

第 25 回 日本 RNA 学会年会 口頭発表

Oral Presentations of the 25th RNA Japan Meeting in TOKYO

☎ : 筆頭著者が学生会員 First author is student member

June 26th (Wed)

09:15-09:25 **Opening Remark**

Head organizer Kumiko Ui-Tei (The University of Tokyo)

09:25-12:00 **Session 1** **Transcription・Splicing・Translation** ☎ ☎

Chairpersons

Shintaro Iwasaki (RIKEN)

Shunichi Kashida (xFOREST Therapeutics)

09:25-09:30 **Overview**

09:30-09:55 **I-1 [Invited Speaker]**

DEAD-box ATPases are global regulators of phase-separated organelles and RNA flux

○Maria Hondele¹

(¹Biozentrum, University of Basel, Switzerland)

09:55-10:20 **I-2 [Invited Speaker]**

Engineering phase separations in cells to manipulate RNA condensates

○Zohar Gueroui¹

(¹Université de recherche Paris Sciences et Lettres, France)

10:20-10:30 **Coffee Break**

- 10:30-10:45 **O-01**
RNA polymerase II-mediated rDNA transcription is necessary for rDNA copy number expansion in *Drosophila*
○George J. Watase^{1,2}, Yukiko M. Yamashita^{2,3,4}
(¹Department of Germline Development, Institute of Molecular Embryology and Genetics, Kumamoto University, ²Whitehead Institute for Biomedical Research, ³Massachusetts Institute of Technology, Department of Biology, ⁴Howard Hughes Medical Institute)
- 10:45-11:00 **O-02** ☎
Elucidation of mechanism for *Mecp2* pre-mRNA alternative splicing
○Saya Oshizuki¹, So Masaki¹, Satoshi Tanaka¹, Naoyuki Kataoka¹
(¹Graduate School of Agricultural and Life Sciences, The University of Tokyo)
- 11:00-11:15 **O-03** ☎
Two transcript variants of *ews1b* define translational timings and protein localization during zebrafish development
○Keisuke Sato¹, Ludivine Fierro¹, and Tomoya Kotani^{1,2}
(¹Graduate School of Life Science, Hokkaido University, ²Faculty of Science, Hokkaido University)
- 11:15-11:30 **O-04** ☎
RIOK2 facilitates CLK1 localization to nuclear stress bodies by antagonizing PP1 for thermo-sensitive splicing regulation
○Tsuyoshi Ueno¹, Shungo Adachi², Kensuke Ninomiya³, Ichiro Taniguchi³, and Tetsuro Hirose^{1,3,4}
(¹Graduate School of Science, Osaka University, ²National Cancer Center Research Institute, ³Graduate School of FBS and ⁴OTRI, Osaka University)

11:30-11:45 **O-05**

Ribosome stalling induces RNF10 and stress response-mediated regulation of ribosomal subunit amounts

○Toru Suzuki¹, Sihan Li¹, Sota Ito¹, Momoko Narita¹, Chisato Kikuguchi¹, Miho Hoshi¹, Yoshitaka Matsuo¹, Toshifumi Inada¹

(¹Division of RNA and gene regulation, Institute of Medical Science, The University of Tokyo)

11:45-12:00 **O-06**

Girolline is a sequence context-selective modulator of eIF5A activity

○Tilman Schneider-Poetsch^{1*}, Yongjung Dang², Wakana Iwasaki³, Mayumi Arata⁴, Yuichi Shichino⁵, Ali Al Mourabit⁶, Celine Moriou⁶, Daniel Romo⁷, Jun O. Liu⁸, Takuhiro Ito³, Shintaro Iwasaki^{5,9} and Minoru Yoshida^{1,4,10,11*}

(¹Chemical Genomics Research Group, RIKEN CSRS, ²Chongqing Medical University, College of Pharmacy, China, ³Laboratory for Translation Structural Biology, RIKEN CBR, ⁴Drug Discovery Seed Compounds Exploratory Unit, RIKEN CSRS, ⁵RNA Systems Biochemistry Laboratory, RIKEN CPR, ⁶Institut de Chimie des Substances Naturelles, CNRS, France, ⁷Department of Chemistry and Biochemistry, Baylor University, USA, ⁸Department of Pharmacology and Molecular Sciences, The Johns Hopkins University School of Medicine, USA, ⁹Department of Computational Biology and Medical Sciences, The University of Tokyo, ¹⁰Office of University Professors, The University of Tokyo, ¹¹Collaborative Research Institute for Innovative Microbiology, The University of Tokyo)

