

PROGRAM

(Last updated January 30)

MONDAY, FEBRUARY 5

12:00

Registration

13:45 – 14:00

Welcome and opening remarks

James. A LEVINE (*Fondation IPSEN, Paris, France*),

Orla M. SMITH (*AAAS/ Science Translational Medicine, Washington DC, USA*),

Vinay TERGAONKAR (*Institute of Molecular and Cell Biology, A*STAR*)

14:00 – 15:00

Opening Keynote Lecture

Chair: **James A. LEVINE** (*Fondation IPSEN, Paris, France*)

Carl H. JUNE (*Center for Cellular Immunotherapies, University of Pennsylvania, Philadelphia, USA*)

Engineering smarter T cells

15:00 – 15:30

Coffee Break

Session I

CRISPRs for Attack and Defense

Chair: **Vinay TERGAONKAR** (*Institute of Molecular and Cell Biology, A*STAR*)

15:30 – 16:00

Dipali G. SASHITAL (*Roy J. Carter Department of Biochemistry, Biophysics & Molecular Biology, Iowa State University, Ames, USA*)

Adaptation mechanisms in CRISPR-Cas immunity

16:00 – 16:30

Rotem SOREK (*Department of Molecular Genetics, The Weizmann Institute of Science, Rehovot, Israel*)

Beyond CRISPR: anti-phage defense in the wild

16:30 – 16:45

Short talk (*selected from posters*)

Seokjoong KIM (*ToolGen, Inc., Seoul, Korea*)

Therapeutic genome editing for Charcot-Marie-Tooth 1A

16:45 – 19:00

Reception & Poster session

TUESDAY, FEBRUARY 6

9:00 – 9:30

Registration

Session II

Advances in Genome Editing

Chair: **Valda VINSON** (*AAAS/ Science, Washington DC, USA*)

9:30 – 10:00

Nicole GAUDELLI (*Department of Chemistry and Chemical Biology, Harvard University, Cambridge, USA*)

Base editing: Genome editing without double-stranded DNA cleavage

10:00 – 10:30

Martin JINEK (*Department of Biochemistry, University of Zürich, Zurich, Switzerland*)

Structures, mechanisms and engineering of CRISPR-Cas genome editors

10:30 – 11:00

Coffee break

TUESDAY, February 6 (continued)

11:00 – 11:30

Farren ISAACS (*Department of Molecular Cellular & Developmental Biology, Yale University, New Haven, USA*)
Genome engineering technologies for programming and recoding organisms

11:30 – 12:00

Eugene YEO (*Department of Cellular and Molecular Medicine, University of California, San Diego, USA*)
RNA modulation by RNA-targeting Cas proteins

12:00 – 12:15

Short talk (*selected from posters*)
Fabrice VANDEPUT (*Oncology and Immunology BU, Research Service Division, WuXi AppTec (Shanghai) Co., Ltd., China*)
In vivo CRISPR screening to identify new immune checkpoint regulators

12:15 – 13:45

Lunch (*on site*)

Session III

CRISPRs as Discovery Tools

Chair: **Dipali G. SASHITAL** (*Roy. J. Carter Department of Biochemistry, Biophysics & Molecular Biology, Iowa State University, Ames, USA*)

13:45 – 14:15

Masahito IKAWA (*Research Institute for Microbial Diseases, Osaka University, Osaka, Japan*)
CRISPR/Cas9 mediated genome editing in mice and its application for the study of reproduction

14:15 – 14:45

Neville SANJANA (*Department of Biology, The New York Genome Center, New York, USA*)
New frontiers in functional genomics using high-throughput genome engineering

14:45 – 15:15

David BIKARD (*Eligo Bioscience & Institut Pasteur, Paris, France*)
CRISPR tools to study and fight pathogenic bacteria

15:15 – 15:45

Coffee Break

Session IV

Panel discussion
15:45 – 16:45

Scientific and Translational Challenges for Genome Editing

Chair: **Orla M. SMITH** (*AAAS/ Science Translational Medicine, Washington DC, USA*)

Moderator: **Eric N. OLSON** (*Department of Molecular Biology, University Texas Southwestern Medical Center, Dallas, USA*)

Panelists: **Paula CANNON** (*Department of Molecular Microbiology and Immunology, University of Southern California, Los Angeles, USA*), **Andrea CRISANTI** (*Department of Life Sciences, Imperial College London, London, UK*),

Farren ISAACS (*Department of Molecular Cellular & Developmental Biology, Yale University, New Haven, USA*), **Waseem QASIM** (*Cell & Gene Therapies, University of College London, London, UK*), **Neville SANJANA** (*Department of Biology, The New York Genome Center, New York, USA*)

WEDNESDAY, FEBRUARY 7**8:15 - 9:00**

Registration

Session V**Therapeutic Applications of Gene Editing**Chair: **Wanjin HONG** (*Institute of Molecular and Cell Biology, A*STAR*)**9:00 - 9:30****Suk See DE RAVIN** (*Laboratory of Host Defenses, National Institutes of Health, Bethesda, USA*)

Gene editing for primary immunodeficiencies

9:30 - 10:00**Paula CANNON** (*Department of Molecular Microbiology and Immunology, University of Southern California, Los Angeles, USA*)

Optimizing homology-directed repair of DNA breaks in hematopoietic stem cells

10:00 - 10:30**Eric N. OLSON** (*Department of Molecular Biology, University Texas Southwestern Medical Center, Dallas, USA*)

Correction of Duchenne muscular dystrophy by genome editing

10:30 - 11:00

Coffee Break

11:00 - 11:30**Waseem QASIM** (*Cell & Gene Therapies, University of College London, London, UK*)

Gene edited T cell therapies for leukaemia

11:30 - 12:00**Andrea CRISANTI** (*Department of Life Sciences, Imperial College London, London, UK*)

Editing population genetics for vector control

12:00 - 13:00**Closing Keynote Lecture**Chair: **Orla M. SMITH** (*AAAS/ Science Translational Medicine, Washington DC, USA*)**David SABATINI** (*HHMI - Department of Biology, MIT - Whitehead Institute for Biomedical Research, Cambridge, USA*)

Functional genomics to study cancer

13:00 - 13:15**Closing remarks****Wanjin HONG** (*Institute of Molecular and Cell Biology, A*STAR*)**Valda VINSON** (*AAAS/ Science, Washington DC, USA*)**13:15 - 15:30**Lunch with the Experts* (*on site*)

* A sign up sheet will be available on day one at the registration desk