

Urban and Environmental Policy 201
Environmental Health and Policy
Tuesdays and Thursdays, 3:05-4:30pm
Johnson 104
Spring 2018

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Course Overview

This course is designed to provide students with an understanding of the environmental factors impacting human and ecological health, including consequences of natural and human-made hazards. Environmental health is a rapidly growing and interdisciplinary field that involves both science and public policy. As such, you will learn the underpinning scientific concepts that structure the environmental health field while learning to apply environmental health science to environmental and public health related policies. Over the semester, we will cover environmental epidemiology (social and biological cause of disease), toxicology (science of poisons), and exposure assessment—the building blocks of environmental health sciences. We will also consider case studies of air pollution, pesticides, consumer products, and infectious disease; the identification of environmental hazards; and the assessment of various risks (including exposure to chemicals used in toys, food, and workplaces). You will gain an understanding of environmental health analytical and scientific methods. We will also explore ways that communities and policy-makers seek to address environmental health challenges. A common thread running through the course will be an examination of how exposure to environmental and health risks vary among different population groups, in the Los Angeles area, in the United States, and around the world. We will also explore the role of science in environmental policy-making, the enforcement of regulations, and the efforts of community groups to influence public policy.

Learning Objectives:

By the end of this course, you should be able to:

- 1) Demonstrate knowledge in major areas of environmental health;
- 2) Understand basic scientific methods for assessing the impacts of environmental hazards on human health;
- 3) Understand and use scientific frameworks to interpret environmental health information and data;
- 4) Critically assess environmental health issues appearing in scholarly publications and the popular press;
- 5) Work with classmates from other disciplines in order to realize the importance of multidisciplinary approaches for solving environmental health problems;
- 6) Applied scientific, social and political frameworks for understanding conflicts in the

realms of science, public health, environmental policy-making and regulation.

Newsworthy: Environmental health is often in the news. You will be considering scientific questions in context of social interest, social impact, and policy relevance.

Subscribe to Environmental Health News, a non-profit news organization that provides daily news digest on environmental health. You should read the headlines and pay additional attention to stories that connect with ongoing coursework; You can use EHN as one source for finding the story that you will post connected to the topic that day; Your group must post both the article and questions by the Sunday in advance of the class week where you will be leading discussion; More details discussed in class; <http://www.environmentalhealthnews.org/>

Textbook

Understanding Environmental Health: How We Live in the World; Second Edition by Nancy Maxwell

The textbook is available for purchase at the Oxy bookstore, but you can also find it used at online booksellers since it has been in print for a few years.

Please see the course Moodle for additional readings for each session. You are responsible for both textbook readings and those posted on moodle for each session. For the *newsworthy* section, you must read the news story posted by your colleague and be prepared to discuss their guiding questions in class.

Problem Sets: These will be posted each Tuesday night after class and are due by the following Sunday at 10pm each week. They will reflect the week's readings and lectures and give you an opportunity to work through important concepts.

Final Paper

Your final paper is an important part of your overall work in this class. You will be choosing your topics by spring break and writing a science-policy research paper that includes a literature review of the relevant scientific literature and a policy analysis. I will hand out a detailed description of the paper and we will discuss in class.

Course Requirements

Assignment	Contents	Grade Points	Week Assigned	Week Due
Participation	Class preparation, engagement in class; asking questions; active listening; attendance	5	--	--
Newsworthy	News, Env Health Science, & Policy	5	Ongoing by signup	
Homework Problem Sets	Problem Set	20	Weekly Posted by Midnight on Tuesdays	Weekly by Sunday night 11:59pm via moodle.
Midterm	Session topics through week 5	20	Week 6	In Class, March 1 st
Research Paper Topic	Paragraph description of final	5	Week 7	Week 8 (after Spring Break)

	paper topic and an annotated bibliography of at least 5 citations **			
Final Paper	Student selected topic; must be approved by instructor; Details discussed in class	25	Week 9 (everyone must meet with me to discuss topics)	Week 14, April 20 th
Final Exam	Comprehensive	20	--	--

*All problem sets will be completed via moodle and posted in hard copy, in case you hit a tech snafou

**Please follow Chicago (author-date) citation format for all bibliographies

Course Schedule

Readings from the textbook are noted. Additional readings are posted on the course moodle.

