



Department of Psychology
The University of Hong Kong

香港大學心理學系

Departmental Seminar

Development of Functional and Structural Connectivity during Youth

11:00a.m. – 12:00noon | April 24, 2025 (Thursday)

Rm 1103 & 1104, 11/F, The Jockey Club Tower | Centennial Campus | The University of Hong Kong



Dr. Zaixu Cui

Principal Investigator

Chinese Institute for Brain Research, Beijing

Abstract

The human cerebral cortex is organized into functionally segregated yet synchronized regions, interconnected by the structural connectivity of white matter pathways. Understanding the spatial variation in the development of functional and structural connectivity across the human connectome can reveal which connectomes are most susceptible to plasticity and influenced by various factors at specific developmental stages. In this talk, I will introduce our two recent studies. The first examines the spatial organization of individual variability in functional connectivity across the human connectome, its developmental trajectory in youth, and its association with higher-order cognition. The second investigates how the maturation of white matter structural connectivity varies across the human connectome during youth. Our findings suggest that both functional and structural connectivity maturation follows a progressing axis across the connectome. These results highlight the importance of considering connectome-wide spatial variation in connectivity development and its relevance to cognitive maturation.

About the Speaker

Zaixu Cui, Principal Investigator at the Chinese Institute for Brain Research, Beijing. His research focuses on the organizational principles of structural and functional brain networks and their typical and atypical developmental trajectories during youth. As the first or corresponding author, he has published studies in Neuron, PNAS, Nature Communications, Biological Psychiatry, and eLife. He developed the PANDA diffusion MRI processing software, which has been downloaded over 20,000 times. Dr. Cui is a recipient of the National Overseas Young Talent Program, Beijing Nova Program, and the Association for Psychological Science (APS) Rising Star Award. He leads the Youth Scientist Project under the National Science and Technology Innovation 2030—Brain Science Initiative and holds an NSFC General Program Grant. Lab website: <http://cuilab.cibr.ac.cn/>

Zoom Meeting (For participants who couldn't attend the Seminar in person)

<https://hku.zoom.us/j/6985555998?pwd=V05yTGJWNTlzaZd2OFZ0Q3FReHVkdz09>

Meeting ID: 698 555 5998 | Password: Psyc

~All are Welcome~

Enquiry: fancao@hku.hk