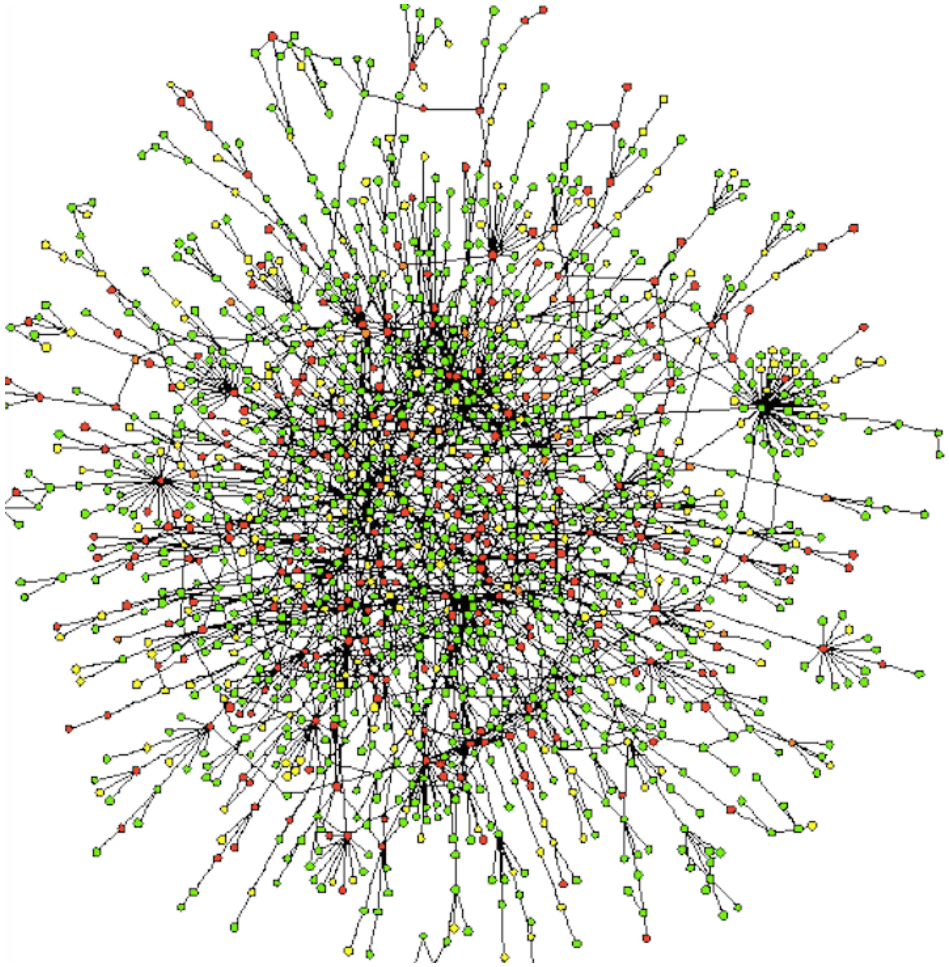

SPRING 2021
RANDOM GRAPHS

Random graphs, also called random networks, have been used to understand the robustness of the Internet, study food webs in predatory interactions, and predict unknown metabolic interactions, among countless other applications. This course introduces and analyzes various key random graph models, including the Erdös-Rényi and the Stochastic Block models. It presents these and other topics related to discrete random structures in a coherent and self-contained manner to facilitate their use to model and analyze more general random networks. The course should be especially appealing to undergrad and grad students who seek intuition as well as a mathematical exposition of random graph theory.

This course is different but complementary to Dynamics on Networks (APPM 4/5720) given on the Fall 2019 semester by J. Restrepo.

PHASE TRANSITIONS OF ERDÖS-RÉNYI

COMMUNITY RECOVERY IN THE STOCHASTIC BLOCK MODEL

PROBABILISTIC METHODS

ANALYTIC METHODS

OTHER CELEBRATED RANDOM GRAPH MODELS

CODE
APPM 4/5565

INSTRUCTOR
M. Lladser

PREREQS
APPM 3570, or equivalent