Oct 11 (Wed)

14:00-14:15 Welcome Address

Masanori Hatakeyama, Shigeo Ohno and Toshiro Sato

14:15-15:39 Session 1. Cell Biology

Chair: Y. Fujita

S1-1 **Role of cellular senescence in aging and cancer: relationship with microorganisms** ..28
Eiji Hara
Department of Molecular Microbiology, Research Institute for Microbial Diseases, Osaka University, Osaka, Japan

S1-2 **Nuclear periphery as a gatekeeper of genome integrity and cancer onset** 30
Yekaterina Miroshnikova
NIDDK, National Institutes of Health, Bethesda, USA

S1-3 **Epigenetic alteration of senescent stroma cells in the cancer microenvironment** 32
Akiko Takahashi
Division of Cellular Senescence, Cancer Institute, Japanese Foundation for Cancer Research, Tokyo, Japan
Cancer Cell Communication Project, NEXT-Ganken Program, Japanese Foundation for Cancer Research, Tokyo, Japan

15:54-16:21 Session 2. Technology-1 Intravital Imaging

Chair: Y. Minami

S2 **Live imaging of intracellular signaling activity of cancer cells** 34
Hiroshi Ichise[1], Yoshinobu Konishi[2], Kenta Terai[2], and **Michiyuki Matsuda**[1,2]
[1] Laboratory of Bioimaging and Cell Signaling, Graduate School of Biostudies, Kyoto University
[2] Department of Pathology and Biology of Diseases, Graduate School of Medicine, Kyoto University

16:21-16:48 Session 3. Technology-2 Developmental Biology

Chair: Y. Minami

S3 **Expansion of ventral foregut primes enhancer landscape for organ-specific differentiation** 36
Yan Fung Wong[1], Yatendra Kumar[2], Martin Proks[1], Jose R Herrera[3], Michaela M Rothová[1], Rita S Monteiro[1], Sara Pozzi[1], Rachel E Jennings[4], Neil A Hanley[4], Wendy A Bickmore[2], Joshua M Brickman[1]
[1] Univ. of Copenhagen, NNF Center for Stem Cell Medicine (reNEW), Denmark
[2] Univ. of Edinburgh, MRC Human Genetics Unit, United Kingdom
[3] Univ. of Copenhagen, Center for Health Data Science, Denmark
[4] Univ. of Manchester, Faculty of Biology, Medicine & Health, United Kingdom

16:48-17:43 Keynote Lecture

Chair: T. Sato

K1 **Organoids to model human disease** 20
Hans Clevers
Professor in Molecular Genetics, University of Utrecht, The Netherlands

Oct 12 (Thu)

9:30-10:49 Session4. Stomach Cancer

Chair: SY. Leung

S4-1 Epigenetic heterogeneity in cancer 38

Hiroyuki Aburatani

Genome Science and Medicine Laboratory, Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo, Japan

S4-2 Genetically engineered tumor-derived organoid models to examine the metastasis mechanism of gastrointestinal cancer 40

Hiroko Oshima[1,2], Sau Yee Kok[1], Mizuho Nakayama[1,2], Yukinori Ikeda[3], Yukiko T. Matsunaga[3], **Masanobu Oshima**[1,2]

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[2] WPI-Nano Life Science Institute (NanoLSI), Kanazawa University, Japan
[3] Institute of Industrial Science, The University of Tokyo, Japan

S4-3 Escape from cell-cell and cell matrix adhesion dependence underscores disease progression in gastric cancer organoid models 42

Yin Tong[1], Priscilla SW Cheng[1], Chung Sze Or[1], Sarah SK Yue[1], Hoi Cheong Siu[1], Siu Lun Ho[1], Simon Law[2], Wai Yin Tsui[1], Dessy Chan[1], Stephanie KY Ma[3], Siu Po Lee[1], Annie SY Chan[1], April S Chan[1], Shui Wa Yun[1], Ho Sang Hui[1], Siu Tsan Yuen[1,4], Suet Yi Leung[1,5], and **Helen HN Yan**[1,6]

