

# What We Can Learn from Network Comparison

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Room 118 Nieuwland Science Hall

Refreshments @ 3:30 in 202 NSH

Network science has grown rapidly over the past 15 years, providing the tools to make sense of complex relations. I will review a number of practical applications from my work, drawing examples from different disciplines. In particular, I will focus on how a network analysis of fMRI brain data reveals that the brain operates in an almost optimal way, providing efficient information flow. I will also introduce a novel method of comparing networks. The ability to compare systems has always been a strong driving force in science, but in network science this still remains a puzzling problem. This method is based on the distribution of edge density in network subgraphs. Our approach avoids inherent constraints of other methods and can be applied to networks of different size and structure. I will demonstrate how the method can be used to classify a large number of networks into distinct classes.