

# PUBH 8120, SECTION 001

## Occupational and Environmental Health and Safety Research Seminar SPRING 2019

**Grading Option - S/N only**

### COURSE AND CONTACT INFORMATION

**Credits:** 1

**Meeting Day(s):** Fridays

**Meeting Time:** 9:00 – 11:00 a.m.

**Meeting Place:** 1155 Mayo Memorial Building

**Instructor:** Bruce Alexander, PhD. Susan Goodwin Gerberich, PhD; Andrew D. Ryan, MS

**Email:** [balex@umn.edu](mailto:balex@umn.edu); [gerbe001@umn.edu](mailto:gerbe001@umn.edu); [ryanx029@umn.edu](mailto:ryanx029@umn.edu)

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**Office Hours:** Contact by email

**Office Location:** 1260 Mayo (Alexander); 1156 Mayo (Gerberich); C-174 Mayo (Ryan)

### COURSE DESCRIPTION

This course is designed to develop skills for becoming an independent scientist. The course builds on the fundamental competencies gained in basic epidemiology, biostatistics, and occupational and environmental health- and safety-related courses and explores how these skills are integrated across sub-disciplines of environmental health. It enables students from multiple disciplines to synthesize information and to enhance critical thinking and application of methods to specific research efforts. The course is also intended to assist students in navigating the process of developing and implementing a thesis project.

### COURSE PREREQUISITES

Registered student in the Division of Environmental Sciences and/or one of the training programs of the Midwest Center for Occupational Health and Safety. Students from other programs in public health will be considered on a space-available basis; completion of / registration in epidemiology and biostatistics courses (exceptions negotiated, as appropriate); engaged in or planning a research effort.

### COURSE GOALS AND OBJECTIVES

#### Goal

To facilitate student research efforts in environmental and occupational health- and safety-related doctoral and other training programs through interdisciplinary involvement of students.

#### Detailed Learning Objectives

- A. Discuss and explore fundamentals of research methods;
- B. Develop a broader understanding of the multidisciplinary nature of public health;
- C. Critique key papers of methodological interest, pertinent to the field of occupational and environmental health and safety;
- D. Practice communication of health and research information;
- E. Provide and receive constructive criticism on ongoing research projects;
- F. Synthesize fundamentals of research methods and key concepts to the application of specific research efforts;
- G. Develop professional skills including communication and networking

## METHODS OF INSTRUCTION AND WORK EXPECTATIONS

**Course Workload and Expectations** PubH 8120 is a 1 credit course. The University expects that for each credit, you will spend a minimum of three hours per week attending class or comparable online activity, reading, studying, completing assignments, etc. over the course of a 15-week term. Thus, this course requires approximately 45 hours of effort spread over the course of the term in order to earn an average grade.

**This is YOUR seminar. It is expected that you will take responsibility** for contributing to seminars by scheduling yourself for at least one of the types of activities noted in the learning objectives and leading relevant presentations/discussions. Discussions / critiques of various aspects of research projects (ideas for projects; proposals; development of methods; analyses; interpretation); Informal lectures and presentations by students, faculty and guest lecturers; practice presentations for thesis committees and professional/other meetings; field trips relevant to environmental and occupational health

All students will be expected to regularly attend the seminar and participate in the discussion. This will include critiquing papers, providing constructive feedback to fellow students' work-in-progress and discussing the particular topic being presented. Over the course of the term and year, each student will present their work-in-progress in one or more sessions.

**Learning Community** This is a multidisciplinary course that involves individuals from varied backgrounds and experiences. Building on what we already know about collaborating, listening, and engaging is critical to successful professional, academic, and scientific engagement with others in the various topics that will be presented and discussed. Students are expected to engage with each other in respectful and thoughtful ways. Like other work in the course, all student-to-student communication is covered by the Student Conduct Code (<https://z.umn.edu/studentconduct>).