12:00-13:00 **Lunch**

13:00-14:30 **Poster session 1 (Odd-Numbered Presenters)**

14:30-15:50	Session 2	RNA Structure □
	Chairpersons	Kazuki Kato (Tokyo Medical and Dental University) Norifumi Shioda (Kumamoto University)
14:30-14:35	Overview	
14:35-14:50	O-07 🏆 [2023 Aoba prize winner]	
	Structural basis for superior affinity binding of unnatural-base aptamers to Dengue antigen NS1 proteins	
	○Kazuhiro Sawada ¹ , Ryu Takayanagi ¹ , Michiko Kimoto ² , Fumiya Sano ¹ , Yutaro Shuto ¹ , Yoshiaki Kise ¹ , Ken-ichiro Matsunaga ² , Hui Pen Tan ² Ichiro Hirao ² , and Osamu Nureki ¹	
	¹ Department of Biological Sciences, Graduate School of Science, The University of Tokyo, ² Xenolis Pte. Ltd., ³ IBB A*STAR)	
14:50-15:05	O-08	
	tRNA intron and protein folding: how so close?	
	○Sachiko Hayashi ¹ , Sachiko Hayashi ¹ , Ryujiro Nakamura ² , Hitomi Kato ² , Yuichi Shichino ³ , Shintaro Iwasaki ^{3,4} , and Tohru Yoshihisa ¹	
	¹ Graduate School of Science, University of Hyogo, ² Faculty of Science, University of Hyogo, ³ Cluster for Pioneering Research, RIKEN, ⁴ Graduate School of Frontier Sciences, The University of Tokyo)	
15:05-15:20	O-09	
	Structural basis for the efficient sulfur transfer via an <i>E. coli</i> protein TusE required for tRNA 2-thiouridine formation as elucidated by solution NMR spectroscopy	
	○Yuji Tokunaga ¹ , Naoki Shigi ² , Kenjo Miyauchi ³ , Yuriko Sakaguchi ³ , Tsutomu Suzuki ³ , and Koh Takeuchi ¹	
	¹ Graduate School of Pharmaceutical Sciences, The University of Tokyo, ² AIST-Waseda University Computational Bio Big-Data Open Innovation Laboratory (CBBB-OIL), AIST, ³ Department of Chemistry and Biotechnology, Graduate School of Engineering, University of Tokyo)	

15:20-15:35 **O-10** 🌐

Mapping of the NEAT1_2 lncRNA domains that define the micelle structure and morphology of paraspeckles

○Sota Umezaki¹, Tomohiro Yamazaki¹, Hiro Takakuwa¹, and Tetsuro Hirose^{1,2}

(¹Graduate School of Frontier Bioscience, Osaka University, ²OTRI, Osaka University)

15:35-15:50 **O-11**

RNA G-quadruplexes forming scaffolds for α -synuclein aggregation lead to synucleinopathy-like neurodegeneration

○Yasushi Yabuki^{1,2}, Kazuya Matsuo¹, Norifumi Shioda^{1,2}

(¹Department of Genomic Neurology, Institute of Molecular Embryology and Genetics, The University of Kumamoto. ²School of Pharmacy, The University of Kumamoto)

15:50-16:00 **Coffee Break**

16:00-17:30 **Session 3** **RNA Modification** 🌐 🌐

Chairpersons Masatora Fukuda (Fukuoka University)

Masayuki Sakurai (Tokyo University of Science)

16:00-16:05 **Overview**

16:05-16:30 **I-3 [Invited Speaker]**

Coordinated changes of tRNA modifications for protein homeostasis

○Ya-Ming Hou¹, Yuko Nakano¹, and Howard Gamper¹

(¹Thomas Jefferson University, Philadelphia, USA)

16:30-16:45 **O-12** 🌐

Avoiding tRNA modification enables translation initiation with a quadruplet codon-anticodon interaction.