Week	Date	Topic	Readings
1	Tuesday, January 23 rd	Course Overview, Review of Course Requirements	Maxwell (Textbook), Chapter 1, pages 1-4
	Thursday, January 25 th	Situating Environmental Health: History, Definitions, and Context	Nash, Linda; "Purity and Danger: Historical Reflections on the Regulation of Environmental Pollutants"; <i>Environmental History</i> ; V.13, No. 4; October 2008; pp. 651-658 Maxwell, Chapter 2 2.1 Understanding Environmental Hazards to Human Health; pp. 5-18 Frumkin, Howard; "Introduction to Environmental Health", Chapter 1; in <u>Environmental Health from Global to Local</u> ; Jossey-Bass; 2016
2	Tuesday, January 30 th	Methods and Paradigms/Environmental Toxicology - Describe the concept of dose-response	Maxwell; Chapter 2; Toxicology, the Science of Poisons; pp. 18- 28 Friis, Robert; "Environmental Toxicology"; Chapter 3 (moodle)
	Thursday, February 1 st	- Understand the difference between <i>vulnerability</i> and <i>susceptibility</i> to environmental exposures - Calculate the average <i>daily dose</i> (intake) for a person exposed to contaminated media - Define variability and uncertainty and describe the impact of each on estimates of risk - Describe and give examples of how risk assessment is used to set regulatory standards for chemicals and biological hazards	<i>Newsworthy. Posted News Story on Environmental Toxicology –Be prepared to discuss your colleague’s post and discussion questions</i> Excerpts from Silent Spring by Rachel Carson Miller, Gary; Tox Box Bisphenol A, PAH’s, and Phthalates; pp. 126-127; 134-136, and 140-141. Johansen, Bruce; "The Inuit’s Struggle with Dioxins and Other Organic Pollutants"; <i>Project Muse</i> ; v26, n3; Summer 2002; p. 479-490; http://muse.jhu.edu/journals/american_indian_quarterly/v026/26.3johansen.pdf

3	Tuesday, February 6 th	<p>Environmental Epidemiology</p> <p>Lecture by Saskia Sassen, award winning author and scholar. Please plan to attend as her work is expansive and has been critical to social science framings of global change, including environmental change.</p>	<p>Maxwell, Chapter 2; Epidemiology; pp. 37-52</p> <p>Brown, Phil; “Popular Epidemiology: Community Response to Toxic-Waste Induced Disease in Woburn, Massachusetts; <i>Science, Technology, & Human Values</i>, Vol. 12, No. 3/4, Special Issue on the Technical and Ethical Aspects of Risk Communication. (Summer - Autumn, 1987), pp. 78-85.</p> <p>Friis, Robert, Chapter 2; Environmental Epidemiology (chapter posted)</p> <p>Saskia Sassen, Thorne Hall, 6pm. (https://www.oxy.edu/taxonomy/term/5456)</p>
	Thursday, February 8 th	<p>Guest Speaker, Rebecca Goldin; Sense About Science, USA (http://senseaboutscienceusa.org/about/);</p> <p>Readings will be announced prior. Please come prepared to engage with our excellent speaker.</p>	
	Tuesday, February 13 th	<p>Case Studies in Environmental Epidemiology/ Environmental Justice and Vulnerable Populations</p>	<p><i>Newsworthy. Posted News Story on Environmental Toxicology –Be prepared to discuss your colleague’s post and discussion questions</i></p> <p>Morello-Frosch, Rachel and Pastor, Manuel; “Environmental Justice and Vulnerable Populations”; in Frumkin, Howard; Environmental Health from Global to Local</p> <p>Wing et al; “Integrating Epidemiology, Education, and Organizing for Environmental Justice: Community Health Effects of Industrial Hog Operations”; <i>American Journal of Public Health</i>; v98, n8; August 2008; http://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2007.110486</p> <p>Environmental Tobacco Smoke, A Case Study. Links to readings/worksheet posted on moodle</p>
	Thursday, February 15 th	<p>Children’s Environmental Health and Endocrine Disruption</p>	<p>Endocrine Disruptors</p> <p>Stroustrup and Swan; “Endocrine Disruptors”; in <u>Textbook of Children’s Environmental Health</u>; pp. 325-332</p> <p>Vandenberg L, Colborn T, Hayes T, et al; “Hormones and Endocrine-Disrupting Chemicals: Low-Dose Effects and Nonmonotonic Dose Responses”; <i>Endocrine Reviews</i>; March 14, 2012; http://press.endocrine.org/doi/pdf/10.1210/er.2011-1050</p> <p>Case Study of DES use in pregnancy. Links posted on moodle.</p>

