THE GIS
SPEAKER SERIES

Genome Institute of Singapore
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Dissecting Molecular and Cellular Basis of Mammalian Aging at the Whole-Organism Scale

Dr. Junyue Cao

Assistant Professor, The Rockefeller University

Host: WAN Yue

Monday 14 July 2025
2.00pm – 3.00pm

GIS L2 – Seminar Room
60 Biopolis Street, Genome, Singapore 138672

About The Speaker

Dr. Junyue Cao received his Ph.D. from University of Washington in 2019. In August 2020, he started his independent lab as an Assistant Professor and Head of the Laboratory for Single Cell Genomics at The Rockefeller University. His lab focus on investigating how a cell population in our body maintains homeostasis and how it is disrupted in aging through developing novel single-cell and spatial genomic techniques. Dr. Cao has been awarded the NIH Director's New Innovator Award, William Ackman and Neri Oxman Innovator Award, Sagol Network GerOmic Award for Junior Faculty, MRA Young Investigator Award, Science & SciLifeLab Grand Prize for Young Scientists, the Verne Chapman Young Scientist Award, and Irma T. Hirschl/Monique Weill-Caulier Trust Research Award, and Hevolution/AFAR Young Investigator Award.

About The Seminar

As we age, certain cell types within the diverse cellular landscape of various organs undergo significant changes. These alterations not only affect the overall function of the organism but also play a critical role in the development of age-related diseases. Mapping these vulnerable cell types is essential for understanding the cellular basis of aging-related pathologies and for identifying potential interventions. Despite recent breakthroughs in high-throughput technologies, accurately quantifying complex biological systems and establishing causal relationships at a cellular level is still a daunting task. In this presentation, Dr. Cao will introduce 1) the development of high-throughput single-cell temporal and spatial genomic approaches to mapping aging-associated vulnerable cell types at the whole organismal scale; 2) the utilization of targeted and systematic perturbation tools to dissect the functional role of the various systems in aging and pinpoint the molecular and cellular drivers regulating the dynamics of aging-associated cell types.