○Masahiro Muto¹, Asuteka Nagao¹, Kensuke Ishiguro¹, Takahiro Yokoyama¹, Yuriko Sakaguchi¹, Shungo Adachi², Shintaro Iwasaki³, Takeshi Yokoyama⁴, and Tsutomu Suzuki¹.

(¹Department of Chemistry and Biotechnology, The University of Tokyo, ²National Cancer Center Research Institute, ³RIKEN Cluster for Pioneering Research, ⁴Graduate School of Life Sciences, Tohoku University)

16:45-17:00 **O-13** 🌐

Elucidation of the pathogenic mechanism underlying Aicardi-Goutières syndrome-like encephalopathy caused by mutations in the RNA-editing enzyme ADAR1.

○Hyebin Yoo¹, Taisuke Nakahama^{1,2,3,4}, Yuki Kato^{1,2,3}, and Yukio Kawahara^{1,2,3,4,5}

(From the ¹Department of RNA Biology and Neuroscience, Graduate School of Frontier Biosciences and ²Graduate School of Medicine, ³Integrated Frontier Research for Medical Science Division and RNA Frontier Science Division, Institute for Open and Transdisciplinary Research Initiatives (OTRI), ⁴Center for Infectious Disease Education and Research (CiDER), and ⁵Genome Editing Research and Development Center, Graduate School of Medicine, Osaka University, Suita, Osaka, Japan)

17:00-17:15 **O-14**

Adenosine-to-inosine base editing by ADAR; new features for DNA regulation via R-loop structure.

○Masayuki Sakurai¹, Yuxi Yang¹, Mai Kubota², Eito Ichihashi².

(¹Research Institute for Biomedical Science, Tokyo University of Science, ²Graduate School of Biological Sciences, Tokyo University of Science)

- 10:30-10:55 **I-5 [Invited Speaker] [ONLINE]**
Regulation and sensing of self Z-RNA in cell death and interferon responses
○Manolis Pasparakis¹
(¹Institute for Genetics and Cologne Excellence Cluster on Ageing-Associated Diseases, University of Cologne, Cologne, Germany)
- 10:55-11:10 **O-16**
Formation of intersegment interactions in viral droplets of influenza A virus infected cells
○Naoki Takizawa¹
(¹Institute of Microbial Chemistry)
- 11:10-11:25 **O-17** 🌐
SARS-CoV-2 nsp1 binds stalled ribosomes and promotes translational stall read-through
○Malvin Leonardo Pardi^{1,2}, Wakana Iwasaki³, Mari Mito⁴, Yuichi Shichino⁴, Mio Iwasaki², Takuhiro Ito³, Shintaro Iwasaki^{4,5}, and Hirohide Saito^{1,2}
(¹Graduate School of Medicine, Kyoto University, ²Center for iPS Cell Research and Application, Kyoto University, ³RIKEN Center for Biodynamics Systems Research, ⁴RIKEN Cluster for Pioneering Research, ⁵Graduate School of Frontier Sciences, The University of Tokyo)
- 11:25-11:40 **O-18** 🌐
The RNA silencing factor, TRBP, regulates the balance of antiviral response in mammalian cells
○Keiko Shibata¹, Harune Moriizumi¹, Koji Onomoto², Yuka Kaneko¹, Mitsutoshi Yoneyama^{2,3}, Kumiko Ui-Tei^{4,5}, Tomoko Takahashi^{1,4}
(¹Graduate School of Science and engineering, Saitama University, ²Medical Mycology Research Center, Chiba University, ³Research Institute of Disaster Medicine, Chiba University, ⁴Graduate School of Science, The University of Tokyo, ⁵Graduate School of Frontier Sciences, The University of Tokyo)

- 11:40-11:55 **O-19** 🌐
Maintenance of immune homeostasis by N4bp1-mediated degradation of endogenous retroviruses RNAs
Guohao Liu¹, Yeekien Chong¹, Osamu Takeuchi¹
(¹Department of Medical Chemistry, Graduate School of Medicine, Kyoto University)
- 11:55-13:00 **Lunch**
- 13:00-14:30 **Poster session 2 (Even-Numbered Presenters)**
- 14:30-14:55 **EMBO Lecture**
Communicating research, Poster presentation
○Cornelius Schneider
(Scientific Editor, EMBO Journal)
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- 14:55-16:30 **Session 5** **Non-coding RNA** 📄 📄
Chairpersons Yuka Iwasaki (RIKEN)
Tomohiro Yamazaki (Osaka University)
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- 14:55-15:00 **Overview**
- 15:00-15:15 **O-20**
Lipid kinase PIP5K1A regulates *let-7* microRNA biogenesis through interacting with nuclear export protein XPO5
○Chun Li^{1,2}, Bohyung Yoon¹, Giovanni, Stefani¹, Frank J. Slack¹
(¹Harvard Medical School Initiative for RNA Medicine, Department of Pathology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, USA, ²Department of Molecular and Cellular Medicine, Institute of Medical Science, Tokyo Medical University, Tokyo, Japan.)

