O UNIVERSITY OF OREGON	**Social Network Analysis** Sociology 613 MW 12:15-1:45, Zoom Spring 2021 Ryan Light Office Hours: Thursday, 2:00-4:00, Zoom via Calendly (https://calendly.com/light-sociology/15min) or alternative arrangement via email. Email: light@uoregon.edu

Course Description:

This course explores the foundations of social network analysis. Social network analysis (SNA) is motivated by the understanding that social actors do not live in a relational vacuum, but are interdependent upon one another. In SNA we turn to the relations that bind people together moving from simple dyadic relationships (i.e. mother-daughter) to infinitely more complex structures involving thousands of actors, organizations, and so forth. SNA is a technique derived from theory; therefore, we will attend to the theoretical underpinnings of SNA and the questions that these theories address: how does material, such as disease or ideas, flow through our networks, how is social power generated and maintained, how do our social relations influence what we do and even how we think, and many more. Moving beyond theory, we will spend a significant amount of time thinking about the methods that help us answer these types of questions from simple visualizations (i.e. family trees) to statistical models of networks.

Expected Learning Outcomes:

*You will describe and identify major concepts in social network analysis, like density, community, centrality, and cohesion.
*You will be able to compare different ways of measuring these concepts and select the best form of measurement for your research question.
*You will understand the structure of network data and how to collect data in your area of interest. You will visualize and model social networks using R.
*You will put your knowledge to work by constructing a social scientific research paper using social network analysis.

Course Modality and Structure

This class will operate as a hybrid seminar and workshop. We will meet via Zoom during the scheduled course times. Participation is key and we need consistent participation from every class member to be successful as a class. Readings are expected to be completed by the Monday session that will consist of a seminar-style discussion. Wednesdays' sessions will consist of workshops that work through SNA in R.

Course Policies

Communicating with Me: How and Why

Our class will communicate through our Canvas website. Announcements and emails are available there and are archived. They are automatically forwarded to your UO email and can be sent to you via text if you prefer (adjust this setting under account/notifications). I respond to emails in 48 hours or fewer,

usually excluding the weekends. In the event that I do not respond in two days, please send a follow-up email as the original likely got "lost in the shuffle."

Office Hours and Questions
I will host office hours via Zoom on Thursdays from 2-4pm. To book a meeting, please use this link: https://calendly.com/light-sociology/15min. If you need more time than 15 minutes, feel free to book two slots in a row. If you cannot meet during this time, please contact me via email to set up a meeting at an alternative, agreed-upon time. We will also have a running discussion called "General Course Questions" that I will monitor and that the class is free to use to ask/answer questions.

Why Office Hours?
When I was an undergraduate and at times as a graduate student, I remember feeling intimidated by my instructors and confused about how to best use office hours. I didn't want to waste anyone's time or risk looking like I was behind other students. As a faculty member, I find office hours to be one of the best, in underused, aspects of my job and I've never felt that my time was wasted or that attending office hours conveyed anything negative about a student. Students have attended office hours for many reasons from clarification on assignments, to working through difficult course material, to discussions about career goals, to fill me in on something interesting they read, listened to, or saw. Any of these reasons or more are good reasons to come to office hours in my courses. If you think that you may want a recommendation from me at a later time – even years later – you could come to office hours at least once during the course as it is far easier for me to remember students who I know personally via these meetings.

Requirements:
The main requirement of this seminar is a ***research paper*** (about 5,000 words) that uses the methods or ideas of social network analysis. This may be a revision of previous work (an MA paper, another course paper, etc.) or a new paper. If this is a revision of a previous paper, you need to show that the addition of network ideas or methods significantly contributes to the revision. You may collaborate with up to 2 other students (3-authors total) on your final paper. This paper is due on **June 13th at 5 pm**. The second requirement for the class is ***a set of homework assignments*** designed to build familiarity with analyzing networks in R. Assignments are due on Wednesdsay at noon following the week that that they are assigned (so an assignment listed on class 2 (April 5th) is due on Wednesday, April 14th) and can be completed in groups. ***Article presentations***: You are required to present one reading from the syllabus between weeks 3-10. This is a flash presentation and should consist of no more than 3 slides and last no longer than five minutes. Finally, since this is a seminar, ***in-class participation is necessary***.

