The 18th Sapporo Symposium on Biological Rhythm

August 14, 2021

Abstracts

On line Conference

Zoom Meeting

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Aschoff and Honma Memorial Foundation

Sapporo Japan

Greeting from the chair

Ken-ichi Honma
President of the Aschoff and Honma Memorial Foundation

Welcome to the 18th Sapporo Symposium on Biological Rhythm (SSBR) in 2021. I am happy to tell you that we were able to organize the awarding lecture and memorial symposium in this time and show them worldwide on line. The symposium should have been held in 2020, one year back. But because of the pandemic of Covid-19, we had to postpone the symposium. However, the pandemic is not yet subsided and we should again postpone the large part of symposium to 2022. Since the 2nd SSBR, the symposium was highlighted by the awarding of Aschoff and Honma Prize for Biological Rhythm Research and the winner's lecture. The prize winner this year is Dr. Takashi Yoshimura in the Institute of Transformative Bio-Molecules (WPI-ITbM), Graduate School of Bioagricultural Sciences, Nagoya University. He has been contributing to our understanding of the mechanism of seasonality in physiology and behavior of animals. This time, 16 scientists were nominated and the international selection committee (Carl Johnson, chair) recommended the top two to the council of AHM foundation. The council was unanimous for Dr. Yoshimura.

The topic of the memorial symposium is usually determined in accordance with the winner's research area, namely seasonality. Four speakers are invited. Dr. Tomoko Yoshikawa will focus on the coupling of E and M oscillators which are involved in the seasonal changes in activity time of mice. Dr. Motomu Endo will report the molecular mechanism of photoperiodic induction of flowering in *Arabidopsis*. Dr. Yoshifumi Yamaguchi will talk about the hibernation of hamster and the mechanism of resistance to col by the liver. Finally, Dr. Barbara Helm will show us how the migratory bird recognizes the complex environment and organizes multiple rhythms in the body. I do hope you enjoy the symposium which may have an impact upon your research.

Program

August 14 (Sat) 2021

Aschoff and Honma Prize for Biological Rhythm Research

Awarding (online)

13:30 Awarding Address by Ken-ichi Honma (President of AHM Foundation)

13:15 Winner's Lecture

Takashi Yoshimura (Professor of Nagoya University)

'Towards understanding molecular mechanisms of infradian rhythms'

14:15

Laudation by Yoshitaka Fukada (President of JSC)

Memorial Symposium 'Circadian Clock and Seasonality' (online)

Chairpersons:

Shizufumi Ebihara (Professor emeritus, Nagoya University)

Sato Honma (Chief Director of Sleep Center, Sapporo Hanazono Hospital)

14:30 Tomoko Yoshikawa (Organization for International Education and Exchange, University of Toyama)

CaMKIIα is involved in the coupling of the evening and morning circadian oscillators in mice

15:15 Motomu Endo (Nara Institute of Science and Technology)

Time to update the external coincidence model in *Arabidopsis*

16:00 Intermission

16:10 Yoshifumi Yamaguchi (Hokkaido University Institute of Low Temperature Science)

Diet- and hibernation season- dependent enhancement of hepatic cold resistance in a mammalian hibernator Syrian hamster

16:55 Barbara Helm (Groningen Institute for Evolutionary Life Sciences, University of Groningen, Netherlands)

Organizing complex seasonality: bird migration gives clues

17: 45 Closing Address by Dr. Ken-ichi Honma

The Prize Winner in 2020 — Dr. Takashi Yoshimura

Dr. Takashi Yoshimura was born in 1970 at Shige, Japan. He graduated from Nagoya University Faculty of Agriculture in 1993 and took his Ph.D. degree in 1996 at Nagoya University Graduate School of Agricultural Science (supervisor, Professor Shizufumi Ebihara). The title of his Ph.D. thesis was 'Studies on the mammalian circadian photoreceptors'. In 2005 he became Associate Professor at Nagoya University and in 2008 promoted to Professor and the Director of Avian Bioscience Research Center. In 2013, he became Professor at the Institute of Transformative Bio-Molecules (WPI-ITbM) and Graduate School of Bioagricultural Sciences, Nagoya University.

He started his scientific carrier with studies of the circadian photosensitivity in retinally degenerate mice (J Comp Physiol, 1996) and extended it to the molecular analysis of avian circadian clock genes (Mol Brain Res, 2000). Meanwhile, he discovered the suprachiasmatic nucleus in birds (Am J Physiol, 2001). Of most important, he found the light-induced hormone conversion of T_4 to T_3 critical for the photoperiodic response of gonads in birds (Nature, 2003) and thyrotropin in the pars tuberalis a factor triggering photoperiodic response (Nature, 2008). He also fund that a photoreceptor opsin is located in a deep brain in birds (PNAS, 2010) and that the saccus vasculosus of fish is a sensor of seasonal changes in day length (Nat Comm, 2013). More recently, Dr. Yoshimura discovered that the seasonal changes in color perception of Japanese Medaka fish were regulated by dynamic plasticity in phototransduction (Nat Comm, 2017) and that self-protecting behaviors of the fish during breeding were modulated by IncRNA *LDAIR* (Nat Ecol Evol, 2019). Thus, Dr. Yoshimura has greatly contributed to our understandings of seasonality in the animal kingdom.