

The 31th Hot Spring Harbor International Symposium
Expanding views on Systems biology and Immunology
Medical Institute of Bioregulation, Kyushu University

November 16 - November 17, 2022 on line
(10:00 – 18:00) (9:30 – 17:40)

Wednesday, November 16, 2022

10:00 - 10:05 Opening Remarks:
Yoshinori Fukui (Director of Medical Institute of Bioregulation)

Session 1: Mathematical analysis

Chair: **Mikita Suyama**

10:05-10:40 S-01 : **Alexander Hoffmann**
(University of California, Los Angeles, America)
Epigenetic remodeling by dynamic NF κ B

10:40-11:05 S-02 : **Naoki Honda** (Hiroshima University, Japan)
Multi-modal Data Integration for Predicting Spatial Transcriptome

11:05-11:30 S-03 : **Satoshi Sawai** (University of Tokyo, Japan)
Feature extraction and testing of migrating cell morphology based on
'idea-cell model'

11:30-11:45 Meet the speaker

11:45-12:50 Lunch Break

Session 2: Multi-omics analysis

Chair: **Takeshi Bamba**

12:50-13:15 S-04 : **Yuichi Wakamoto** (University of Tokyo, Japan)
Stoichiometry Conservation Global Constraints
in Cells Enable Raman-Spectroscopic Omics Profiling

13:15-13:40 S-05 : **Hiroyuki Kubota** (Kyushu University, Japan)
Trans-omic analysis revealed time-dependent regulation of obesity
progression across multiple omic layer

13:40-14:15 S-06 : **David James** (The university of Sydney, Australia)
Tracking Insulin Resistance using Integrated Multi-Omics

14:15-14:30 Meet the speaker

14:30-14:45 Break

14:45-15:50 short talk 5 people Chair: Hiroki Shibata

15:50-16:05 Break

Session 3: High depth omics analysis

Chair: **Daisuke Kohda**

16:05-16:30 S-07 : **Yusuke Ono** (Kumamoto University, Japan)
Dll4-Notch2 axis: an emerging therapeutic target for muscle wasting diseases

16:30-16:55 S-08 : **Tatsuya Takemoto** (Tokushima University, Japan)
The nephric mesenchyme lineage of intermediate mesoderm is derived from Tbx6-expressing derivatives of neuro-mesodermal progenitors via BMP-dependent Osr1 function

16:55-17:20 S-09 : **Yuta Kochi** (Tokyo Medical and Dental University, Japan)
Dissecting pathomechanisms of complex diseases through transcript isoform diversity

17:20-17:45 S-10 : **Yasuyuki Ohkawa**(Kyushu University, Japan)
Spatial multi-omics for understanding gene expression regulated by cell-cell interaction

17:45-18:00 Meet the speaker

Thursday, November 17, 2022

Session 4: Immune Responses in Health and Disease

Chair: **Yoshinori Fukui**

- 9:30- 9:55 S-11 : **Ken Ishii** (University of Tokyo, Japan)
Immuno-prophylaxis by innate and adaptive memory against infection and cancer
- 9:55-10:20 S-12 : **Yoshimasa Takahashi** (National Institute of Infectious Diseases, Japan)
Profiling of humoral immunity against SARS-CoV-2 and its variants.
- 10:20-10:55 S-13 : **Laura K. Mackay** (University of Melbourne, Australia)
Inter-organ diversity of tissue-resident lymphocytes
- 10:55-11:10 Meet the speaker
- 11:10-11:25 Break
- 11:25-12:04 short talk 3 people Chair: Minako Ito
- 12:04-13:05 Lunch Break

Session 5: Lymphocyte Activation and Immune Regulation

Chair: **Shinichiro Sawa**

- 13:05-13:30 S-14 : **Yoshihiro Baba** (Kyushu University, Japan)
B cell dysfunction in self-tolerance and autoimmune disease
- 13:30-13:55 S-15 : **Hiroyoshi Nishikawa** (National Cancer Center, Japan)
Immune-genome precision medicine targeting regulatory (Treg) T cells
- 13:55-14:30 S-16 : **Axel Kallies** (University of Melbourne, Australia)
Molecular regulation of exhausted T cell differentiation and function
- 14:30-14:45 Meet the speaker
- 14:45-15:00 Break
- 15:00-15:40 short talk 3 people Chair: Takayuki Nojima
- 15:40-15:55 Break

Session 6: **Function and Ontogeny of Innate Immune Cells**

Chair: **Atsushi Suzuki**

- 15:55-16:20 S-17 : **Takashi Satoh** (Tokyo Medical and Dental University, Japan)
Towards understanding the mechanism of fibrosis onset
- 16:20-16:45 S-18 : **Ichiro Manabe** (Chiba University, Japan)
Macrophages in cardiac homeostasis and organ crosstalk
- 16:45-17:20 S-19 : **Florent Ginhoux** (Singapore Immunology Network, Singapore)
Understanding Macrophage Heterogeneity at the Single Cell Level
- 17:20-17:35 Meet the speaker
- 17:35-17:40 Closing Remarks