Program

DAY 1, TUESDAY, OCTOBER 7, 2025

15:00–17:00 Registration

17:00–17:05 Opening Remarks: Osamu NUREKI

17:05–18:15 Plenary Lecture
Chair: Osamu NUREKI

Exploration of biological diversity ……28
Feng ZHANG
(Howard Hughes Medical Institute, USA/Broad Institute of MIT and Harvard, USA/
McGovern Institute for Brain Research, Massachusetts Institute of Technology, USA/
Department of Brain and Cognitive Sciences & Department of Biological Engineering,
Massachusetts Institute of Technology, USA)

18:30–20:00 Welcome Reception

DAY 2, WEDNESDAY, OCTOBER 8, 2025

9:00–12:00 Session A
Discovery, technology and medical application of Cas effectors
Chairs: Osamu NUREKI
Nozomu YACHIE

9:00–9:30 [A-1]
Structural and molecular mechanisms of adaptation in Cas9-encoding type II-A CRISPR-Cas systems ……30
Virginijus SIKSNYS
(Vilnius University, Lithuania)

9:30–10:00 [A-2]
Molecular mechanism and evolution of Type V CRISPR-Cas efectors ……32
Osamu NUREKI
(The University of Tokyo, Japan)

10:00–10:30 [A-3]
Generalized engineering strategy to convert IscB/Cas9s into versatile RNA-guided RNA-editors ……36
Ailong KE
(Yale University, USA)

10:30–11:00 Coffee Break

11:00–11:30 [A-4]
Optical manipulation of the genome ……38
Moritoshi SATO
(The University of Tokyo, Japan/Kanagawa Institute of Industrial Science and Technology, Japan)

11:30–12:00 [A-5]
Epigenome editing of Prader-Willi syndrome patient-derived hypothalamic organoids ……40
Hideyuki OKANO
(Keio University Regenerative Medicine Research Center, Japan)

12:00–12:15 Short Talk 1

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Satoshi N OMURA ……132
(The University of Tokyo, Japan)

12:15–14:30 Lunch after taking Group photo

14:30–17:30 Session B
Synthetic biology and genomics

Chairs: Nozomu YACHIE
Hiroshi NISHIMASU

14:30–15:00 [B-1]
Randomizing the human genome ……42
Leopold PARTS
(Wellcome Sanger institute, UK)

15:00–15:30 [B-2]
Technologies for "look-back-in-time" biology ……44
Nozomu YACHIE
(The University of British Columbia, Canada/The University of Osaka, Japan)

15:30–16:00 [B-3]
Development and applications of CRISPR-KO screening ……46
Kosuke YUSA
(Kyoto University, Japan)

16:00–16:30 Coffee Break

16:30–17:00 [B-4]
Development of New CRISPR tools for high-throughput screens and investigation of tumor-macrophage interactions ……48
Michael BASSIK
(Stanford University, USA)

17:00–17:30 [B-5]
RNA and RNP synthetic biology to program cells ……50
Hirohide SAITO
(Institute for Quantitative Biosciences, The University of Tokyo, Japan/ Center for iPS Cell Research and Application, Kyoto University, Japan)

17:30–17:45 Short Talk 2

[PS-23]
Yonggang LU ····· **113**
(The University of Osaka, Japan)

17:45–19:00 Dinner

19:00–21:00 Poster Session I (Odd Number Posters)

DAY 3, THURSDAY, OCTOBER 9, 2025

9:00–12:00 Session C
New genome engineering technologies
Chairs: Hiroshi NISHIMASU
Tomoji MASHIMO

9:00–9:30 [C-1]
Bridging biology and AI for genome design ····· **52**
Patrick HSU
(Arc Institute, USA/University of California, Berkeley, USA)

9:30–10:00 [C-2]
Structural mechanism of bridge RNA-guided recombination ····· **54**
Hiroshi NISHIMASU
(The University of Tokyo, Japan)

10:00–10:30 Coffee Break

10:30–11:00 [C-3]
TIGR-Tas: modular RNA-guided systems with nop domain-containing proteins ····· **56**
Makoto SAITO
(RIKEN, Japan)

11:00–11:30 [C-4]
A story of the development of tools for base editing and evolution ····· **58**
Keiji NISHIDA
(Kobe University, Japan)

11:30–11:45 Short Talk 3

[PS-16]
Teppei SOMA ····· **102**
(The University of Tokyo, Japan)

11:45–12:00 Short Talk 4

[PS-02]
Yuriko OSAKABE ····· **84**
(Institute of Science Tokyo, Japan)

12:00–14:00 Lunch

14:00–17:15 Session D
Applications in plants, animals, and medical research
Chairs: Tomoji MASHIMO
Tsukasa OHMORI

14:00–14:30 [D-1]
Genome editing for disease resistance and translational control in crops ····· **60**
Caixia GAO
(Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, China)

14:30–15:00 [D-2]
Genome editing technologies in mice, rats, and hamsters ····· **62**
Tomoji MASHIMO
(Institute of Medical Science, The University of Tokyo, Japan)

15:00–15:30 [D-3]
Application of genome editing technology to industrial fields ····· **64**
Takashi YAMAMOTO
(Hiroshima University, Genome Editing Innovation Center, Japan)

15:30–16:15 Coffee Break

16:15–16:45 [D-4]
Revolutionizing the treatment of organ failure ····· **66**
Wenning QIN
(eGenesis, Inc., USA)

16:45–17:15 [D-5]
Gene editing in common marmoset, a small non-human primate ····· **68**
Erika SASAKI
(Central Institute for Experimental Medicine and Life Science, Japan)

17:15–17:30 Short Talk 5

[PS-06]
Longzhu CUI ····· **90**
(Jichi Medical University, Japan)

17:30–19:00 Dinner

19:00–21:00 Poster Session II (Even Number Posters)

DAY 4, FRIDAY, OCTOBER 10, 2025

9:00–11:45 Session E

Advances in genome editing for medicine

Chairs: Tsukasa OHMORI
Osamu NUREKI

9:00–9:30 **[E-1]**
Genome editing and precision medicine ……70
Hyongbum Henry KIM
(Yonsei University College of Medicine, Korea)

9:30–10:00 **[E-2]**
Engineering compact Cas proteins for medical applications ……72
Atsushi HOSHINO
(Kyoto Prefectural University of Medicine, Japan)

10:00–10:30 **[E-3]**
Transformative Strategies in Genome Editing and Cell Therapy: From Hypoimmunogenic iPSCs to Nanoparticle-Mediated CRISPR Delivery ……74
Akitsu HOTTA
(Kyoto University, Japan)

10:30–10:45 Coffee Break

10:45–11:15 **[E-4]**
Versatile genome editing platforms for curative therapy of monogenic liver diseases ……76
Tsukasa OHMORI
(Jichi Medical University, Japan)

11:15–11:45 **[E-5]**
Epitope editing enables targeted immunotherapy of leukemia and enhances in vivo co-selection of multiplex genome-engineered hematopoietic stem cells ……78
Pietro GENOVESE
(Harvard Medical School, USA/Boston Children's Hospital, USA/ Dana-Farber Cancer Institute, USA)

11:45–11:50 Introduction of The Naito Foundation

11:50–12:00 Announcement of Award Recipients

12:00–12:10 Closing Remarks: Osamu NUREKI

12:10–13:00 Lunch

13:15 Departure of Charter Buses