Distribution:
Research Paper: 40%
Homework Sets: 40%
In-class Participation: 10%
Article Presentation: 10%

Texts Available via the Library – No need to purchase!:
Kadushin, Charles. 2011. *Understanding Social Networks: Theories, Concepts, and Findings*. Oxford UP. You can access this book here.

Light, Ryan and James Moody. 2020. *The Oxford Handbook of Social Networks*. Oxford UP. If you are logged into remote access via VPN or the library you can access here.

Recommended Texts:

Wasserman, Stanley and Katherine Faust. 1994. *Social Network Analysis: Methods and Applications*. New York: Cambridge UP… this is the "bible" of social network analysis and a source that all SNA specialists cite and return to frequently.

Or

Jackson, Matthew O. 2010. *Social and economic networks*. Princeton university press.

General Background Texts:

Christakis, Nicholas A. and James H. Fowler. 2009. *Connected: The Surprising Power of Our Social Networks and How They Shape Our Lives*. New York: Little Brown.

Watts, Duncan J. 2003. *Small Worlds: The Science of a Connected Age*. New York: Norton.

Freeman, Linton C. 2004. *The Development of Social Network Analysis: A Study in the Sociology of Science*. Vancouver, BC: Empirical Press…a detailed history of social network analysis from one of the "founders" of the contemporary field.

Programs:
We will us R to analyze and draw social networks in this course. If you aren't familiar with R, you are encouraged to take an introductory online course.

Other R and Rstudio resources:

Hadley Wickham's R for Data Science: http://r4ds.had.co.nz/tidy-data.html#introduction-6

Roger Peng's Book: https://leanpub.com/rprogramming

Cheatsheets: https://www.rstudio.com/resources/cheatsheets/

Swirl Courses: http://swirlstats.com/scn/title.html

Course Schedule (Subject to change with appropriate notice in class or through email):

Week 1 (3/29): Introductions

Kadushin: Chapter 1

Borgatti, Stephen P., Ajay Mehra, Daniel J. Brass, and Giuseppe Labianca. 2009. "Network Analysis in the Social Sciences." Science 323:892-895.

Light, Ryan and James Moody. 2020. "Network Basics: Points, Lines, and Positions." Pp. 17-33 in The Oxford Handbook of Social Networks. Edited by Ryan Light and James Moody. Oxford University Press.

Exercise: Draw your family tree going 3-steps from ego (Try in R?).

Week 2 (4/5): Foundations and Theoretical Perspectives

Emirbayer, Mustafa. 1997. "Manifesto for a Relational Sociology." American Journal of Sociology 103(2): 281-317.

Erikson, Emily. 2013. "Formalist and Relationalist Theory in Social Network Analysis." Sociological Theory 31(3):219-42.

Coleman, James. 1988. "Social Capital in the Creation of Human Capital" *American Journal of Sociology* 95: 95-120.

Fuhse, Jan, and Sophie Mützel. "Tackling connections, structure, and meaning in networks: quantitative and qualitative methods in sociological network research." *Quality & quantity* 45, no. 5 (2011): 1067-1089.

Exercise: Explain how a relational perspective expands/challenges common understanding in your specialty area.

Week 3 (4/12): Collecting and Visualizing Network Data

Kadushin: Chapter 11

adams, jimi, Santos, Tatiane, and Venice Ng. Williams. 2020. "Strategies for Collecting Social Network Data: Overview, Assessment, and Ethics." Pp. 119-136 in The Oxford Handbook of Social Networks. Edited by Ryan Light and James Moody. Oxford University Press.