			<p>Please look at http://www.endocrinedisruption.org/; the website of The Endocrine Disruption Exchange</p> <p>Children’s Environmental Health Levin, Edward D.; “Developmental Toxicology and Children’s Environmental Health”; pp. 83-88; in <u>Textbook of Children’s Environmental Health</u></p> <p>Zota et al; “The Intrauterine Environment and Early Infancy”; pp. 117-123; in <u>Textbook of Children’s Environmental Health</u></p>
4	Tuesday, February 20 th	<p>Exposure Assessment, Risk Assessment, and the Precautionary Principle: Translating Science into Policy and Regulation</p>	<p><i>Newsworthy. Posted News Story—Be prepared to discuss your colleague’s post and discussion questions – this topic is endocrine disruption and children’s environmental health (2 groups)</i></p> <p>Maxwell; pp. 28- 37 and pp. 52-66</p> <p>Yost and Ryan; “Exposure Science, Industrial Hygiene, and Exposure Assessment”; Chapter 8 in <u>Environmental Health: From Global to Local</u></p> <p>Shettler, Barrett, and Raffensperger; “The Precautionary Principle: Protecting Public Health and the Environment”; http://www.healthandenvironment.org/articles/doc/540</p> <p>Excerpt from O’Brien, Mary; <u>Making Better Environmental Decisions: An Alternative to Risk Assessment</u>; MIT Press; May 2000</p> <p>Vogel, Sarah; “from ‘the dose makes the poison’ to ‘the timing makes the poison’: Conceptualizing Risk in the Synthetic Age”; <i>Environmental History</i>, v. 13; 2008</p>

5	Thursday, February 22 nd	Infectious Disease (Zoonotic and Vector-Borne Diseases)	Maxwell, Chapter 3; Living With Nature Farmer, Paul; “Social Inequalities and Emerging Infectious Disease”; <i>Emerging Infectious Diseases</i> ; v2, n4; Oct-Dec; 1996 (Please read this article closely) Feingold, Beth et al; “A Niche for Infectious Disease in Environmental Health: Rethinking the Toxicological Paradigm”; <i>Environmental Health Perspectives</i> ; 118(8); August 2010 Birnbaum and Jung; “Evolution in Environmental Health: Incorporating the Infectious Disease Paradigm”; <i>Environmental Health Perspectives</i> ; 118(8); 2010 Peachman, Rachel; “When Measles Spreads from Disneyland, It’s a Small World After All”; <i>Motherlode</i> ; January 21, 2015; http://parenting.blogs.nytimes.com/2015/01/21/when-measles-spreads-from-disneyland-its-a-small-world-after-all/?smid=fb-share&r=1
6	Tuesday, February 27 th	Infectious Disease Continued and Midterm Review	<i>Newsworthy</i> . Posted News Story—Be prepared to discuss your colleague’s post and discussion questions – this topic is infectious disease and environmental health
	Thursday, March 1 st	<i>In-Class Midterm Exam</i>	Midterm will cover content from weeks 1-6
7	Tuesday, March 6 th	Producing Manufactured Goods; Intro to Heavy Metals	Maxwell, Chapter 5; Producing Manufactured Goods Case Study on Flame Retardant Chemicals- Posted to Moodle
	Thursday, March 8 th	Guest Speaker, Kia Caldwell; <i>Health Equity in Brazil: Intersections of Gender, Race, and Policy</i>.- Please read posted moodle reading related to hear book, focused on HIV/Infectious Disease.	
	Tuesday, March 13 th	Spring Break, No Class	
	Thursday, March 15 th		
8	Tuesday, March 20 st	Heavy Metals: Lead and Mercury	<i>Newsworthy</i> . Posted News Story on Chemicals in Consumer Products –Be prepared to discuss your colleague’s post and discussion questions Lanphear; “Lead” and Grandjean, “Mercury”; in <u>Textbook of Children’s Environmental Health</u> ; pp. 262-280 Rosner and Markowitz, “A ‘Gift of God?’: The Public Health Controversy over Leaded Gasoline during the 1920s”; http://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.75.4.344 Kristof, Nicholas; “This is Your Brain on Toxins”; <i>New York Times</i> ; October 16, 2016; http://www.nytimes.com/2013/10/17/opinion/kristof-this-is-your-brain-on-toxins.html

