

Department of Environmental and Occupational Health Sciences  
School of Public Health and Community Medicine  
University of Washington

**ENVH 111**  
***EXPLORING ENVIRONMENT AND HEALTH CONNECTIONS***

Autumn 2009  
3 credit hours

Tuesday & Thursday 1:30 - 2:20 in T747 Health Sciences Building  
Friday small group sessions 1:30 - 2:20 in T473 and T531 Health Sciences Building  
Course Website: <http://courses.washington.edu/envh111/>

**Course Faculty**

Mathew Keifer, MD, MPH; Professor  
Department of Environmental and Occupational Health Sciences  
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**Teaching Assistants**

Rad Cunningham  
Department of Environmental and Occupational Health Sciences  
Office: Health Sciences Building , F-230  
Office Hours: Tuesday 2:20-3:20 and Friday 2:20-3:20  
Phone: 206 303 0204  
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**Guest Speakers**

Stan Addison, Radiation Safety Officer  
UW Environmental Health and Safety  
[rso@u.washington.edu](mailto:rso@u.washington.edu)

John Kissel, PhD  
Environmental and Occupational Health  
Sciences  
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Chad Weldy Ph.D. candidate Toxicology  
Environmental and Occupational Health  
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[weldyc@u.washington.edu](mailto:weldyc@u.washington.edu)

**Course Description:**

This course is an introduction to the dimensions of the field of Environmental and Occupational Health. The course emphasis is on the human health impacts of the general and the work environment. Over the quarter, we will consider several topic areas in which human activities or behaviors create possible threats to health via their effects on the environment. We will consider various agents or conditions that might be injurious, and the kinds of information and analysis that would allow the magnitude of the risk or threat to be assessed. In doing this, we will reference stories in the news and unfolding issues of significance to health and environment. At the end of the course, you should be able to identify key factors that determine the presence or absence of an actual threat to human health from some environmental situations. You should be aware of many of the investigative and management approaches that are currently used to protect public health.

**Course Learning Objectives:**

- Understand the scientific principles associated with major environmental and occupational health issues.
- Discuss the relationships between environment and human health outcomes.
- Increase awareness of the implications of health/environment interactions for social decision making, environmental regulation, and allocation of public health resources
- Discuss the major agencies, programs, and organizations involved in environmental and occupational health protection.
- List the variety of environmental and occupational health professions and their roles.

## **Course Requirements:**

**Text:** No text required. Readings will be available through E reserve or handouts.

**Attendance and Participation:** Your appreciation and understanding of the issues will be strongly enhanced through regular attendance and participation in the class. You will be expected to read assignments before coming to class and be prepared to discuss the readings and respond to questions. Please notify the instructors if you will not be able to attend a class.

## **Weekly Assignments:**

This course is structured in week-long modules with each module devoted to a particular environmental health topic. Tuesday and Thursday class sessions will be lecture format and Friday class sessions will be small group discussion format.

***Small Group discussion:*** The class will be divided into two discussion groups and you will meet in that group most Fridays for group discussion. For each module you will have materials to read or view on the web in preparation for the small group discussions. (You will need to be familiar with web browsers and will need to access the class website where some of the reading material may be posted or linked). You will also receive discussion questions by Friday of each previous week to help guide your reading and thinking on the subject. **All** students are responsible for reading the material and for being prepared to discuss the topic and related questions.

Each week several students will take responsibility for facilitating the discussion in each of the Friday group sessions. **Student facilitators** can best prepare for their responsibilities by thoroughly reading the module assignment, reviewing discussion questions, thinking of additional questions of your own, and by identifying and reading additional sources of information that might help expand the discussion and understanding of the topic. Think of creative ways to present the discussion content and to encourage your classmates to share their opinions about the reading. Facilitators are strongly encouraged to work together in planning for and guiding the group discussion. Facilitators will be graded on their understanding, preparation and presentations during the discussion of the paper.

## ***Small Group Evaluation:***

Each Friday you will turn in:

- A Summary your thoughts on the week's readings: This should be well written, but not formal and reflect **your reactions and thoughts** about the reading
- A Summary of an additional reading on the week's topic: This should be 3-4 sentences that **summarize the article**. You must cite your article.
- Discussion Summary: You will be given 5 or 10 minutes at the end of the discussion to write down your impressions of that day's discussion.

