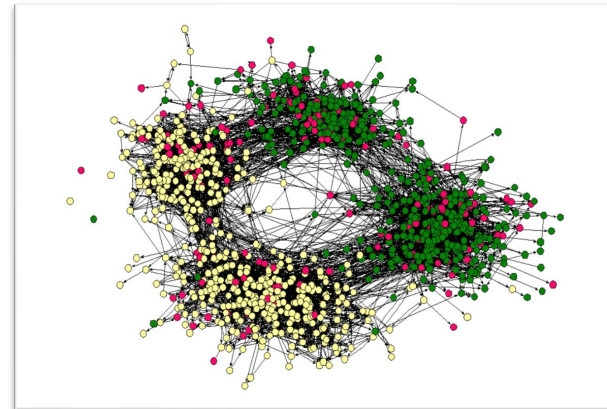
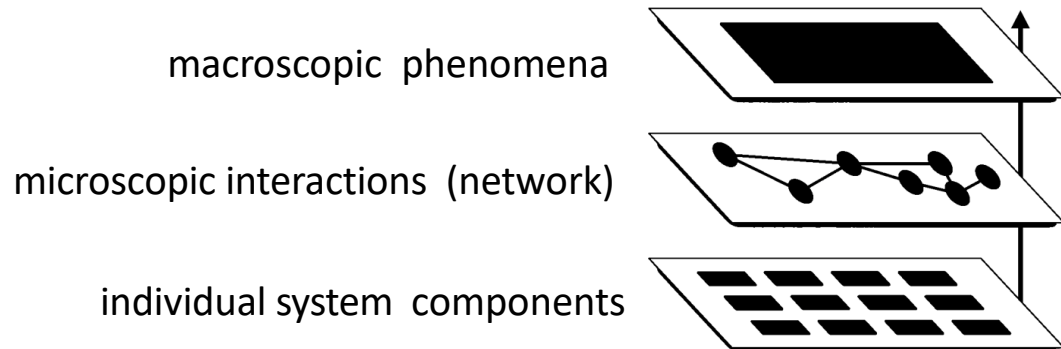




Dr Alec Kirkley - About Me

- Background in physics and mathematics, research is centered on framing data- driven problems using the language of complex networks
 - utilize techniques from Bayesian inference, statistical physics, spatial analysis, information theory, optimization, graph theory
 - two main lines of research: (1) theory of complex networks, and (2) urban systems applications
- Complex networks are natural representations of relational structure in big data
 - simple, small-scale interactions lead to complicated large-scale behavior
 - social ties, the internet, metabolic interactions, disease spread, transportation systems, etc





Current Research

- How do we infer “hidden” structure in networks? (theoretical research line)
 - e.g. groups of similar/highly connected nodes, representatives in sets of many networks
 - my research uses concepts from statistical inference and information theory to model this hidden structure
- How can we better understand urban systems using insights from network analysis? (urban applications research line)
 - network analysis allows for the quantification of congestion, resilience, efficiency, and accessibility, which is applicable to streets, infrastructure, human mobility, and more