			Drum, Kevin; “Lead: America’s Real Criminal Element”; <i>Mother Jones</i> ; February 2016; https://www.motherjones.com/environment/2016/02/lead-exposure-gasoline-crime-increase-children-health/
	Thursday, March 22 nd	Environmental Injustice of Beauty/Consumer and Personal Care Products	<p>Joint class with Econ 327, Economics of Gender</p> <p>Zota, A and Shamasunder B; “The Environmental Injustice of Beauty: Framing chemicals exposures through beauty products as a health disparities concern”; <i>American Journal of Obstetrics and Gynecology</i>; October 2017; http://www.ajog.org/article/S0002-9378(17)30862-1/fulltext</p> <p>Look through the links of the National Biomonitoring Program by the Centers for Disease Control; http://www.cdc.gov/biomonitoring/</p> <p>Sexton K, Needham L, and Pirkle J; “Human Biomonitoring of Environmental Chemicals: Measuring chemicals in human tissues is the ‘gold standard’ for assessing people’s exposure to pollution”; <i>American Scientist</i>; v92; 2004 http://www.cdc.gov/biomonitoring/pdf/AS_article_biomonitoring.pdf</p>
9	Tuesday, March 27 th	Producing Energy	Maxwell, Chapter 4
	Thursday, March 29 th	<p>Fossil Fuel Extraction: The Case of Los Angeles;</p> <p>Guest Speaker; Diane Gonzalez, UC Berkeley School of Public Health</p>	<p><i>Newsworthy. Posted News Story- Producing Energy—Be prepared to discuss your colleague’s post and discussion questions</i></p> <p>Sadd and Shamasunder, Drilling Down</p> <p>Shamasunder et al; “Community-Based Health and Exposure Study around Urban Oil Developments in South Los Angeles”; <i>International Journal of Environmental Research and Public Health</i>; January 2018; http://www.mdpi.com/1660-4601/15/1/138</p> <p>Readings from Dr. Gonzalez, see moodle</p>