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[4] Department of Pathology, St. Paul's Hospital, No. 2, Eastern Hospital Road, Causeway Bay, Hong Kong SAR, China
[5] The Jockey Club Centre for Clinical Innovation and Discovery, LKS Faculty of Medicine, The University of Hong Kong, Pokfulam, Hong Kong SAR, China
[6] Centre for Oncology and Immunology, Hong Kong Science Park, Hong Kong SAR, China

11:04-11:56 Session 5. Developmental Biology/Urology

Chair: M. Morimoto

S5-1 Recapitulating ventral hindgut development in hiPSCs generates bladder organoids 44

Kazuhiro Ofuji, Filip J Wymeersch, **Minoru Takasato**

RIKEN BDR, Kobe, Japan

S5-2 Human assembloids for understanding tissue regeneration and cancer 46

Eunjee Kim[1], Kunyoo Shin[1,2]

[1] Institute of Molecular Biology and Genetics, Seoul National University, Seoul, Republic of Korea
[2] School of Biological Sciences, Seoul National University, Seoul, Republic of Korea

11:56-12:56 Luncheon Seminar 1

Chair: T. Sato

Co-Sponsored: VERITAS Corporation

LS1 In Vitro Tissue Modeling Innovations: Hepatic, Alveolar and Intestinal Organoids 118

Ryan K. Conder

STEMCELL Technologies, Vancouver, Canada
Simon Fraser University, Department of Molecular Biology and Biochemistry, Burnaby, BC V5A 1S6, Canada

12:56-13:56 Poster Session

Chair: Y. Kabe, T. Katagiri, O. Nagano and S. Ohsawa

13:56-15:52 Session 6. Airway-Lung Organoids

Chair: D. Gao

16:07-16:59 Session 7. Organoid Biobank

Chair: M. Oshima

16:59-17:45 Special Lecture 1

Chair: M. Oshima

Oct 13 (Fri)

9:30-9:40 Group Photo (All Participants)

9:40-10:42 Session 8. SU2C

Chair: C. J. Kuo

S8-1 **Harness connections between the microbiome and disease to improve human health** 60

Kenya Honda

Department of Microbiology and Immunology, Keio University School of Medicine, Tokyo, Japan
Laboratory for Gut Homeostasis, RIKEN Center for Integrative Medical Sciences (IMS), Yokohama, Japan

S8-2 **Progressive plasticity during colorectal cancer metastasis**....62

Andrew Moorman*, Francesco Cambuli, Elizabeth Benitez, Qingwen Jiang, Yubin Xie, Ahmed Mahmoud, Melissa Lumish, Saskia Hartner, Sasha Balkaran, Jonathan Bermeo, Simran Asawa, Canan Firat, Asha Saxena, Anisha Luthra, Valeria Sgambati, Kathleen Luckett, Yi Fan, Yanyun Li, Zhifan Yi, Ignas Masilionis, Kevin Soares, Emmanouil Pappou, Rona Yaeger, Peter Kingham, William Jarnagin, Philip Paty, Martin Weiser, Linas Mazutis, Michael D'Angelica, Jinru Shia, Julio Garcia-Aguilar, Tal Nawy, Travis Hollmann, Ronan Chaligné, Francisco Sanchez-Vega, Roshan Sharma, Dana Pe'er, **Karuna Ganesh**

Memorial Sloan Kettering Cancer Center

10:57-11:49 Session 9. SU2C

Chair: E. Hara

S9-1 **Modeling gut-microbiota interactions in colorectal cancer using organoid-bacteria co-cultures** 64

Cayetano Pleguezuelos-Manzano[1], Hans Clevers[1,2]

[1] Hubrecht Institute, Utrecht, The Netherlands
[2] Pharma, Research and Early Development of F. Hoffmann-La Roche Ltd, Basel, Switzerland

S9-2 **Understanding of gastrointestinal cancers using patient-derived organoids**....66

Toshiro Sato

Department of Integrative Medicine and Biochemistry, Keio University School of Medicine, Tokyo, Japan

11:49-12:49 Luncheon Seminar 2

Chair: M. Fujii

Co-Sponsored: Medical & Biological Laboratories Co., Ltd.