Your grade for the discussion classes on Friday will be based on: 1. your overall group participation in the discussion, 2. your individual reference summaries, and 3. your synthesized

thoughts resulting from the discussion. You must personally hand in your summary-reference-impressions at the end of class. The instructors will not accept hand-ins brought in by other students.

**Midterm exam:** A midterm exam will cover material up to the date of midterm.

**Final paper:** there will be an 8-10 page (double spaced) term paper due on the last day of class. This will cover one of the main topics of the course which will be chosen by you. A more refined question will be developed between you and the instructors based on your choice of general topic.

### **No Final Exam**

**Extra Credit** (up to 5 points): You may submit one news article related to environmental or occupational health and receive 1/2 extra credit point per week. The article should be from current (within the past month) print or electronic media. Email the article to Mary Saucier <saucier@u.washington.edu> by 4:00 PM Thursday of each week. Along with your submission please include the source or URL and a short synopsis of the article written by you (3-4 sentences). Each submitted article will receive 1/2 point and many will be posted on the class website. One article per person per week, please.

NOTE 1: students are expected to reference all work and give appropriate attribution for all materials cited, including any reference to websites or articles.

**WARNING: Plagiarism, which is the appropriation of another person's ideas, processes, results or words without giving appropriate credit, will not be tolerated.**

NOTE 2: No cell phones or text messaging or emailing during class – thanks!

### **Course Grading:**

Small group discussion sessions– 30%

10% = group facilitation

20% = average grade of the 6 highest grades of the 7 discussion paper write-ups

Midterm examination – 30%

Final Paper - 40%

If you would like to request academic accommodations due to a disability, please contact Disabled Student Services, 448 Schmitz, 543-8925 (Voice/TTY). If you have a letter from Disabled Student Services indicating you have a disability that requires academic accommodations, please present the letter to me so we can discuss the accommodations you might need for class.

<b>ENVH 111 Autumn 2009 Course Schedule</b>				
<b>Date</b>	<b>Day</b>	<b>Topic</b>	<b>Lecturer</b>	<b>Assignment due dates</b>
10/1	Thurs	Course Overview	Keifer	
10/2	Fri	Small Group orientation	All	Reading: Deceit and Denial Introduction
10/6	Tue	Environmental Health and Epidemiology	Keifer	Reading: Popcorn Lung
10/8	Thurs	Environmental Health and Epidemiology	Keifer	
10/9	Fri	Small group discussion EH and Epi	Keifer	Discussion summaries due
10/13	Tues	Water	Kissel	Reading: Toxic Waters- a series by the New York Times <a href="http://www.nytimes.com/2009/09/13/us/13water.html">http://www.nytimes.com/2009/09/13/us/13water.html</a>
10/15	Thurs	Waste	Kissel	
10/16	Fri	Small group discussion Water and Waste	All	Discussion summaries due
10/20	Tues	Occupational Health	Keifer	Reading: The Most Dangerous Job
10/22	Thurs	Occupational Health	Keifer	
10/23	Fri	Small group discussion Occupational Health	Keifer	Discussion summaries due
10/27	Tues	Toxicology	Weldy	Reading: To Be Announced
10/29	Thurs	Toxicology	Weldy	
10/30	Fri	Small group discussion Toxicology	All	Discussion summaries due
11/3	Tues	Food Safety	Keifer	Reading: Food Problems Elude Private Inspectors: NYT.
11/5	Thurs	Food Safety	Keifer	
11/6	Fri	Small group discussion Food Safety	All	Discussion summaries due;
11/10	Tues	MIDTERM	All	
11/12	Thurs	Environmental Justice	Keifer	Environmental Justice in the 21 <sup>st</sup> century and The Assault on Fence-line Communities
11/13	Fri	Small group discussion Environmental Justice	Keifer	Discussion summaries due
11/17	Tues	Air pollution	Cunningham	Reading: To Be Announced
11/19	Thurs	Air Pollution	Cunningham	

**ENVH 111 Autumn 2009 Course Schedule, Continued**

<b>Date</b>	<b>Day</b>	<b>Topic</b>	<b>Lecturer</b>	<b>Assignment due dates</b>
11/20	Fri	Small group discussion Air Pollution	All	Discussion summaries due
11/24	Tues	Radiation	Addison	Reading: To Be Announced
11/26	Thurs	Thanksgiving		
11/27	Fri	Thanksgiving		
12/1	Tues	Global Change	Cunningham	Reading: To Be Announced
12/3	Thurs	Global Change	Cunningham	
12/4	Fri	Small Group Discussion Global Change	All	Discussion summaries due
12/8	Tues	TBN	TBN	
12/10	Thurs	TBN	Keifer	

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The **Friday Small Group** sessions will provide an opportunity to talk in more detail about topics presented in the weekly modules and to discuss an article relevant to the module topic.

