

# BRAIN INFORMATICS 2019

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**Yong He**

**Deputy Director of the National Key Laboratory of Cognitive Neuroscience and Learning  
Director of the Beijing Key Laboratory of Brain Imaging and Connectomics  
Beijing Normal University, China**

## ***Developmental Connectomics from Infancy Through Early Childhood***

The human brain undergoes rapid growth in both structure and function from infancy through early childhood, and this significantly influences cognitive and behavioral development in later life. Developmental connectomics provides unprecedented opportunities for exploring the developing brain through non-invasive mapping of structural and functional connectivity patterns. In this talk, I will describe the methodological framework of developmental connectomics and our recent works in connectome development from infancy to early childhood. Specifically, I will highlight five fundamental principles of brain network development during the critical first years of life, emphasizing strengthened segregation and integration balance, a remarkable hierarchical order from primary to higher-order regions, unparalleled structural and functional maturations, substantial individual variability, and high vulnerability to developmental disorders.

## **Biography**

Dr. Yong He is a Changjiang Distinguished Professor of the Beijing Normal University. He is currently the Founding Director of the Beijing Key Laboratory of Brain Imaging and Connectomics, the Deputy Director of the National Key Laboratory of Cognitive Neuroscience and Learning, and the Principal Investigator of IDG/McGovern Institute for Brain Research. He did his PhD at the National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences (2002-2005) and was a postdoctoral fellow at the Montreal Neurological Institute, McGill University, Canada (2005-2007). Dr. He received numerous national award including the National Science Fund for Distinguished Young Scholars (2012) and Leading Scientists in Ten Thousand Talent Program (2019). Currently, he serves as Associate Editor of the Human Brain Mapping. To date, Dr. He has authored or co-authored more than 200 peer-reviewed journal articles, with a total citation of 28800 and an H-index of 79. From 2016 to 2018, Dr. He was selected as Highly Cited Researchers in Neuroscience & Behavior (Clarivate Analytics). Dr He's research

interest mainly focuses on imaging connectomics. Specifically, his team has developed a variety of methodologies to describe connectome architectures of structural and functional brain networks, and further investigated network alterations in normal development and disorders. Dr He's team has established graph-theoretical network analysis and visualization platforms for imaging connectomics (e.g., GRETNA and BrainNet Viewer). For details, see <http://helab.bnu.edu.cn>.

