Graduate Group in Epidemiology and Biostatistics
Doctoral Seminar in Epidemiology (EPID 700)
Spring 2021
Special topic: Methods for Social Epidemiology
Syllabus

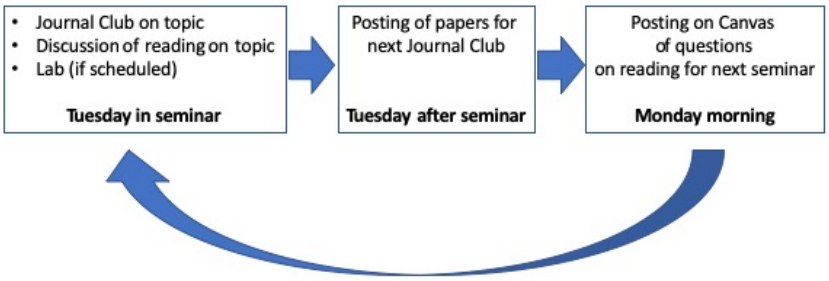
Overview

This is a seminar course! As such, we adhere to the traditional principles and format of the seminar model, which means:

- No lectures (except Week 1)!
- Lots of reading and thinking!
- Minimal written assignments!
- We will focus on guided readings and discussion.
- There is a premium on participation in our sessions
- We are focusing our efforts on mutual *discovery*, and planting the seeds (that's why it's called a *seminar)* for future work in social epidemiology and related fields.
- All of us will be learning from each other.

Course format

This is a seminar course, meaning that our *raison d'être* is the acquisition of new knowledge and skills through rigorous discussion and exploration. Each week (except the first) will be focused on a topic in social epidemiology, and the week will be structured as follows:



We will meet for two hours each week. You should expect to spend at least four to six hours outside of our meeting time in preparation for the next week.

Participating faculty

Course director and facilitator: John H. Holmes, PhD

Course units

This is a 1.0cu course.

Contact hours

The course will consist of one two-hour online session each week. In addition, a discussion board will be established on Canvas for out-of-class communication. Although not required, everyone is strongly encouraged to use this resource.

Pre-requisites

EPID 701 is the only required pre-requisite.

Course structure
The course is designed around four modules, each focusing on a major area of epidemiologic research principles. Each module (except for the last) consists of a series of sessions which are dedicated to a specific topic or method:

- Introduction to social epidemiology and syndemics
- Measures and measurement in social epidemiology
- Design and analysis 1
- Design and analysis 2

Course materials and resources

- Texts
    - Kaufman and Oakes: *Methods in Social Epidemiology*. Second Edition. Available online at the Penn Library, but it is a good reference to have on the bookshelf!
    - Singer: *Introduction to Syndemics: A Critical Systems Approach to Public and Community Health*.
- Selected readings from the epidemiologic literature for journal club are provided in the Files folder on Canvas, in the subfolder for each week.
- Sample systematic review articles and associated documents are in Files|Systematic review materials on Canvas.
- Documentation for social network analysis and agent-based modeling is in Files|Labs|{specific lab materials}
- This syllabus Is located in Files|Syllabus.

Learning outcomes
After completing this course, you should be able to:

- Describe the concept of a syndemic, and offer two examples- one historical and one recent.
- Illustrate the complexity of syndemics,
- Demonstrate ability to develop a variety of observational and analytic study designs as they apply to social epidemiologic inquiry
- Develop an understanding of the social, behavioral, and environmental science foundations of social epidemiology
- Demonstrate ability to critically assess literature in social epidemiology, positioning the assessment in the larger landscape of social sciences.
- Develop the data collection procedures for a social network analysis
- Demonstrate and comment on an analysis of a social network
- Create a simple agent-based model to illustrate the effects of social structure and personal behavior on a population health problem.
- Create a rigorous systematic review, suitable for publication, on a topic of interest in social epidemiology

Performance evaluation

The grade for the course will be based on the following:

- *Lab exercises (20% each)*. There are two laboratory exercises, one in social network analysis and the other in agent-based modeling. The assignment for each is to set up the appropriate software to investigate a research question of your choice, and then to write a 2-3 page paper describing the investigation and conclusions you draw from it, as well as a paragraph on limitations and another on how you might extend or apply this work in the future.
- *Systematic or scoping review (50%).* The "final project" for the course is a near publication-ready systematic or scoping review on a topic in social epidemiology that interests you. The review will adhere to PRISMA guidelines for the type of review you write. If you write a systematic (not scoping) review, you are expected to register your review with PROSPERO https://www.crd.york.ac.uk/PROSPERO/). The goal of this project is to provide you the opportunity to submit a manuscript for publication. There are three "check-ins" on the schedule where you can present in class an outline of what you are proposing and then working on for your review. The goal of these is to provide feedback from students and me so that you can refine your review as it moves along. There will be a folder on Canvas in the assignments section where you can place as many drafts as you want for me to review and provide additional feedback, if desired. You are not required to submit drafts, but you are very welcome to do so, and I will try to get back to you with suggestions within 2-3 days. You will present their reviews in class on April 27, at which time, everyone will offer constructive criticism. The final version of the review is due on Canvas at 11:59p on May 4. You will receive a formal review of your manuscript within a week with suggestions for editing and possible target journals.
- *Engagement (10%).* You are expected to participate actively in the seminar discussions and labs. This means that you are expected to attend each session, and if the spirit moves, join in on the discussion. FYI, this is an easy 10% to get! You will have to miss a number of classes, not speak up during our discussions, and not post to the chat or on the discussion board in order to lose these points.

Class Schedule

Note: Part numbers refer to Singer and chapter numbers refer to Kaufman

Module	Week	Date	Topic and readings	In-class discussion
Introduction and Syndemics	**1**	**1/26**	• Introduction to the seminar • Fundamentals of complex systems and social epidemiology • Syndemics Part 1: Key Concepts	Syllabus discussion
	2	**2/2**	• Syndemics Part 2: • Case studies • How to write a systematic review	• Journal cub: Syndemics 1 • Readings discussion
	3	**2/9**	• Syndemics Part 3: History and Environment	• Journal club: Syndemics 2 • Readings discussion • Systematic reviews discussion
Measures and Measurement	**4**	**2/16**	• Ch. 3: Race	• Journal club: Syndemics 3 • Readings discussion
	5	**2/23**	• Ch. 2 and 4: Poverty/SES	• Journal club: Race • Readings discussion
	6	**3/2**	• Ch. 5: Disparities • Ch. 6:. Segregation • Ch. 7: Neighborhood	• Journal club: Poverty, and SES • Readings discussion • Systematic reviews progress
Design and Analysis 1	**7**	**3/9**	• Ch. 9 Social network analysis	• Journal club: Neighborhood and Disparities • Readings discussion
	8	**3/16**	• Ch. 8: Community-based Participatory Research • Ch. 11: Community trials	• Journal club: Social network analysis • Readings discussion • Systematic reviews progress
	9	**3/23**	• **Lab: SNA methods**	
	10	**3/30**	ENGAGEMENT DAY NO CLASS	
Design and Analysis 2	**11**	**4/6**	• Ch. 12: Propensity Score Matching • Ch. 13: Longitudinal analysis • Ch. 14:. Difference-in difference analysis • 15. Multilevel analysis	• Journal Club: CBPR and Community trials • Readings discussion
	12	**4/13**	• Ch.18: DAGs in social epi • Ch.16: Mediation analysis • Ch 17: Instrumental variables in social epi	• Journal Club: Analysis methods • Readings discussion • Systematic reviews progress
	13	**4/20**	**Lab: Agent-based models**	
	14	**4/27**	In-class presentations of reviews	