**Instructions for Small Group Facilitators**

1. Each week the entire class will receive an article to read along with some general discussion questions. The reading and the questions for each week will be posted by the preceding Friday, if not before.
2. Each week 2-3 students will lead small group discussions (sign up first week of class).
3. Student facilitators are should work together to lead and prepare for small group facilitation.
4. Facilitators will present brief (about 10 minutes) summary of the reading.
5. The class will be divided in three “interest groups” (most of the time). Facilitators will then each discuss the issues with their assigned interest group, taking on the perspective assigned to them (for or against or neutral on the topic). The faculty will help you with encouraging group participation.
6. The entire class will then discuss the issue with the facilitators representing the opinions of their respective interest groups, using the prepared discussion questions as a guide. Other questions are encouraged.
7. Facilitators and class members are expected to be prepared to contribute additional information they have found on the topic through additional reading and research.
8. Facilitators (only) will turn in **a written annotated bibliography of the references used to prepare for leading the discussion along with a brief review of the discussion article.**
9. All other class members will **turn in their annotated summary of the discussion article (with an additional reference and a short summary of the reference). On this same page will be written the answer to a question posed in class by the instructor.**

In summary, facilitators will need to do more than just read the assigned article to prepare for the group discussion. You must also do some additional background reading on your topic. The discussion questions are provided mostly as a guide to your reading and the reading of the members of the small group. Don't let the discussion questions limit the scope of the discussion. Be creative! This should be fun.

**All students** will turn in, at the end of the discussion session, a brief summary of the discussion article and an annotated summary of at least one additional reference that you investigated in preparation for the discussion **and**, you will be given 5-10 minutes at the end of the discussion session to write a response to a question posed in class and how it related to the in class discussion.

\* An annotated bibliography is a list of citations of books, articles, websites, and documents. Each citation (source, date) is followed by a brief (4-5 sentences) descriptive and evaluative paragraph - the annotation. The purpose of the annotation is to inform the reader of the content, relevance, and quality of the sources cited.

***EXPLORING ENVIRONMENT AND HEALTH CONNECTIONS***

**Environmental Health Resources  
(not required, but helpful to know about)**

**Interesting Websites:**

Centers for Disease Control: [www.cdc.gov](http://www.cdc.gov)

Food and Drug Administration: [www.fda.gov](http://www.fda.gov)

Occupational Safety and Health Administration: [www.osha.gov](http://www.osha.gov)

US Department of Agriculture: [www.usda.gov](http://www.usda.gov)

US Environmental Protection Agency: <http://www.epa.gov/>

Washington State Department of Health: [www.doh.wa.gov](http://www.doh.wa.gov)

Washington State Department of Labor and Industries: [www.lni.wa.gov/wisha](http://www.lni.wa.gov/wisha)

World Health Organization: [www.who.int/en/](http://www.who.int/en/)

**Interesting Text Books:**

Basic Environmental Health

Annalee Yassi, Tord Kjellstrom, Theo de Kok, Tee L. Guidotti  
Oxford University Press, ISBN: 019513558-X 2001

Environmental Health, 2<sup>nd</sup> ed.

Monroe T. Morgan Morton Publishing Company, ISBN: 0895823763-X 1997

Living with the Earth: Concepts in Environmental Health Science

Gary S. Moore Lewis Publishers (CRC Press), ISBN: 1566703573 1999

Our Global Environment: A Health Perspective, 5<sup>th</sup> ed.

