# COM 682 Advanced Social Network Analysis

*THURS 6-8:50 PM, SPRING 2019*

Course Instructor : Seungyoon Lee
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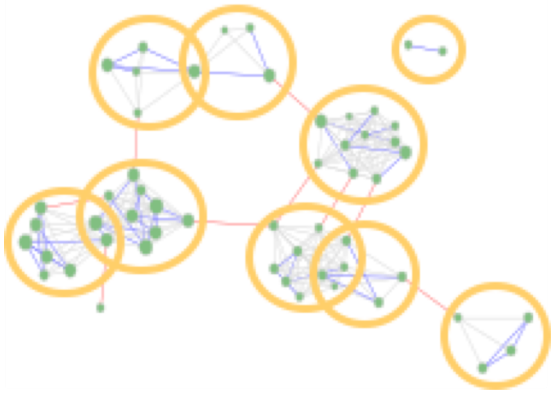
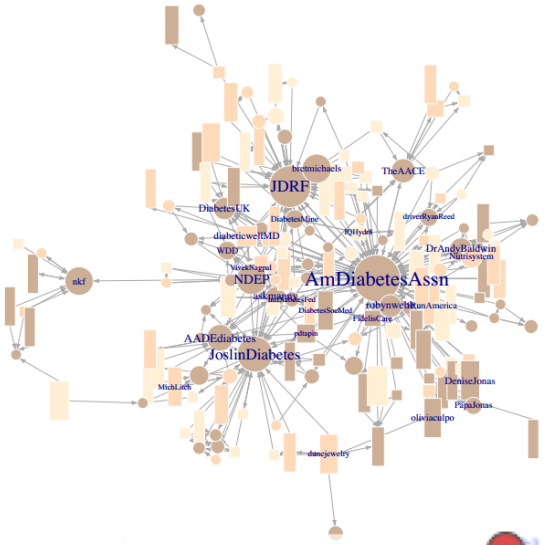


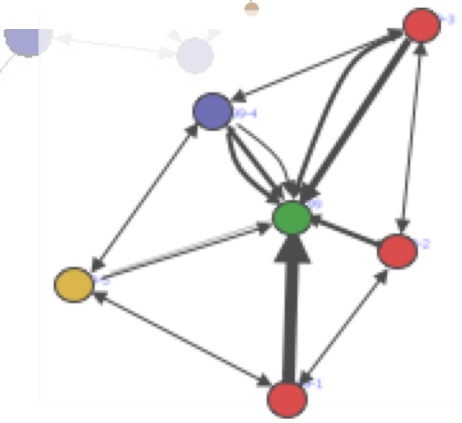
## *This course is designed for students who are interested in:*

- Gaining an in-depth understanding of social structures, how they emerge and evolve, and the underlying mechanisms
- Using network analysis in their own research, by learning how to collect and analyze network data
- Gaining hands-on experience using advanced network analysis methodologies and tools, including network statistics and visualization (Statnet and igraph packages in R), *p** (Exponential Random Graph Modeling), longitudinal actor-oriented models (RSiena), and personal (i.e., ego-centric) networks (E-Net)




## Course Description

Social network analysis is the study of patterns of relations among social entities. This course provides an in-depth study of social network theory, methods, and applications. After a short review of classic literature and methodologies, this course will be devoted to advanced statistical methods of network analysis, contemporary theoretical developments, and cutting-edge applications. Advanced methodologies covered will include testing hypotheses about local network structure; longitudinal network evolution; social influence and selection models; extensions to multiplex and multimodal networks; and personal network analysis. The course will address various application areas including interpersonal and organizational networks, social capital and support, social influence, social media and online interaction, health, and complex systems and resilience.



## Requirements

- *The course requires basic understanding of network concepts such as density, mutuality, and centralization and familiarity with handling network data format. Basic knowledge of regression analysis and significance tests is also required.*
- *Students are welcome to, but not required to, bring their own network research context and data.*