

## **Special Session: Early human disease screening studies using hypothesis-driven and data-driven approaches**

### Organizer:

Emi Yuda (Tohoku Univ.)

Hiroharu Kawanaka (Mie Univ.)

Takumi Kitajima (Mie Univ.)

Session Chair: Emi Yuda (Tohoku Univ., Japan)

Anticipated Number of Papers: 4

### Session Abstract:

This session will discuss the latest research focused on early human disease screening using a combination of hypothesis-driven and data-driven approaches. In the hypothesis-driven approach, we will discuss early screening methods, with a focus on autonomic nervous system diseases, based on existing medical and health science knowledge and hypotheses. On the other hand, in the data-driven approach, large datasets are analyzed using machine learning and other methods to extract disease features and patterns. By integrating these approaches, we will find more effective early disease screening methods by complementing information. In this session, examples of specific diseases, types of data used, analysis methods, and results obtained will be discussed. The effectiveness and practicality of the proposed screening methods will be evaluated, and potential future applications will also be discussed. This study will provide valuable information for researchers, clinicians, and health care providers seeking approaches for preventive medicine.