	Tuesday, April 3 rd	Air Quality/Air Pollution	<p>Friis, Robert; “Air Quality”; Chapter 10; 244-267;</p> <p>Akinbami et al; “Trends in Asthma Prevalence, Health Care Use, and Mortality in the United States 2001-2010”; <i>NCHS Data Brief</i>; n94; May 2012; http://www.cdc.gov/nchs/data/databriefs/db94.pdf</p> <p>Barboza, Tony; “Air Quality rules tightened after cancer risk found to be 3 times higher”; <i>Los Angeles Times</i>; June 5, 2015; http://www.latimes.com/local/california/la-me-0606-air-toxics-20150607-story.html</p>
	Thursday, April 5 th	Guest Speaker, Dr. Jill Johnston, USC School of Public Health	<p><i>Newsworthy. Posted News Story- Air Pollution—Be prepared to discuss your colleague’s post and discussion questions</i></p> <p>Johnston and Hricko, “Industrial Lead Poisoning in Los Angeles: Anatomy of a Public Health Failure”; <i>Environmental Justice</i>, Volume 10, Number 5, 2017</p> <p>Additional Readings from Dr. Johnston posted on moodle.</p>
9	Tuesday, April 10 th	Producing Food/Pesticides and other organic chemicals- The cases of DDT and Chlorpyrifos	<p><i>Newsworthy. Posted News Story- Food Production and Pesticides—Be prepared to discuss your colleague’s post and discussion questions</i></p> <p>Maxwell, Chapter 6; pp. 237-250</p> <p>Robsen, Mark Gregory et al; pp. 494-495; DDT, An Example of Public Health Trade Offs; Ch. 18; in ed. Howard Frumkin <u>Environmental Health from Local to Global</u>;</p> <p>Shamasunder, Bhavna; “Chlorpyrifos Contamination across the Food System: Shifting Science, Regulatory Challenges, and Implications for Public Health”; in <u>The Intersection of Food and Public Health: Examining Current Challenges and Solutions in Policy and Politics</u>; Spring 2017; CRC Press/Taylor & Francis</p> <p>A Strong Case Against a Pesticide does not phase the EPA under Trump; https://www.nytimes.com/2017/05/15/health/pesticides-epa-chlorpyrifos-scott-pruitt.html</p> <p>Please look at the website for Pesticide Action Network, North America; http://www.panna.org/</p>
	Thursday, April 12 th	Producing Food/Modern Livestock Production Practices	<p><i>Newsworthy. Posted News Story on Producing Food/Modern Livestock Production –Be prepared to discuss your colleague’s post and discussion questions</i></p>

			<p>Maxwell, Page 250-277</p> <p>Pollan, Michael; “Our Decrepit Food Factories”; <i>New York Times Magazine</i>; December 16, 2007; http://michaelpollan.com/articles-archive/our-decrepit-food-factories/</p> <p>French, Hilary and Halweil, Brian; “Microbial Migrations”; <i>Orion Magazine</i>; Summer 2001; http://www.orionmagazine.org/index.php/articles/article/88</p> <p>Stashwick, Sasha; “KFC Gets An ‘F’ on Antibiotics Again”; September 20, 2016; https://www.nrdc.org/experts/sasha-stashwick/kfc-gets-f-antibiotics-again</p>
10	Tuesday, April 17 th	<p>Living in the World We’ve Made/Drinking Water and Water Systems</p> <p>Guest Speaker, Caryn Mandelbaum, Freshwater Program Director Staff Attorney</p>	<p>Maxwell; Chapter 7, pg. 303-309</p> <p>California’s Water Use is All Over the Map; In California, water use is all over the map</p> <p>Sledge, Daniel and Mohler, George; “Eliminating Malaria in the American South: An Analysis of the Decline of Malaria in 1930s Alabama”; <i>American Journal of Public Health</i>; v103, n8; August 2013; http://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2012.301065</p> <p>Ingraham, Christopher; “This is how toxic Flint’s water really is”; <i>Washington Post</i>; January 15, 2016; https://www.washingtonpost.com/news/wonk/wp/2016/01/15/this-is-how-toxic-flints-water-really-is/</p> <p>See posted moodle readings for readings from guest speaker</p>
11	Thursday, April 19 th	<p>Living in the World We’ve Made/Solid Waste and Its Management</p>	<p><i>Newsworthy. Posted News Story on Solid Waste Management –Be prepared to discuss your colleague’s post and discussion questions</i></p> <p>Maxwell, Chapter 7, pp. 309-321</p> <p>The Environmental Toll of Plastics; October 26, 2017; http://www.chn.org/plastic-environmental-impact-2501923191.html</p> <p>Simmons, Ann; “The world’s trash crisis, and why many Americans are oblivious”; <i>Los Angeles Times</i>; April 22, 2016; http://www.latimes.com/world/global-development/la-fg-global-trash-20160422-20160421-snap-htmlstory.html</p>
12	Tuesday, April 24 th	<p>Global Climate Change and Human Health</p>	<p><i>Newsworthy. Posted News Story on Climate and Health –Be prepared to discuss your colleague’s post and discussion questions</i></p>