Anne Nadakavukaren Waveland Press, ISBN: 1577660986 2000

**Other Interesting Books**

A Small Dose of Toxicology

Steven Gilbert CRC Press; ISBN 0415311683 2003

“The purpose of this book is aptly captured in its title – it exposes the reader to “a small dose” of science of toxicology. The book is an excellent introductory read for several different audiences: someone who is interested in a career in toxicology, a student new to the field, or the layman who is interested in understanding more about the harmful effects of everyday chemicals on the human body. The book outlines the social history of toxicology, and its importance in today’s world, and then delves into the basic fundamentals of the science, such as dose-response, idiosyncratic toxicology, risk management, and ADME, which provide a framework for the reader to understand the subsequent chapters. The book does a great job of outlining several

areas of toxicology and its impact on human health, i.e. alcohol, caffeine, nicotine, pesticides, metals, solvents, radiation, natural toxins, the environment, cancer, development toxicology and neurotoxicology. The chapters are well written, with relevant examples of human exposure and subsequent consequence. A nice touch at the end of each chapter is reference section with internet links to sites of interest.” By Gurpreet S Ratra; British Toxicology Society

Been Brown so Long, It Looked Like Green to Me: The Politics of Nature (Paperback)

Jeffrey St. Clair Common Courage Press, 2004.

“For all the environmental havoc uncovered in these 56 essays, it is miraculous we still have a planet and any clean air and water at all. Jeffrey St. Clair co-edits Counter-punch, along with Alexander Cockburn. To get a sense of the dimensions of what we’ve lost, he says, you have to “get the feel of your fingers skimming over 800 grow rings on the stump of a Douglas fir,” which is all that’s left of 95 percent of the old growth forests of the Pacific Northwest. This book is a dire warning, the work of a singular investigative journalist and master storyteller.” Review by Tracy McLellan

Collapse: How Societies Choose to Fail or Succeed

Jared Diamond The Penguin Group USA; ISBN 9780670033379 | 29 Dec 2004

“It begins with the stories of several historical collapses, including the demise of the Easter Islanders, remembered now for the iconic stone heads they left behind on their Pacific island home; the fall of the ancient Mayan cities that were once the hub of the New World's most advanced Native American civilization; and the disappearance of the Norse colony on Greenland after surviving for 450 years as Europe's most remote outpost. In all these cases, Mr. Diamond diagnoses a similar pattern of catastrophe: environmental damage (usually deforestation leading to soil erosion, food shortages and eventually social and political crises), worsened by other factors like climate change, shifting trade patterns and shortsighted or venal leadership.” By Michiko Kakutani; New York Times

Dumping in Dixie

Robert Bullard Westview; ISBN #0813367921 2000

“To be poor, working-class, or a person of color in the United States often means bearing a disproportionate share of the country's environmental problems. Starting with the premise that all Americans have a basic right to live in a healthy environment, Dumping in Dixie chronicles the efforts of five African American communities, empowered by the civil rights movement, to link environmentalism with issues of social justice. In the third edition, Bullard speaks to us from the front lines of the environmental justice movement about new developments in environmental racism, different organizing strategies, and success stories in the struggle for environmental equity.” From product description on Amazon.com website

Exploring the Dangerous Trades: The Autobiography of Alice Hamilton, M.D.

[Alice Hamilton](#) Northeastern University Press Reprint 1985

“Alice Hamilton, the first woman appointed to the faculty of Harvard Medical School, said she chose medicine as a career not because she was scientifically minded but because, as a doctor she could go anywhere she pleased and be quite sure that she would be useful. Her commitment to making her life count led her to combined roles as scientific researcher, skillful negotiator, labor organizer, and vocal and tireless crusader for social reform. In Exploring the Dangerous

Trades, she recounts the story of her remarkable life with wit and forthrightness.” From Occupational and Environmental Medicine website

### Guns, Germs and Steel: The Fates of Human Societies

Jared Diamond W.W. Norton & Company, March 1997

“Jared Diamond's goal is to explain why Eurasians conquered Africans, Australians, and Americans instead of the other way around, even though conventional social scientists shy away from such a fundamental question out of fear of what they might find. Since random accidents of personality and culture appear too trivial to account for the clash of continents' lopsided outcomes (e.g., a few hundred Conquistadors demolished the grandest empires of the New World), this leaves only two possible underlying causes: either the winners had better homelands or better bodies and brains. Deeming genetic explanations "racist" and "loathsome," Diamond sets out to reaffirm the equality of humanity by showing the inequality of the continents. To him, the three most important engines of history are location, location, and location.” By Steve Sailer, National Review