LS2 **Fetal-like reprogramming is the key to understand the heterogeneity of colorectal cancer** 120

Shiro Yui

Center for Stem Cell and Regenerative Medicine, Tokyo Medical and Dental University (TMDU)

12:49-13:15 Session 10. Technology-3 Chemical Biology

Chair: H. Ichijo

S10 **Development of enzyme-activatable fluorescence probes for intraoperative rapid cancer imaging** 68

Yasuteru Urano[1,2]

[1] Graduate School of Pharmaceutical Sciences, and [2] Graduate School of Medicine, The University of Tokyo, Tokyo, Japan

13:15-14:12 Session 11. Technology-4 Mathmatic Biology

Chair: H. Ichijo

14:12-15:08 Session 12. Pancreas Cancer 1

Chair: BK Koo

15:23-17:12 Session 13. Pancreas Cancer 2

Chair: T. Imai

17:22-18:02 Special Lecture 2

Chair: H. Seno

Oct 14 (Sat)

9:00-9:59 Session14. Technology-5 Gene-engineering

Chair: Y. Miroshnikova

S14-1 Acquired epithelial WNT secretion drives niche independence of developing gastric cancer 86

Isaree Teriyapirom[1,2]*, Jihoon Kim[1]*, Heetak Lee[1]*, Sebastian R. Merker[3]*, Amanda Andersson-Rolf[1], Stephan R. Jahn[3], Anne-Marlen Ada[3], Sang-Min Kim[4], Joo Yeon Lim[5], Tim Schmäche[3], Nancy Wetterling[3], Saskia Stegert[3], Ji-Yeon Park[6], Jae-Ho Cheong[5], Hyunki Kim[4], Daniel E. Stange[3,7], **Bon-Kyoung Koo**[1,8]

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[2] Vienna BioCenter PhD Program, Doctoral School of the University of Vienna and Medical University of Vienna, A-1030, Vienna Austria
[3] Department of Visceral, Thoracic and Vascular Surgery, University Hospital Carl Gustav Carus, Medical Faculty, Technische Universität Dresden, Dresden, Germany
[4] Department of Pathology, Yonsei University College of Medicine, Seoul, Republic of Korea
[5] Department of Surgery, Yonsei University College of Medicine, Seoul, Republic of Korea
[6] Gradiant Bioconvergence Inc., Seoul, Republic of Korea
[7] National Center for Tumor Diseases (NCT), Dresden, Germany: German Cancer Research Center (DKFZ), Heidelberg, Germany; Faculty of Medicine and University Hospital Carl Gustav Carus, Technische Universität Dresden, Dresden, Germany; Helmholtz-Zentrum Dres
[8] Center for Genome Engineering, Institute of Basic Sciences, Daejeon, Republic of Korea

S14-2 Tracing intestinal p57^{+} cells uncovers spatiotemporal reprogramming of regenerating epithelium and the identity of cancer stem cells 88

Tsunaki Higa, Takeru Oka, Keiichi I. Nakayama

Department of Molecular and Cellular Biology, Medical Institute of Bioregulation, Kyushu University, Fukuoka, Japan

9:59-10:24 Session 15. Breast Cancer

Chair: Y. Miroshnikova

S15 Heterogenous breast cancer stem cells sustain in primary and metastatic cancer stem cell niches 90

Noriko Gotoh

Division of Cancer Cell Biology, Cancer Research Institute, Kanazawa University, Kanazawa city, Japan

10:39-11:06 Session 16. Technology-6 Micro-engineering

Chair: K. Ganesh

S16 Microphysiological systems (MPS) with perfusable vascular network for tumor microenvironment 92

Ryuji Yokokawa

Department of Micro Engineering, Kyoto University, Kyoto, Japan

11:06-11:46 Special Lecture 3

Chair: K. Ganesh

SP3 Using organoids to model tumor and tissue microenvironments 26

Calvin J. Kuo

Department of Medicine, Stanford University School of Medicine, USA

11:46-11:56 Closing Remarks

Masanobu Oshima