3-based contact modelling
Haowei Meng, Zhixin Lei, Yongchang Yan, Liren Wang, Sihan Zhang, Xichen Rao, Chuyun Shao, Xiaoting Zhang, Ke Chen, Lei Yang, Rongrong Liu, Gaohui Yang, Ruoyu Shen, Ruichu Gu, Xinyan Wang, Yiya Wang, Suiru Lu, Zhicong Lv, Bo He, Han Wen, Dali Li, Chengqi Yi. [20'+5']
Presenter affiliation: Peking University, Beijing, China. 22

WEDNESDAY, November 11—9:00 AM

SESSION 3 THERAPEUTIC APPLICATION

Chairperson: **Wensheng Wei,** Peking University, Beijing, China

Gene editing for, of and as immunotherapy
Sidi Chen. [20'+5']
Presenter affiliation: Yale University, New Haven, Connecticut. 23

Expanding the dimensions of CRISPR—Epigenetic, cellular, and spatial RNA control
Lei Stanley Qi. [20'+5']
Presenter affiliation: Stanford University, Stanford, California. 24

The development and application of new base editing technologies
Jia Chen. [20'+5']
Presenter affiliation: ShanghaiTech University, Shanghai, China. 25

Break

Isogenic CRISPR-Cas9 correction of ALK R1275Q restores an expanded immature sympathoadrenal progenitor state in patient-derived iPSCs
Mingzhi Liu, Panagiotis Alkinoos Polychronopoulos, Yiming Xia, Ann-Sophie Oppelt, Ana Marin Navarro, Tzu-Po Chuang, Veronica Zubillaga, Huaitao Cheng, Qirong Lin, Lola Boutin, Mercè Baulenas-Farrés, Jinhye Ryu, Leilei Zhou, Hugo Metzger, Martin Enge, Daniel Bexell, John Inge Johnsen, Oscar C. Bedoya-Reina, Ruth Palmer, Per Kogner, Anna Falk, Margareta Wilhelm. [15'+5']
Presenter affiliation: Karolinska Institutet, Stockholm, Sweden. 26

RNA-triggered chromatin shredding for disease treatment
Jingkun Zeng, Jennifer Doudna. [15'+5']
Presenter affiliation: Peking University, Beijing, China. 27

Multiplexed genome engineering for cancer immunology and immunotherapy
Liqun Zhou, Paul Renauer, Kaiyuan Tang, Shanshan Li, Zhicheng Luo, Yanzhi Feng, Shawn Lin, Feifei Zhang, Daniel Park, Luojia Yang, Lei Peng, Markus Müschen, Xiaoyu Zhou, Sidi Chen. [15'+5']
Presenter affiliation: Yale University, New Haven, Connecticut. 28

Engineering γδTCR with chimeric antibody receptor for universal T cell therapy
Ping Ren, Shan Xin, Meizhu Bai, Chuanpeng Dong, Kazushi Suzuki, Yanzhi Feng, Feifei Zhang, Sidi Chen. [15'+5']
Presenter affiliation: Yale University, New Haven, Connecticut. 29

WEDNESDAY, November 11—2:00 PM

Visit to Old Suzhou

SESSION 4 NEW DEVELOPMENTS IN GENOME EDITING: METHODS AND TOOLS

Chairperson: **Sidi Chen,** Yale University School of Medicine, New Haven, Connecticut, USA

Taming toxicity of the small cytosine deaminase SsdA to build a highly efficient base editor
Patrick Blome, Paul J. Lorenz, Oliver Schulz, Jens Boch. [20'+5']
Presenter affiliation: Leibniz University Hannover, Hannover, Germany. 30

Precise gene editing in genetic diseases
Sangsu Bae. [20'+5']
Presenter affiliation: Seoul National University College of Medicine, Seoul, South Korea. 31

Prime editing for targeted insertion and RNA delivery for therapeutic genome editing
Hao Yin. [20'+5']
Presenter affiliation: Wuhan University, Wuhan, China. 32

Break

Efficient and precise programmable DNA knock-in without double strand breaks
Haifeng Wang. [20'+5']
Presenter affiliation: Tsinghua University, Beijing, China. 33

Mismatch-programmed ADARs enable precision adenine and cytosine DNA base editing
Jiayi Li, Xiaoxu Wei, Haoqing Dou, Huixian Tang, Ying Yu, Zongyi Yi, Wensheng Wei. [15'+5']
Presenter affiliation: Peking University, Beijing, China. 34

Engineering compact and efficient RNA-guided systems for programmable transcriptional activation
Yetong Sang, Lingjie Xu, Nga Man Wong, Yongfei Chang, Zhenkun Cai, Zehua Bao. [15'+5']
Presenter affiliation: Zhejiang University, Hangzhou, China. 35

CRISPR-based epigenome editing for programming embryogenesis
Ali Shariati. [15'+5']
Presenter affiliation: University of California, Santa Cruz, Santa Cruz, California. 36

SESSION 5 ALL THINGS CONSIDERED

Chairperson: **Virginijus Šikšnys,** Vilnius University, Vilnius, Lithuania

Methylation-sensitive editing by Cas9
Mitchell Roth, Yuerong Shu, Yu Zhao, Renee Hoffman, Hong Li. [20'+5']
Presenter affiliation: Van Andel Institute, Grand Rapids, Michigan. 37

PRECISE RNA trans-splicing as a therapeutic modality for genetic disease
Cian F. Schmitt-Ulms. [20'+5']
Presenter affiliation: MIT, Cambridge, Massachusetts; Beth Israel Deaconess Medical Center, Boston, Massachusetts. 38

Gene editing using large insertions
Wei Li. [20'+5']
Presenter affiliation: Institute of Zoology, Chinese Academy of Sciences, Beijing, China. 39

Break

Development of miniature epigenome editors and artificial transcription factors
Haoyi Wang. [20'+5']
Presenter affiliation: Institute of Zoology, Chinese Academy of Sciences, Beijing, China. 40

Expanding i-GONAD for floxed allele generation and base editing in mice
Masato Ohtsuka, Rico Miyagasako, Channabasavaiah B. Gurumurthy, Hiromi Miura. [15'+5']
Presenter affiliation: Tokai University, Isehara, Japan. 41

Engineered circular RNA compatible with complete nucleoside modification and rolling circle translation
Xinyue Wang, Qian Pan, Jie Yin, Haomeng Kou, Xinyuan Liao, Chi Zhang, Shengnan She, Wanjia Wang, Fei Gao, Liang Qu. [15'+5']
Presenter affiliation: Fudan University, Shanghai, China. 42

THURSDAY, November 12—5:00 PM
COCKTAILS and BANQUET

FRIDAY, November 13
Departure