- 15:15-15:30 **O-21** 
Mitochondrial protein Daed regulates Zuc cleavage position in piRISC maturation to optimize transposon repression
○Yuica Koga¹, Shigeki Hirakata¹, Mayu Negishi¹, Hiroya Yamazaki¹, Mikiko C. Siomi¹
(¹Department of Biological Sciences, Graduate School of Science, The University of Tokyo)
- 15:30-15:45 **O-22**
Role of transcription termination in retrotransposon silencing by the Piwi-piRNA complex in *Drosophila* ovary
○Kensaku Murano, Yaning Wu, Rin Imai, Haruhiko Siomi
(Department of Molecular Biology, Keio University School of Medicine)
- 15:45-16:00 **O-23**
Competition between adjacent piRNA-producing sites autonomously shapes the repertoire and biogenesis efficiency of piRNAs
Jie Yu¹, Natsuko Izumi¹, Yukihide Tomari^{1,2}, Keisuke Shoji^{1,2,3}
(¹Institute for Quantitative Biosciences, The University of Tokyo, ² Graduate School of Frontier Sciences, The University of Tokyo, ³Graduate school of Bio-Applications and Systems Engineering, Tokyo University of Agriculture and Technology)
- 16:00-16:15 **O-24** 
Dual Mechanisms of RNase L-mediated Stress Response Regulated by RTCB Ligase Complex
○Yoshika Takenaka¹, Yasutoshi Akiyama¹, Yoshihisa Tomioka¹ and Pavel Ivanov^{2,3}
(¹Tohoku University Graduate School of Pharmaceutical Sciences, ²Brigham and Women's Hospital, Boston, USA, ³Harvard Medical School, Boston, USA)

16:15-16:30 **O-25** 🌐

Deciphering the role of HSATIII lncRNAs in nuclear stress body formation : Insights from reconstitution studies

○Yuichi Matsuda¹, Manami Kakuno¹, Shungo Adachi², Tomohiro Yamazaki³, Kensuke Ninomiya³, Tetsuro Hirose^{1,3,4}

(¹Graduate School of Science, Osaka University, ²National Cancer Center Research Institute, ³Graduate school of Frontier Biosciences, ⁴OTRI, Osaka University)

16:30-17:30 **The General Meeting of the 25th RNA Society of Japan**

June 28th (Fri)

09:15-10:35 **Session 6** **RNA Technology** 🌐 📺

Chairpersons Hirohide Saito (Kyoto University)

Josephine Galipon (Yamagata University)

09:15-09:20 **Overview**

09:20-09:35 **O-26 [2023 Aoba prize winner]**

Complexity and dynamics of *in organello* translation landscape assessed by high-resolution mitochondrial ribosome profiling

○Taisei Wakigawa^{1,2}, Mari Mito¹, Haruna Yamashiro¹, Kotaro Tomuro^{1,2}, Haruna Tani³, Kazuhito Tomizawa⁴, Takeshi Chujo⁴, Asuteka Nagao⁵, Takeo Suzuki^{5,6}, Fan-Yan Wei³, Yuichi Shichino¹, Tsutomu Suzuki⁵, and Shintaro Iwasaki^{1,2}

(¹RIKEN Cluster for Pioneering Research, ²Graduate School of Frontier Sciences, The University of Tokyo, ³Institute of Development, Aging and Cancer, Tohoku University, ⁴Faculty of Life Sciences, Kumamoto University, ⁵Graduate School of Engineering, The University of Tokyo, ⁶Graduate School of Medicine, University of the Ryukyus)