Small, Mario Luis. "Weak ties and the core discussion network: Why people regularly discuss important matters with unimportant alters." *Social networks* 35, no. 3 (2013): 470-483.

Moody, James and Ryan Light. 2020. "Network Visualization." Pp. 352-67 in The Oxford Handbook of Social Networks. Edited by Ryan Light and James Moody. Oxford University Press.

Exercise: Find SNA data and import into R. Visualize and describe the data/network(s).

Week 4 (4/19): Network Composition, Distance, and Balance

Kadushin Chapters 2 and 8

Jeffrey A. Smith, Miller McPherson, and Lynn Smith-Lovin. 2014. "Social Distance in the United States: Sex, Race, Religion, Age and Education Homophily among Confidants, 1985-2004." *American Sociological Review* 432-456.

Smith, Jeffrey A. "The Continued Relevance of Ego Network Data." Pp. 177-188 in The Oxford Handbook of Social Networks. Edited by Ryan Light and James Moody. Oxford University Press.

Granovetter, Mark S. 1973. "The Strength of Weak Ties." *American Journal of Sociology* 78:1360-80.

Exercise: Local network basics

Week 5 (4/26): Centrality and Power

Kadushin: Chapter 3

González-Bailón, Sandra, Javier Borge-Holthoefer, Alejandro Rivero, and Yamir Moreno. "The dynamics of protest recruitment through an online network." *Scientific reports* 1 (2011): 197.

Fowler, James H. 2006. "Legislative cosponsorship networks in the US House and Senate." *Social Networks* 28: 454-65.

Cowan, Sarah K., and Delia Baldassarri. ""It could turn ugly": Selective disclosure of attitudes in political discussion networks." *Social Networks* 52 (2018): 1-17.

Exercise: Centrality

Week 6 (5/3): Cohesion and Community Detection

Kadushin: Chapters 4

Haynie, Dana L. 2001. "Delinquent Peers Revisited: Does Network Structure Matter?" *American Journal of Sociology*. 106:1013-57.

Prell, Christina, Kuishuang Feng, LaCixiang Sun, Martha Geores, and Klaus Hubacek. "The economic gains and environmental losses of US consumption: a world-systems and input-output approach." *Social Forces* 93, no. 1 (2014): 405-428.

González-Bailón, Sandra, and Ning Wang. "Networked discontent: The anatomy of protest campaigns in social media." *Social networks* 44 (2016): 95-104.

Exercise: Cohesion and Community

Week 7 (5/10): Two-Mode Networks

Kadushin: Chapter 6

Mutzel, Sophie and Ronald Breiger. "Duality Beyond Persons and Groups." Pp. 392-413." Edited by Ryan Light and James Moody. Oxford   University Press.

Burris, Val. 2004. "The academic caste system: Prestige hierarchies in PhD exchange networks." *American sociological review*, *69*(2), pp.239-264.

Hughes, M. M., Peterson, L., Harrison, J. A., & Paxton, P. (2009). Power and relation in the world polity: The INGO network country score, 1978–1998. *Social Forces*, *87*(4), 1711-1742.

Exercise: Two-Mode Networks

Week 8 (5/17): Diffusion and Preliminary Statistics

Kadushin: Chapter 9

Christakis, N. A., & Fowler, J. H. (2007). The spread of obesity in a large social network over 32 years. *New England journal of medicine*, *357*(4), 370-379.

Centola, D. (2010). The spread of behavior in an online social network experiment. *science*, *329*(5996), 1194-1197.

Moolenaar, N. M., Sleegers, P. J., Karsten, S., & Daly, A. J. (2012). The social fabric of elementary schools: A network typology of social interaction among teachers. *Educational Studies*, *38*(4), 355-371.

Exercise: Threshold Model and QAP

Week 9 (5/24): Introduction to Statistical Models
Robins, Garry, Philippa Pattison, Yuval Kalish, and Dean Lusher. 2007. "An Introduction to Exponential Random Graph (p*) Models for Social Networks." Social Networks 29(2):173-91.

