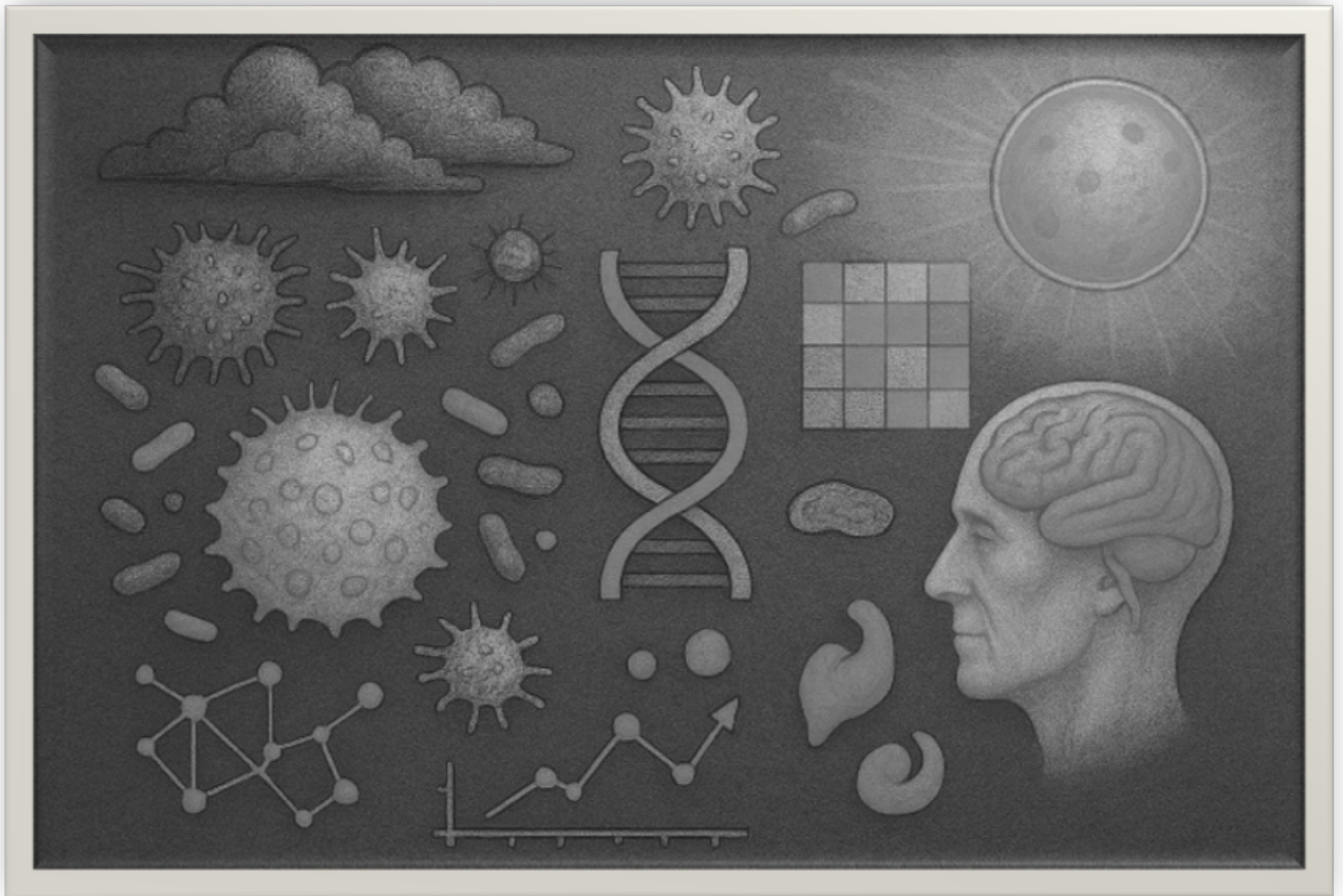


# 第166回 東北大学加齢医学研究所 集談会



**日時: 令和8年7月10日 (金) 15:00～**

**July 10th, 2026, 15:00～**

**International Conference Room, Center for Smart-Aging  
Research, 1F, (IDAC)**

**共催: 東北大学加齢医学研究所**

**Institute of Development, Aging and Cancer,  
Tohoku University**

**東北大学加齢医学研究所研究会同窓会**

**Society of Institute of Development, Aging and Cancer, Tohoku  
University**

## 東北大学加齢医学研究所集談会に関するガイドライン

### 【趣旨】

定期開催される東北大学加齢医学研究所集談会(以下、「集談会」という)において、加齢医学研究所同窓会メンバー(以下、メンバーという。)向けに、所属研究者等の日頃の成果を発表いただいておりますが、その中にはメンバー向けのため、公知となっていない研究データ等を発表いただける場合もございます。

ご存じのとおり、研究者のマナーとしまして、不用意に口外しないことを前提に発表いただいておりますが、昨今、ウェブ等で開催することもあり、URLをご存じの方は、メンバー以外でもご参会いただけるため、発表者に不利益が生じないよう、守秘義務を講じて開催いただきますようお願いいたします。