09:35-09:50 **O-27** 🌐

Local translation atlas revealed by APEX-Ribo-seq

○Kotaro Tomuro^{1,2}, Shintaro Iwasaki^{1,2}, and Yuichi Shichino¹

(¹RIKEN Cluster for Pioneering Research, ²Department of Computational Biology and Medical Sciences, Graduate School of Frontier Sciences, The University of Tokyo)

09:50-10:05 **O-28** 🌐

Unbiased multi-omics profiling of splicing factors with hireCLIP-seq

○Mina Yoshida^{1,2}, Masahiko Ajiro¹, Asuka Kawachi¹, Mayumi Hanzawa¹, Kazuki Nishimura¹, Ryoichi Maenosono¹, Takuya Izumi¹, Minori Koizumi¹, Rei Kudo¹, Natsuko Shinohara¹, Marimu Sakumoto¹, Hiroataka Matsui¹, Tomoya Muto¹, Shungo Adachi³, Atsushi Iwama², Genta Nagae⁴, Hiroki Ueda⁵, Hiroyuki Aburatani⁴, Akihide Yoshimi¹

(¹Div. Cancer RNA Research, NCCRI, ²Div. Stem Cell & Molecular Medicine, IMSUT, ³Div. Proteomics, NCCRI, ⁴Genome Science & Medicine Laboratory, RCAST, Tokyo Univ., ⁵Biological Data Science, RCAST, Tokyo Univ.)

10:05-10:20 **O-29**



ICLAMP: a novel technique to explore adenosine deamination via inosine chemical labeling and affinity molecular purification

○Yang Yuxi¹, Koki Nakayama¹, Shunpei Okada², Kazuki Sato³, Takeshi Wada³, Yuriko Sakaguchi⁴, Ayaka Murayama⁴, Tsutomu Suzuki⁴, Masayuki Sakurai¹

(¹Research Institute for Biomedical Science, Tokyo University of Science, ²Department of Microbiology, Faculty of Medicine, Shimane University, ³Department of Medicinal and Life Sciences, Faculty of Pharmaceutical Sciences, Tokyo University of Science, ⁴Department of Chemistry and Biotechnology, Graduate School of Engineering, University of Tokyo)


10:20-10:35 **O-30** 
Development of CRISPR-Cas-inspired RNA-guided proteins via click reaction and its application for live cell imaging
○Jun Nakamura¹, Miyako Shiraishi², Junpei Yamamoto², Keiichiro Suzuki^{1,2,3}
(¹Graduate School of Frontier Bioscience, Osaka University, ²Graduate School of Engineering Science, Osaka University, ³Institute for Advanced Co-Creation Studies, Osaka University)

10:35-10:45 **Coffee Break**

10:45-12:15 **Session 7** **RNA Therapeutics**  
Chairpersons Kazuki Sato (Tokyo University of Science)
Tomoko Takahashi (Saitama University)

10:45-10:50 **Overview**

10:50-11:15 **I-6 [Invited Speaker]**
Nuclear RNAi in Mammalian Cells
○David R. Corey¹
(¹Department of Pharmacology, UT Southwestern Medical Center, Dallas, USA)

11:15-11:30 **O-31** 
Improvement of siRNA target specificity with a new 2'-modified nucleoside analog
○Kohei Nomura¹, Seongjin An², Hiroataka Murase¹, Kosuke Nakamoto¹, Yasuaki Kimura¹, Naoko Abe¹, Yoshiaki Kobayashi³, Kumiko Ui-Tei^{2,3}, Jiro Kondo⁴ and Hiroshi Abe^{1,5,6}
(¹Graduate School of Science, Nagoya University, ²Graduate School of Frontier Science, ³Graduate School of Science, The University of Tokyo, ⁴Faculty of Science and Technology, Sophia University, ⁵JST CREST, ⁶iGCORE)

