

# Program

## DAY 1, TUESDAY, OCTOBER 1, 2024

15:00–17:00 Registration

17:00–17:05 Opening Remarks: Yasuo MORI

17:05–18:45 Plenary Lecturers

Chair: Yasuo MORI

17:05–17:55 [PL1]

**Making an effort to listen: mechanical amplification by hair cells of the inner ear** .....30

Albert James HUDSPETH  
(The Rockefeller University, USA)

17:55–18:45 [PL2]

**Roles of TRP channels and opsins in controlling behavior of *Aedes aegypti*** .....34

Craig MONTELL  
(University of California, Santa Barbara, USA)

18:55–20:30 Welcome Reception

## DAY 2, WEDNESDAY, OCTOBER 2, 2024

8:30–11:30 Session A

**Circuitry**

Chair: Ikue MORI

8:30–9:00 [A-1]

**Glial control of circadian rhythms** .....38

Marco BRANCACCIO  
(Imperial College London, UK)

9:00–9:30 [A-2]

**Deciphering principles of molecular and circuit mechanisms underlying animal behavior** .....40

Ikue MORI  
(Nagoya University, Japan/Chinese Institute for Brain Research, China)

9:30–10:00 [A-3]

**Brain circuit mechanisms for body temperature regulation and metabolic homeostasis** .....42

Kazuhiro NAKAMURA  
(Nagoya University Graduate School of Medicine, Japan)

10:00–10:30 Coffee Break

10:30–11:00 [A-4]	<b>Structure and function of thermosensitive TRP channels</b> .....	46
	<u>Makoto TOMINAGA</u> (Nagoya City University, Japan)	
11:00–11:30 [A-5]	<b>Deciphering where and how touch happens</b> .....	50
	<u>Miriam GOODMAN</u> (Stanford University, USA)	
<b>11:30–12:26</b>	<b>Short Talk Session I</b>	
	Chair: Kaoru SUGIMURA	
11:30–11:38 [PS-47]	<u>Mayumi OKAMOTO</u> .....	177
	(Nara Women's University)	
11:38–11:46 [PS-27]	<u>Shunji NAKANO</u> .....	144
	(Nagoya University)	
11:46–11:54 [PS-09]	<u>Hajime FUKUI</u> .....	120
	(Tokushima University)	
11:54–12:02 [PS-61]	<u>Keiji NARUSE</u> .....	198
	(Okayama University)	
12:02–12:10 [PS-23]	<u>Yuika UEDA</u> .....	139
	(Osaka University)	
12:10–12:18 [PS-21]	<u>Tomoya ITO</u> .....	135
	(Queen Mary University of London)	
12:18–12:26 [PS-31]	<u>Yuri KATO</u> .....	151
	(Kyushu University)	
<b>12:40–14:30</b>	<b>Lunch after taking Group photo</b>	
<b>14:30–18:00</b>	<b>Session B</b>	
	<b>Contractility</b>	
	Chair: Motohiro NISHIDA	
14:30–15:00 [B-1]	<b>Quantitative analysis of cell surface tension and cytoplasmic fluidity in cytokinesis and dormancy by live-cell imaging</b> .....	52
	<u>Kazuhiro AOKI</u> (Kyoto University, Japan/NIBB/ExCELLS, NINS, Japan)	
15:00–15:30 [B-2]	<b>Force and power in protein folding</b> .....	54
	<u>Julio M. FERNANDEZ</u> (Department of Biological Sciences, Columbia University, USA)	

- 15:30–16:00 [B-3]**  
**The non-textbook heart: structure, electrics, mechanics** .....56  
 Peter KOHL  
 (Institute for Experimental Cardiovascular Medicine, University Heart Center, Freiburg University, Germany/Department of Physiology, Anatomy & Genetics, University of Oxford, UK)
- 16:00–16:30 Coffee Break**
- 16:30–17:00 [B-4]**  
**Contractility in brain morphogenesis** .....58  
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 (Nagoya University Graduate School of Medicine, Japan)
- 17:00–17:30 [B-5]**  
**Cardiac robustness regulated by the crosstalk between myocardial contractility and sulfur/redox metabolism** .....62  
 Motohiro NISHIDA  
 (Kyushu University, Japan)
- 17:30–18:00 [B-6]**  
**Bottom-up mechanobiology: from cell sheets to organoids** .....64  
 Xavier TREPAT  
 (Institute for Bioengineering of Catalonia, Spain)