注意事項「本集談会を聴講するにあたり、同会において提供又は開示され、若しくは同発表会を通じて知得した一切の情報について秘密に保持すること。

但し、聴講を受ける前に公知であったこと又は自ら正当に保有していたことを証明できる情報、若しくは聴講を受けた後、貴学が公開したことを証明できる情報についてはこの限りではないものとします。」

### AGENDA

- 15:00-15:05 Opening remarks [Kozo Tanaka]
- 15:05-15:10 Introduction [Shimpei Kawamoto]
- 15:10-15:40 Presentation 1 [Shimpei Kawamoto]
- 15:40-15:50 Break
- 15:50-16:20 Presentation 2 [Shinpei Kawaoka]
- 16:20-16:30 Break
- 16:30-17:00 Presentation 3 [Akiko Satoh]
- 17:00-17:05 Closing remarks [Fan-Yan Wei]

集談会終了後、17:15 から園遊会をスマート・エイジング研究棟 1階で開催いたします。

We will have a reception party at SA, 1F from 17:15. Join us!

**Presentation 1 [Chairs: Keishi Soga, Haruna Tani]**

**Mechanisms of Aging: The Interactions of the Microbiome, Immunity, and Cellular Senescence**

Shimpei Kawamoto

Department of Aging Biology, IDAC, Tohoku University

Throughout my career, driven by the desire to "extend healthy life expectancy through diet," I have consistently investigated the symbiotic mechanisms between the host and gut microbiota. While these studies have demonstrated that gut microbes play an indispensable role in maintaining our health, I have also uncovered a novel aspect: the gut microbiota, which should inherently coexist in a symbiotic relationship, can instead act as a critical environmental factor that accelerates aging through the immune system and cellular senescence.

Aging is not merely a uniform phenomenon that progresses simply with chronological age. It is a multifaceted process driven by the complex overlap of various factors, exhibiting significant individual variations, yet its fundamental mechanisms remain fully elucidated. I believe that the key to untangling a part of this complex phenomenon lies in the tripartite interaction among the microbiome, the immune system, and cellular senescence—fields that have been the core of my expertise.

Currently, my research aims to uncover the full picture of how these three factors interact to drive organismal aging. Specifically, I am investigating the precise mechanisms by which the microbiome, including gut bacteria, induces immunosenescence and cellular senescence, ultimately leading to systemic aging.

By proposing these research findings as novel intervention points for aging control, I hope to contribute to extending healthy life expectancy, an urgent challenge in our super-aging society. Building upon the creative spirit of inquiry I learned from my former mentors, I am committed to further advancing my research toward both uncovering the fundamental principles of aging and its implementation in society.

**Presentation 2 [Chairs: Mayuko Yoda, Ringo Sugawara]**

**Decoding Human Biology through Integrated Multi-Omics and Large-Scale Data Analysis**

Shinpei Kawaoka

Department of Integrative Bioanalytics, Institute of Development, Aging and Cancer, Tohoku University

Why does cancer induce systemic dysfunction? How are daily stress, aging, and environmental factors biologically interconnected? What physiological impact does digital device usage have on the human body? Our laboratory seeks to address these questions by integrating experimental biology with large-scale data analysis. Recent technological advances have made it possible to comprehensively measure genomes, transcriptomes, metabolites, immune states, and diverse clinical or behavioral information at unprecedented resolution. While these innovations have dramatically expanded data availability, extracting biologically meaningful insights from such complex datasets remains a major challenge. In particular, integrating information across different biological layers—from molecular profiles to systemic phenotypes and human behavior—requires new analytical and experimental frameworks. Our laboratory aims to build a seamless platform that unifies experimental design, high-throughput measurement, and computational analysis to generate interpretable and actionable biological knowledge. In this presentation, I will introduce our recent studies on cancer-associated systemic dysfunction, stress-related biological responses, and human multi-omics, and discuss future directions for understanding human health and disease through integrative, data-driven biology.

**Presentation 3 [Chairs: Shogo Tsuji, Chunlin Liu]**

**An Integrative Understanding of Mechanisms of Aging/lifespan Control Driven by Hypothalamic Aging**

Akiko Satoh

Department of Integrative Physiology, IDAC, Tohoku University

As we age, the brain undergoes functional decline, a process known as “brain aging.” Recent studies suggest that brain aging is not only a consequence of aging itself, but may also play a determining role in lifespan. We aim to deepen our understanding of brain aging at the molecular to tissue levels and to elucidate the role of the brain, particularly the hypothalamus, in regulating aging and lifespan in mammals. Our laboratory currently tries to address the following aims: 1) identification of a novel neuronal population in the hypothalamus that may control mammalian longevity through sleep regulation and elucidation of its mechanisms, 2) elucidation of reversible and irreversible molecular mechanisms of brain aging, 3) exploration of neurons and neuronal circuits, which are responsible for the effects of dietary/nutritional interventions in mammalian lifespan extension, and 4) investigation of age-associated changes in functional brain networks and their physiological significance. Through these efforts, we hope to contribute to a rapidly aging society by enabling people to live longer, healthier lives.