**The 20th Sapporo Symposium on Biological Rhythm in 2022**

(The 10th Anniversary Meeting of the newly established foundation)

Aug 12 (Fri) at Keio Plaza Hotel Sapporo

13:00 Opening Address: **Ken-ichi Honma**

13:05 Awarding Lecture (online)

**Amita Sehgal** (University of Pennsylvania, Philadelphia, USA)

From clock genes to circadian physiology and disease

14:00 Laudatory Address: **Johanna Meijer**

14:15 Memorial Symposium: Circadian Rhythm and Sleep

Chairpersons: **R. Silver, Y. Shigeyoshi**

**Kazuhiko Kume** (Nagoya City University, Nagoya, JPN)

Distinct dopaminergic pathways converge and regulate arousal in the central complex of *Drosophila*

**Arisa Hirano** (University of Tsukuba, Tsukuba, JPN)

Molecular and neuronal mechanism underlying the orexinergic signaling in regulation of sleep-wake behavior

**Hiroki Ueda** (University of Tokyo, Tokyo, JPN)

Systems biology of mammalian sleep/wake cycles: phosphorylation hypothesis of sleep

**Johanna Meijer** (Leiden University Medical School, Leiden, The Netherlands)

Principles of photic entrainment in nocturnal and diurnal rodents

17:00 Memorial Lecture

Chairperson : **Takashi Yoshimura**

**Carl Johnson** (Vanderbilt University, Nashville, USA)

Scintilla of Circadian Evolution

Aug 13 (Sat) at International Conference of Hokkaido University

09:00 – 12:00 Symposium (1): Circadian Clock and External Periodicities

Chairpersons: **S. Yasuo, H. Oster**

**Ralph Mistlberger** (Dimon Fraser University, Burnaby, Canada)

　 The organization of a circadian timekeeping system for prediction mealtimes

**Megumi Hatori** (Nagoya University, Nagoya, JPN)

Effects of time-restricted eating on the energy metabolism in mice and non-human primates

**Yujiro Yamanaka** (Hokkaido University, Sapporo, JPN)

Restricted meal schedule prevents free-running of sleep-wale cycle but not circadian pacemaker in humans

**Wataru Nakamura** (Nagasaki University, Nagasaki, JPN)

A functional analysis of circadian pacemakers in *Per*-lessmice

12:00-13:30: Lunchon Poster

13:30 – 14:30: Plenary lecture (1)

Chairperson: **S. Honma**

**Martha Merrow** (LMU, Munich, Germany)

Reflections on principle and properties of circadian clocks

14:30 – 17:30 Symposium (2): Circadian Clock and Functions

Chairpersons: **A. Hirano, R. Mistlberger**

**Henrik Oster** (University of Lubeck, Lubeck, Germany)

Circadian clocks and food intake – there and back again

**Naohiro Kon** (Nagoya University, Nagoya, JPN)

Roles of Ca2+ signaling in molecular clocks

**Tsuyoshi Hirota** (Nagoya University, Nagoya, JPN)

Regulation of mammalian Cryptochrome with small molecule compounds from i*n vitro* to *in vivo*

**Kazuhiro Yagita** (Kyoto Prefectural University of Medicine, Kyouto, JPN)

Rhythm switching and emergence of the circadian time order in mammals

18:30 – 21:00: Get-together Party at Keio-Plaza Hotel Sapporo

Aug. 14 (Sun) at International Conference of Hokkaido University

09:00 – 12:00 Symposium (3): Mechanisms of Circadian Clock

Chairpersons: **M. Hatori, K. Kume**

**Michael Hastings** (Medical Research Council Laboratory of Molecular Biology, Cambridge, UK)

Molecular genetics of the role of Cryptochromes in the circadian clock of the suprachiasmatic nucleus (Online)

**Hikari Yoshitane** (Tokyo Metropolitan Institute of Medical Science, Tokyo, JPN)

Circadian quartz: Implication for protein oscillator in mammalian circadian clockwork

**Sinobu Yasuo** (Kyushu University, Fukuoka, JPN)

Internal desynchrony in mice under social jetlag-like condition

**Masao Doi** (Kyoto University, Kyoto)

Circadian intracrine activity governs age-associated meibomian gland dysfunction and evaporative dry eye disease

12:00 – 13:30: Lunchon Poster

13:30 – 14:30: Plenary lecture (2)

　Chairperson: **Kondo Takao**

**Ken-ichi Honma** (Hokkaido University, Sapporo, JPN)

A decade of the Aschoff and Honma Memorial Foundation

14:30 – 17:30: Symposium (4): SCN Structure and Functions

Chairperson: **J. Meijer, Y. Fukada**

**Rae Silver** (Barnard College of Columbia University, New York, USA)

Vascular and neuroendocrine aspects of SCN structure and function

**Yasufumi Shigeyoshi** (Kindai University, Osaka, JPN)

Small regional oscillators in the suprachiasmatic nucleus, the machinery to obtain adaptation to the environmental light changes

**Michihiro Mieda** (Kanazawa University, Kanazawa, JPN)

Critical roles of AVP neurons in the control circadian clock of the SCN network

**Sato Honma** (Sapporo Hanazono Hospital, Sapporo, JPN)

　 Multi-oscillator system in the suprachiasmatic nucleus: Democracy vs. autocracy for the stability and adaptability of the circadian pacemaker

17:45 Closing Remark: **Ken-ichi Honma**