Smith, Chris M., and Andrew V. Papachristos. 2016. "Trust thy crooked neighbor: multiplexity in Chicago organized crime networks." *American Sociological Review* 81, no. 4 (2016): 644-667.

Schaefer, David R., Olga Kornienko, and Andrew M. Fox. 2011. "Misery Does Not Love Company: Network Selection Mechanisms and Depression Homophily." American Sociological Review 75(5):764-85.

Exercise: ERGM

Week 10 (5/31): Conclusions and Next Steps

FINAL PAPER DUE 5pm, JUNE 8th to Canvas

Additional University and Course Policies[1]
Encouraging Inclusive Learning Environments: The University of Oregon is working to create inclusive learning environments. Please notify me if there are aspects of the instruction or design of this course that result in barriers to your participation. You are also encouraged to contact the Accessible Education Center in 164 Oregon Hall at 346-1155 or uoaec@uoregon.edu.

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[1] From Professor Light and/or the Teaching Engagement Program (tep.uoregon.edu)

Academic Misconduct: The University Student Conduct Code (available at conduct.uoregon.edu) defines academic misconduct. Students are prohibited from committing or attempting to commit any act that constitutes academic misconduct. By way of example, students should not give or receive (or attempt to give or receive) unauthorized help on assignments or examinations without express permission from the instructor. Students should properly acknowledge and document all sources of information (e.g. quotations, paraphrases, ideas) and use only the sources and resources authorized by the instructor. If there is any question about whether an act constitutes academic misconduct, it is the students' obligation to clarify the question with the instructor before committing or attempting to commit the act. Additional information about a common form of academic misconduct, plagiarism, is available at www.libweb.uoregon.edu/guides/plagiarism/students.

Being A Good Academic Citizen: What it means to be a good academic citizen is changing at a rapid pace. Classroom norms differ between departments and professors. Technology and our relationship to it have much to do with these ambiguities. So, being a good academic citizen means following traditional norms of good academic behavior: don't plagiarize, including non-appropriated paraphrasing and quotation (see full statement below), be respectful of others ideas, and so forth. But, it is also worth considering newer norms. For my class your phones should be put away. It is distracting to others to have people fidgeting with their text messages. You *can* use a laptop, but you should stay on task and respectful of others around you. If someone is being distracting, please contact me or a GTF. Last, you may NOT sell material for this class (notes, study guides, etc.). Any student who needs help with note-taking should talk to me.

Remote Learning:
Note that the same ethics and responsibilities of the face-to-face classroom apply to remote learning and our Zoom meetings. Please be respectful of one another and courteous to one another both in our large meetings and in breakout rooms.

Your Well-being:
Life at college can be very complicated. Students often feel overwhelmed or stressed, experience anxiety or depression, struggle with relationships, or just need help navigating challenges in their life. If you're facing such challenges, you don't need to handle them on your own--there's help and support on campus.

As your instructor if I believe you may need additional support, I will express my concerns, the reasons for them, and refer you to resources that might be helpful. It is not my intention to know the details of what might be bothering you, but simply to let you know I care and that help is available. Getting help is a courageous thing to do—for yourself and those you care about.

University Health Services help students cope with difficult emotions and life stressors. If you need general resources on coping with stress or want to talk with another student who has been in the same place as you, visit the Duck Nest (located in the EMU on the ground floor) and get help from one of the specially trained Peer Wellness Advocates.

University Counseling Services (UCS) has a team of dedicated staff members to support you with your concerns, many of whom can provide identity-based support. All clinical services are free and

confidential. Find out more at counseling.uoregon.edu or by calling 541-346-3227 (anytime UCS is closed, the After-Hours Support and Crisis Line is available by calling this same number).

Basic Needs

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live and believes this may affect their performance in the course is urged to contact the Dean of Students Office (346-3216, 164 Oregon Hall) for support.

The UO Basic Needs Resource Guide includes resources for food, housing, healthcare, childcare, transportation, technology, finances, and legal support.