Prevention Science Research: Advanced Methodologies
Fall 2015

Time/Location:	Friday 9:00-10:00/201 London
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Course Description & Objectives

Prevention Science Research is a graduate seminar intended to provide students with the theoretical and empirical foundations of prevention science. In particular, students will learn how to conceptualize problems from a prevention science perspective and design and evaluate preventive interventions using advanced methodologies.

As the instructor and seminar leader, I will conduct some didactic instruction (especially during the first few weeks of class). However, this course is a *seminar*, and you are expected to be a *full contributor*. Specifically, you are expected to come to each seminar session fully prepared to contribute to the discussions, and you will also be expected to conduct brief formal presentations to the group during the semester. An important aspect of this seminar will be your participation in case presentation discussions and practice activities designed to help students apply the knowledge based of the course.

By the end of the course, each student will be able to:

1. Conceptualize social problems from a prevention science perspective.
2. Develop hypotheses consistent with this perspective.
3. Design studies to evaluate preventive interventions.
4. Select appropriate statistical methods for analyzing data consistent with the study design and hypotheses.

My personal goals or hopes for the course are that we:

1. Inspire each other and have stimulating discussions.
2. Work together in designing studies, writing papers, analyzing data.
3. Extend our thinking about prevention theories, research, and interventions applied to each of our specific interests.
4. Chart the future direction of the Missouri Prevention Center and the prevention science course sequence.

Major Assignments

To successfully complete this course, you will need to complete the following requirements:

Attendance. Because this course is a seminar, your attendance and participation are extremely important. Although I do not have a specific grading policy (i.e., maximum number of days missed, etc.), it is worth noting that I expect you to be in attendance except in unusual circumstances, and to be on-time for class. I reserve the right to make reasonable adjustments in final grades if there is a particularly noteworthy problem with attendance.

Informed and Collegial Participation (75 points). I will use class-wide and small group discussions as important parts of the delivery of this course. Thus, you are expected to contribute to the learning of your peers in this seminar and participate in classroom activities.

Readings. I have assigned a reading list with an emphasis on recent research in prevention science. Please complete assigned readings prior to the class date each article is assigned.

Article Selection (25 points). You will identify three articles of your choice related to prevention science methods that are discussed during the class. It can be helpful to use peer reviewed articles that you can refer to when conducting similar analyses and writing up your research for publication. Please turn in the abstracts of the three articles you select at the end of the term to me electronically. Relevant journals, but not a comprehensive list include: *Development and Psychopathology, Child Development, Prevention Science, Journal of Child Psychology and Psychiatry, Journal of Abnormal Child Psychology, Journal of School Psychology, Journal of Positive Behavior Interventions and Supports*.

Goal Setting. At the beginning of each term you are encouraged to set short and long-term goals that will guide your participation in course activities.

IRB Compliance Training. Please complete the IRB compliance training for MU available on-line at your earliest convenience. To complete the compliance training go to the following web-link and log in: https://irb.missouri.edu/eirb/gen4/User/Login/
Choose "*Compliance Training*" from the main menu. You are not required to complete the HIPPA trainings for participation in MPC activities. However, you will need to complete the *Educational Training Quiz* and print certification of your successful completion before participating in any MPC research activities.

Final Evaluation

Final grades for this course will be based on the quality of your performance on all the required activities according to the possible points below for each assignment:

Participation and Attendance	75
Article Abstracts	25
TOTAL	100

The following percentage criteria (based on how many points you receive out of 100 possible) will be used to determine your final grade:

100-93	A
85-92	B
75-84	C
< 74	no credit

Credit will not be awarded for completion of the course requirements at less than the 75% credit.

Policy Statements

In this course, we will explore individual differences in human behavior in their broadest manifestations, as these differences relate to psycho-social problems of children and youth. Some of these areas of individual differences in human diversity will include gender, age, race/ethnicity, socioeconomic status. Other areas may also be covered. This will be a class in which human diversity is an important issue. It is my intent that this course will promote respect for human diversity, as well as open and honest discussions of differing views and respect for various perspectives regarding the subject matter. Please let me know of your suggestions for improving this course and the way in which it is delivered.

If you have a disability and anticipate barriers related to the format or requirements of this course, if you have emergency medical information to share with me, or if you need to make arrangements in case the building must be evacuated, please let me know as soon as possible.
If disability related accommodations are necessary (for example, a note taker, extended time on exams, captioning), please register with the Disability Center (http://disabilitycenter.missouri.edu), S5 Memorial Union, 573- 882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for persons with disabilities, click on "Disability Resources" on the MU homepage.

Academic honesty is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards academic dishonesty as an extremely serious matter, with serious consequences that range from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, or collaboration, consult the course instructor.

Reading List

A reading list has been devised to supplement and enhance your research and professional development experience. Please complete assigned readings prior to the date each article is

assigned. Please contribute to the learning of your peers through group discussions. All readings are available on Blackboard. Links are provided to online publications.

Background and Resources:

Society for Prevention Research. (2011). *Standards of Knowledge for the Science of Prevention*. Fairfax, VA: Society for Prevention Research.

Kellam, S. G., Koretz, D., & Moscicki, E. (1999). Core elements of developmental epidemiologically based prevention research. *American Journal of Community Psychology, 27*, 463-483.

Chapter 53. Public Health Surveillance: A tool for targeting and monitoring interventions.

Masyne, K. (2013). Latent class analysis and finite mixture modeling. In *The Oxford handbook of quantitative methods (Vol 2): Statistical analysis*. Little, Todd D. (Ed); New York, NY, US: Oxford University Press, pp.551-611, 765

Reading Schedule: Fall 2015

Date	Topic	Reading
8/28	**Introduction and Overview**	
9/4	**Data Management** Crystal Lewis, Research Associate, MPC	
9/11	**Latent Class/Profile Analyses** Dan Cohen, Doctoral Candidate, ESCP	
9/18	**Latent Class/Profile Analyses**	
9/25	**Latent Transition Analysis (LTA)**	
10/2	**Latent Growth Curve Modeling (Single Growth)** **Growth Mixture Modeling (GMM)**	
10/9	**Growth Mixture Modeling (GMM)** **Parallel and Sequential Analyses**	
10/16	**Group Randomized Trial Design & Analysis** Nianbo Dong, Asst Professor, ESCP	
10/23	**Causal Inference Using Instrumental Variables** Wei Li, Postdoctoral Fellow	
10/30	**Regression Discontinuity Designs** Francis Huang, Asst Professor, ESCP	
11/6	**Fuzzy Set Regression** James Sebastian, Asst Professor, ELPA	
11/13	**Single Subject: Design and Advanced Analyses** Kelly Schieltz, Asst Professor, ESCP Steve Kilgus, Asst Professor, ESCP	
11/20	**Survival Analysis** Wendy Reinke, Associate Professor, ESCP	
11/27	**No Class: Fall Break**	
12/4	**Wrap Up**	