

# Topics in Social Network Analysis

Stanford University  
Graduate School of Business

OB622, Spring (Second half) 2017

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**Times:** Friday from 1:30 to 4:20 PM  
**Room:** GSB Bass 301

## Course Description

This course is designed for PhD students in management, organizational behavior and strategy who are interested in applying network ideas in their research. The course will provide an introduction to applied network theory and empirical methods. Over the 6 sessions of the course, students will learn:

- The basic building blocks of most network theories and how they have been applied in various empirical contexts.
- How to collect network data, visualize it and calculate basic network statistics.
- Formulate and test hypotheses drawing on network mechanisms.
- Understand the broad uses of network analysis in the study of organizations and strategy.

## Course Requirements

- Attendance and Participation (30% of grade)
- Theoretical Integration Paper (30% of grade)
- Research Proposal (40% of grade)

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## April 28, The Foundations of Social Network Analysis

New knowledge is anything that allows you to predict some outcome more accurately than before. The enterprise of network analysis is one example of a focused search for new knowledge. Network scholars seek to find patterns in human relationships that explain important outcomes---health, economic, and political---that are ignored, non-obvious, or run counter to conventional wisdom. The readings for this class helped set the stage for the network revolution in the social sciences. They articulate, very clearly,

what our prior assumptions were about how the world worked, and systematically showed us that we should think differently.

### **Readings:**

- Mark Granovetter (1973), [The strength of weak ties](#).
  - Jeffrey Travers and Stanley Milgram (1967), [The small world problem](#).
  - Mark Granovetter (1985), [Economic action and social structure: The problem of embeddedness](#).
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## **May 5, Network Position and Performance**

The most frequent use of network analysis has been to examine the relationship between network "position" and the performance of people and organizations. This line of research has produced exciting and important ideas, including those of structural holes, status, and closure. Network ideas have also helped scholars reformulate ideas about power, leadership and identity. The readings from this class will introduce you to some of the central ideas about network positions and their relationship to performance outcomes such as innovation or promotion.

### **Readings:**

- Ronald Burt (2004), [Structural Holes and Good Ideas](#), American Journal of Sociology.
  - Joel Podolny (1993), [A Status-based Model of Market Competition](#), American Journal of Sociology.
  - Joel Podolny and James Baron (1997), [Resources and Relationships: Social Networks and Mobility](#), American Sociological Review.
  - James Coleman (1987), [Social Capital in the Creation of Human Capital](#), American Journal of Sociology.
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## **May 12, Peer Effects**

Theories of network positions are built upon individual-level assumptions regarding information and knowledge transfer. Yet, until recently, rigorous empirical evidence for information transfer and learning at the dyadic level has been scarce. In this class we will dig deeper into the growing literature on peer effects and examine when we can expect to observe knowledge transfer, and how to evaluate the quality of evidence.

### **Readings:**

- Sacerdote (2000), [Peer effects with random assignment: Results for Dartmouth Roommates](#), Quarterly Journal of Economics.
  - Oettl (2012), [Reconceptualizing Stars: Scientist Helpfulness and Peer Performance](#), Management Science.
  - Hasan and Bagde (2013), [The Mechanics of Social Capital and Academic Performance in an Indian College](#), American Sociological Review.
  - Hasan and Bagde (2015), [Peers and Network Growth: Evidence from a Natural Experiment](#), Management Science.
  - Sinan Aral and Marshall Van Alstyne (2011), [The Diversity-Bandwidth Trade-off](#), American Journal of Sociology.
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## May 19, Network Formation

Are there general patterns in how networks are shaped? What forces lead these patterns to emerge and what are the implications for social processes that we care about (e.g., the generation of innovations)? In this class we will cover some core ideas behind the formation of social networks including homophily, triadic closure, reciprocity, and at the macro-scale small worlds and clusters.

### Readings:

- McPherson et al. (2001), [Birds of a Feather: Homophily in social networks](#), Annual Review of Sociology.
  - Gueorgi Kossinets and Duncan J. Watts, [Origins of Homophily in an Evolving Social Network](#), American Journal of Sociology.
  - Vincent Buskens and Arnout van de Rijt (2008), [Dynamics of Networks if Everyone Strives for Structural Holes](#), American Journal of Sociology.
  - Duncan Watts and Steven Strogatz (1998), [Collective dynamics of small-world networks.](#), Science.
  - Albert-Laszlo Barabasi and Reka Albert (1999), [Emergence of Scaling in Random Networks](#), Science.
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## May 26, Network Cognition, Activation and Team Structures

There is a lot more to networks than classical formulations of network effects as "positions" or as "peer effects." Scholars have creatively shown that how people perceive networks also affects their performance, how the overall structure of a team's internal and external networks affects team outcomes.

## Readings:

- Krackhardt (1990), [Assessing the Political Landscape: Structure, Cognition and Power in Networks](#), Administrative Science Quarterly.
  - Brent Simpson et al. (2011), [Power and the Perception of Social Networks](#), Social Networks.
  - Smith (2004), [“Don’t put my name on it”: Social Capital Activation and Job-Finding Assistance among the Black Urban Poor](#), American Journal of Sociology.
  - Ray Reagans et al. (2004), How to Make the Team: [Social Networks vs. Demography as Criteria for Designing Effective Teams](#), Administrative Science Quarterly.
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## **June 2, The Future of Network Analysis**

Your final project presentations go here.