- 13:20-13:35 **O-35** 
Extensive Deregulation of Genes in Mouse Embryonic Germ Cells
○Peilin Li¹, Haruka Narita¹, Yuta Uneme¹, Mikiko C. Siomi¹, Soichiro Yamanaka¹
(¹Graduate School of Science, The University of Tokyo)
- 13:35-14:00 **I-7 [Invited Speaker] [ONLINE]**
RNAs in population genomics
○Qingbo S. Wang¹
(¹Calico Life Sciences LLC)
- 14:00-14:25 **I-8 [Invited Speaker]**
Black or white? A micro-RNA underlies a 100-million-year adaptive evolution in butterflies and moths
○Shen Tian¹, Yoshimasa Asano², Tirtha Das Banerjee¹, Jocelyn Liang Qi Wee¹, Abigail Lamb³, Yehan Wang¹, Suriya Narayanan Murugesan¹, Kumiko Ui-Tei^{2,4}, Patricia J. Wittkopp^{3,5}, Antónia Monteiro¹
(¹Department of Biological Sciences, National University of Singapore, ²Graduate School of Science, The University of Tokyo, ³Department of Molecular, Cellular, and Developmental Biology, University of Michigan, ⁴Graduate School of Frontier Sciences, The University of Tokyo, ⁵Department of Ecology and Evolutionary Biology, University of Michigan)
- 14:25-14:40 **O-36**
Landscape of circadian translation rhythms in plants
○Naohiro Kawamoto¹, Mari Mito¹, Sumie Ohbu², and Shintaro Iwasaki^{1,3}
(¹RIKEN Cluster for Pioneering Research, Graduate School of Science, ²RIKEN Ion Beam Breeding Group, RNC, ³School of Life Science and Technology, Tokyo Institute of Technology)

14:40-14:55 **O-37**

Translational regulation for cell type distinction and neuronal adaptation in the *Drosophila* brain

○Toshiharu Ichinose^{1,2}, Mai Kanno², Shu Kondo³, Yuichi Shichino⁴, Mari Mito⁴, Shintaro Iwasaki^{4,5}, Hiromu Tanimoto².

(¹Frontier Research Institute for Interdisciplinary Sciences, Tohoku University; ²Graduate School of Life Sciences, Tohoku University, ³Faculty of Advanced Engineering, Tokyo University of Science, ⁴RNA Systems Biochemistry Laboratory, RIKEN Cluster for Pioneering Research, ⁵Department of Computational Biology and Medical Sciences, Graduate School of Frontier Sciences, The University of Tokyo)

14:55-15:10 **O-38**

Conformational extension and aggregation suppression of TDP-43 by a heat resistant obscure (Hero) protein and a chaperone

○Andy Y.W. Lam^{1,2}, Kotaro Tsuboyama^{1,3}, Hisashi Tadakuma^{1,4} and Yukihide Tomari^{1,2}

(¹Institute for Quantitative Biosciences, The University of Tokyo, ²Graduate School of Frontier Sciences, The University of Tokyo, ³Institute of Industrial Science, the University of Tokyo, ⁴School of Life Science and Technology, Shanghai Tech University)

15:10-15:25 **O-39**

ILF3 prion-like domain regulates gene expression and fear memory under chronic stress

○Akira Yamashita^{1,2}, Yuichi Shichino¹, Kazuki Fujii^{3,4,5}, Yumie Koshidaka⁴, Mayumi Adachi⁴, Eri Sasagawa⁶, Mari Mito¹, Shinichi Nakagawa⁷, Keizo Takao^{3,4,5,6}, Shintaro Iwasaki^{1,8}, and Nobuyuki Shiina^{2,9,10}

(¹RNA Syst. Biochem. Lab., RIKEN CPR., ²Lab. of Neuronal Cell Biol., Natl. Inst. for Basic Biol., ³Dept. Behav. Physiol., Fac. of Med., Univ. of Toyama, ⁴Life Sci. Res. Ctr., Univ. of Toyama, ⁵Research Center for Idling Brain Science, Univ. of Toyama, ⁶Department of Behavioral Physiology, Grad. Sch. of Innovative Life Sci., Univ. of Toyama, ⁷RNA Biol. Lab., Fac. of Pharm. Sci., Hokkaido Univ., ⁸Dept. of Comp. Biol. and Med. Sci., Grad. Sch. of Front. Sci., Univ. of Tokyo, ⁹Expl. Res. Ctr. on Life and Living Syst. (ExCELLS), Natl. Inst. of Nat. Sci., ¹⁰Dept. of Basic Biol., SOKENDAI)

15:30-15:50 **Awards Ceremony**

15:50-15:55 **Closing Remark**

Head organizer Kumiko Ui-Tei (The University of Tokyo)