			<p>Patz, Jonathan and Frumkin, Robert; "Climate Change and Human Health", Chapter 12 in ed. Howard Frumkin <u>Environmental Health from Local to Global</u>; 2016</p> <p>English et al; "Environmental Health Indicators of Climate Change for the United States: Findings from the State Environmental Health Indicator Collaborative"; <i>Environmental Health Perspectives</i>; v117, n11; November 2009; http://ehp.niehs.nih.gov/0900708/?utm_source=rss&utm_medium=rss&utm_campaign=0900708</p> <p>IPCC Report; Chapter 8; <i>Human Health</i>; https://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter8.pdf</p> <p>Wallace-Wells, David; "The Uninhabitable Earth: Famine, economic collapse, a sun that cooks us: What climate change could wreak — sooner than you think"; <i>The New Yorker</i>, July 2017; http://nymag.com/daily/intelligencer/2017/07/climate-change-earth-too-hot-for-humans.html</p>
	Thursday, April 26 th	The Built Environment and Health	<p><i>Newsworthy. Posted News Story on The Built Environment –Be prepared to discuss your colleague’s post and discussion questions</i></p> <p>Maxwell; page 322-346</p> <p>Jackson, Richard; Dannenberg, Andrew; and Frumkin, Howard; "Health and the Built Environment: 10 Years Later"; <i>American Journal of Public Health</i>; v103, n9; September 2013</p>
15	Tuesday, May 1 st	Final Exam Review and Course Wrap-Up	

COURSE POLICIES

Plagiarism Policy

Academic Integrity and Course Protocol:

Plagiarism consists of any form of passing off, or attempting to pass off, the knowledge or work of others as your own. It is a form of cheating. Examples of plagiarism include: unattributed quotations from a book, magazine or article; copying from the notes or essays of others; the submission of work actually written or dictated by others; and unattributed use of other people’s ideas. Remember, plagiarism includes information from books, newspapers, journals and the Internet. Plagiarism is grounds for failing the course and possible expulsion from the college. Students should consult Occidental’s student handbook for information on academic misconduct policy at the college: <http://www.oxy.edu/student-handbook/academic-ethics/academic-misconduct>. Ethical research requires that you properly document the sources you use. Even when you do not quote directly from another work, if reading that source contributed to the ideas presented in your paper, you should give the authors proper credit. If you have questions about how to cite your sources appropriately, please visit the writing center. For this course, please use in text parenthetical citation formats with (author, date) and include a complete bibliography at the end of your paper.

Use of Tablets, Laptops

If you are using a laptop to take notes, please sit in the front row. No phone use in the classroom. These are distracting to your neighbors as well as to yourself. If you need to text someone, go outside.

Classroom Community

Through this course, we will aim to learn from each other, through discussion, as well as through lecture. I will post the slides from lecture following each class, so you can plan on taking strategic notes rather than writing down the entire content from the slides. Your ideas and questions are encouraged, a diversity of ideas is welcome, and respect for your colleague's ideas is imperative. We expect our classroom to be a productive space for open, honest, and thoughtful discussion that recognizes and respects differences and acknowledges the broad range of knowledge we bring to the classroom and discussion. Please remember that our focus in this course is the issues, texts, course materials and presentations themselves, and not the personalities, identities, or opinions of other participants in the discussion.

Support Services

The college provides a set of resources to students to support them in learning. The [Writing Center](#) provides writing assistance to students to develop ideas, draft, and revise papers.

Students with documented disabilities who are registered with Disability Services are required to present their accommodation letter to the instructor at the beginning of each semester or as soon as possible thereafter. Any student who experiences significant physical or mental impairments may contact Disability Services at (323) 259-2969 to learn about available services and support. More information is available at <http://www.oxy.edu/disability-services>

The Emmons Wellness Center also provides important support services and can help you address issues of stress, medical and mental health, and overall well-being. For more information, see their website at <http://www.oxy.edu/emmons-wellness-center>