## COURSE TEXT AND READINGS

### Suggested Resources, as appropriate:

- Checkoway, H, Pearce NE, Kriebel D. Research Methods in Occupational Epidemiology. New York: Oxford University, 2004.
- Friis RH, Sellers T. Epidemiology for Public Health Practice. Fifth Edition. Sudbury, Massachusetts: Jones and Bartlett Publishers, 2013.
- Garrard J. Health Sciences Literature Review Made Easy: The Matrix Method, Fifth Edition, London: Jones and Bartlett, Publishers, 2017.
- Good PI, Hardin JW. Common Errors in Statistics (and How to Avoid Them), Fourth Edition. New Jersey: John Wiley and Sons, Inc., 2012.
- Greenland S, Pearl J, Robins J. Causal diagrams for epidemiologic research. *Epidemiology*, 10:37-48,1999.
- Hemenway D. While We Were Sleeping: Success Stories in Injury and Violence Prevention, University of California Press, 2009.
- Hernan MA, Hernandez-Diaz S, Werler MM, Mitchell AA. Causal knowledge as a prerequisite for confounding evaluation: An application to birth defects epidemiology, *American Journal of Epidemiology*, 155(2):176-184, 2002. [Application of Directed Acyclic Graphs]
- Levy BS, Wegman DH, Baron SL, Sokas RK. Occupational and Environmental Health, Edition 7, New York: Lippincott, Williams and Wilkins, 2017.
- Michaels KB. Epigenetic Epidemiology, Springer, 2014
- Oakes MJ, Kaufman JS. Methods in Social Epidemiology, Second Edition, New York: Josey-Bass, 2017.
- Robertson L. Injury Epidemiology, Fourth Edition (revised 2018) This edition (2018) is now available free at [www.nanlee.net](http://www.nanlee.net); hard copies can be ordered at <http://www.lulu.com/shop/leon-s-robertson-phd/injury-epidemiology-fourth-edition/paperback/product-22216374.html>

- Rothman K, Lash TL, Greenland S. Modern Epidemiology. Third Edition. Philadelphia: Lippincott Williams and Wilkins, 2012. [New version by Rothman available May 2, 2019]
- Szklo M, Nieto FJ. Epidemiology: Beyond the Basics, Third Edition. Burlington, Massachusetts: Jones and Bartlett Learning, 2014.
- Van Belle G, Fisher LD, Heagerty PJ, Lumley T. Biostatistics: A Methodology for the Health Sciences, Second Edition, New Jersey: John Wiley and Sons, Inc., 2004.

#### **Other Resources:**

- Bloomfield V, El-Fakahany EE. The Chicago Guide to Your Career in Science: A Toolkit for Students and Post-Docs, Chicago/London: The University of Chicago Press, 2008. (Authors from the University of Minnesota)
- Strunk W, Jr. Elements of Style, First Edition, Value Classic Reprints, 2016. (Excellent guide: to the use of English language and avoiding various pitfalls.)
- STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) <http://www.strobe-statement.org> (Check: home; Aims; Available checklists; Publications, Commentaries, Discussion Forum, STROBE group and other contributors, Endorsement).
- Truss L. Eats, Shoots and Leaves: The Zero Tolerance Approach to Punctuation, New York: Gotham Books, 2004, ISBN 1-59240-087-6: a non-fiction book written by the former host of the BBC's Cutting a Dash radio program. In the book, Truss bemoans the state of punctuation in the United Kingdom and the United States and describes how rules are being relaxed in today's society. Her goal is to remind readers of the importance of punctuation in the English language by mixing humour and instruction.
- Vick JM, Furlong JS. The Academic Job Search Handbook, Fifth Edition, Philadelphia: The University of Pennsylvania Press, Inc., 2016.

## **COURSE OUTLINE/WEEKLY SCHEDULE:**

***Refer to Separate Evolving Schedule File***

## **SPH AND UNIVERSITY POLICIES AND RESOURCES:**

The School of Public Health maintains up-to-date information about resources available to students, as well as formal course policies, on our website at [www.sph.umn.edu/student-policies/](http://www.sph.umn.edu/student-policies/). Students are expected to read and understand all policy information available at this link and are encouraged to make use of the resources available.

The University of Minnesota has official policies, including but not limited to the following:

- Grade definitions
- Scholastic dishonesty
- Makeup work for legitimate absences
- Student conduct code
- Sexual harassment, sexual assault, stalking and relationship violence
- Equity, diversity, equal employment opportunity, and affirmative action
- Disability services
- Academic freedom and responsibility

Resources available for students include:

- Confidential mental health services
- Disability accommodations
- Housing and financial instability resources
- Technology help
- Academic support

## EVALUATION AND GRADING

This course is offered on a **Pass/Fail (Satisfactory/Not satisfactory) basis**. To receive a passing grade students must regularly attend the seminar and participate as appropriate. An S grade is assigned for registered students contributing to presentations, discussions, and activities, as follows: Discussions/critiques of various aspects of research projects (ideas for projects; proposals; development of methods; analyses; interpretation); Informal lectures and presentations by students, faculty and guest lecturers; Practice presentations for thesis committees and professional/other meetings; field trips relevant to occupational health and safety and other research areas.

- S = achievement that is satisfactory, which is equivalent to a C- or better
- N = achievement that is not satisfactory and signifies that the work was either 1) completed but at a level that is not worthy of credit, or 2) not completed and there was no agreement between the instructor and student that the student would receive an I (Incomplete).