**18:00–19:30 Dinner**

**19:30–21:30 Poster Session I (Odd Number Posters)**

**DAY 3, THURSDAY, OCTOBER 3, 2024**

- 8:30–11:30 Session C**  
**Stress**  
 Chair: Hidenori ICHIJO
- 8:30–9:00 [C-1]**  
**Insights into activation of the unfolded protein response from studies of IRE1b, a specialised isoform specific to mucin-producing cells** .....66  
 David RON  
 (University of Cambridge, UK)
- 9:00–9:30 [C-2]**  
**ASK family kinases in mechanical stress signaling** .....68  
 Hidenori ICHIJO  
 (Tokyo Medical and Dental University, Japan)
- 9:30–10:00 [C-3]**  
**Mechanisms of centriole duplication and its theoretical model** ...70  
 Daiju KITAGAWA  
 (The University of Tokyo, Japan)

10:00–10:30 Coffee Break

10:30–11:00 [C-4]

**Two parabrachial Cck neurons involved in the feedback control of thirst or salt appetite** .....72

Masaharu NODA

(Tokyo Institute of Technology, Japan)

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**Exercise-mimicking vertically oscillating head motion lowers blood pressure by accelerating interstitial fluid movement in the brain in hypertensive rats and humans** .....76

Yasuhiro SAWADA

(National Rehabilitation Center for Persons with Disabilities, Japan)

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Chair: Kazuhiro AOKI

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**12:40–14:30 Lunch**

**14:30–18:00 Session D****Mechanosensation**

Chair: Hiroshi HIBINO

**14:30–15:00 [D-1]****Role of mechanosensitive ion channels during myofiber regeneration** .....80Yuji HARA

(University of Shizuoka, Japan)

**15:00–15:30 [D-2]****Physiological analyses of unique elements that support mechanosensation in the cochlea of mammalian inner ear** .....82Hiroshi HIBINO

(Osaka University, Japan)

**15:30–16:00 [D-3]****Pulling, pushing or stretching for sensory mechanotransduction?** .....84Gary Richard LEWIN

(Max-Delbruck Center for Molecular Medicine, Germany)

**16:00–16:30 Coffee Break****16:30–17:00 [D-4]****Image-based inference for epithelial mechanics** .....86Kaoru SUGIMURA

(The University of Tokyo, Japan)

**17:00–17:30 [D-5]****Transducing - and shielding - mechanical signals from integrins to the nucleus** .....88Pere ROCA-CUSACHS

(Institute for Bioengineering of Catalonia, Spain)

**17:30–18:00 [D-6]****Physical nuclear remodeling in early mouse embryogenesis** .....90Yuta SHIMAMOTO

(National Institute of Genetics, Japan/SOKENDAI, Japan)

**18:00–19:30 Dinner****19:30–21:30 Poster Session II (Even Number Posters)**

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**DAY 4, FRIDAY, OCTOBER 4, 2024**

**8:30–11:30 Session E  
Redox**

Chair: Yasuo MORI

**8:30–9:00 [E-1]**  
**Metabolism and redox signal regulation by supersulfides** .....92  
Takaaki AKAIKE  
(Tohoku University Graduate School of Medicine, Japan)

**9:00–9:30 [E-2]**  
**Polymodal gating of the proton channel OTO1** .....94  
Emily LIMAN  
(University of Southern California, USA)

**9:30–10:00 [E-3]**  
**Mitochondrial acute oxygen sensing and signaling** .....96  
José LÓPEZ-BARNEO  
(Universidad de Sevilla, Spain)

**10:00–10:30 Coffee Break**

**10:30–11:00 [E-4]**  
**TRPA1 channel is critical in O<sub>2</sub> sensors** .....100  
Yasuo MORI  
(Kyoto University, Japan)

**11:00–11:30 [E-5]**  
**Electrochemical coupling and biological function of voltage sensor domain proteins** .....102  
Yasushi OKAMURA  
(Osaka University Graduate School of Medicine, Japan)

**11:30–11:35 Information of Naito Grants**

**11:35–11:45 Announcement of Award Recipients**

**11:45–11:55 Closing Remarks:** Yasuo MORI

**11:55–13:00 Lunch**