“Integrative analysis of whole-brain networks.”

Abstract:

Understanding the principles of whole-brain network organization is a grand challenge in systems neuroscience. In this talk I will describe an integrative approach to the study of whole-brain networks, the implementation of this approach using a new class of constraint-network models, and the application of this approach to the current gold-standard network reconstruction of the mammalian brain. My results challenge the prevailing paradigm for analysis and modeling of whole-brain networks, and show that such analyses are based on circular reasoning (double dipping). An integrative approach avoids such pitfalls and allows a compact and empirically grounded description of whole-brain network organization.