### Lasso the Wind: Away to the New West

Timothy Egan Knopf; 1998

“Timothy Egan, the New York Times Pacific Northwest correspondent, took a pilgrimage throughout the West and wrote a book that is a fusion of rich historical drama, a commentary of current social mores, and a cautionary tale of future environmental catastrophes. Throughout the new book, Egan injects wry humor, simmering anger, and an uncanny ability to gaze into a person's soul, living or deceased.” by Barbara Fenton, P&P Editorial Staff Peak & Prairie Rocky Mountain Chapter's Online Newsletter April / May 1999

### Silent Spring

Rachel Carson Mariner Books, ISBN: 0395683297 reprint ed. September 1994

“To make sure that the facts are known, she recounts them and documents them with 55 pages of references. She intends to shock and hopes for action. She fears the insidious poisons, spread as sprays and dust or put in foods, far more than the radioactive debris from a nuclear war. Miss Carson, with the fervor an Ezekiel, is trying to save nature and mankind from chemical biocides that John H. Baker (then President of the National Audubon society) identified in 1958 as “The greatest threat to life on earth.” By Lorus and Margery Milne; New York Times

### The Hawk's Nest Incident: America's Worst Industrial Disaster

Martin Cherniack, M.D. Yale University Press 1986

“In the early 1930s, the Union Carbide company dug a water tunnel along a river in West Virginia to generate power for a chemical plant. After extensive research, including interviews with survivors and relatives, Cherniack concludes that over 700 workers died from acute silicosis, a disease little known at the time. From his account we learn more about what happened to the mostly black, mostly migrant laborers, digging a three-mile silicon-laden tunnel, than contemporary accounts were able to provide. We learn of the futility of those long-ago law suits and congressional hearings and of the power of a large corporation (Union Carbide). And we learn of the sad state, back then, of environmental concerns.” Daniel LaRossa, Connetquot P.L., Bohemia, N.Y. Reed Business Information, Inc.

Fast Food Nation: The Dark Side of the All-American Meal

[Eric Schlosser](#) Houghton Mifflin 2002.

“This myth-shattering book tells the story of America and the world’s infatuation with fast food, from its origins in 1950s southern California to the global triumph of a handful of burger and fried chicken chains. In a meticulously researched and powerfully argued account, Eric Schlosser visits the labs where scientists re-create the smell and taste of everything - from cooked meat to fresh strawberries; talks to the workers at abattoirs with some of the worst safety records in the world; explains exactly where the meat comes from and just why the fries taste so good; and looks at the way the fast food industry is transforming not only our diet but our landscape, economy, workforce and culture.

Both funny and terrifying, Fast Food Nation will make you think, but more than that, it might make you realize you don’t want a quick bite after all. “

[www.mcspotlight.org/media/books/schlosser.html](http://www.mcspotlight.org/media/books/schlosser.html)

The Legacy of Chernobyl

Žores Aleksandrovič Medvedev W. W. Norton & Company 1992

This is an excellent, detailed and slightly technical book on the worst nuclear energy disaster in history. "A damning history of the Chernobyl affair, from its origins in the plant's primitive design and careless management to the economic and political crisis the accident precipitated."

—Clenn Garelik, *New York Times Book Review*

The Medical Detectives

Burton Rouche’ Plume 1991

This is a classic collection of epidemiological cases reported in the style of a 1950’s crime novel. The book touches on human health problems ranging from parasitic worms to food poisoning. A great read for anyone interested in epidemiology.

Deceit and Denial: The Deadly Politics of Industrial Pollution

Gerald Markowitz and David Rosner University of California Press 2002

This book summarizes in a very readable way the politics surrounding pollution and toxic products and processes.

"This is an especially important book at a time when industry is increasingly sponsoring risk research, and 'voluntary' evaluation is the norm. And it is all the more important at a time when new bio-engineered products are being marketed with little understanding of long-term clinical and subclinical risks."--Dorothy Nelkin, coauthor of *The DNA Mystique: The Gene as Cultural Icon* and *Body Bazaar: The Market for Human Tissue in the Biotechnology Age*

"In this time of community health crises, appalling environmental disasters, and political dismay, Gerald Markowitz and David Rosner have given us an urgently needed, galvanizing, hopeful history of triumphant public activism against the greatest odds. In the face of corporate cruelty and lies, labor and community activists, lawyers, and historians stopped polluters and saved countless lives. This vivid, splendid book floodlights past abuses as it charts the road toward a healing, safer future."--Blanche Wiesen Cook, author of *Eleanor Roosevelt*