

# ENVH 572: Environmental Risk and Society

Autumn 2017

ENVH 572 is intended for graduate students who wish to better understand the social and cultural context of scientific risk assessments of environmental and occupational health hazards. ENVH 572 will be offered concurrently with ENVH 472. Students enrolled in ENVH 572 are expected to complete all of the requirements for ENVH 472. In addition, these students will normally meet with the instructor one hour per week to analyze and discuss risk-related documents that have been developed by advocacy or special-interest groups, together with documents developed by government agencies or available in the peer-reviewed scientific literature. Each student will be responsible for producing a detailed critique of one or more documents. In addition to the learning objectives listed for ENVH 472, at the end of the course the student will be able to

1. Apply principles and concepts associated with risk assessment, risk perception and risk communication to advocacy and special-interest literature.
2. Demonstrate critical thinking in regard to how the writings of advocacy or special-interest groups misrepresent scientific information to promote a particular agenda.
3. Demonstrate in-depth knowledge and original insight regarding a major piece of advocacy or special-interest literature.

## Assignments

- Complete all assignments required for ENVH 472.
- Submit a 4-6 page written report on one advocacy/special interest document
- Make an oral presentation on one advocacy/special-interest document to the instructor and other 572 students
- Read and discuss reviews of advocacy/special-interest documents prepared by other students
- Participate in a group presentation on advocacy/special-interest literature to students enrolled in ENVH 472

## Grading [in place of grading listed for ENVH 472]

- 572 discussions, oral presentations and written report (20%)
- 472 written assignment and presentation – individual/team project (25%)
- Midterm exam (20%); final exam (30%); homework (5%)

## Readings

The focus for this assignment will be the herbicide glyphosate (*N*-(phosphonomethyl)glycine), known commercially as Roundup®. We will examine several issues associated with the health risks and benefits of this chemical, including its ability to cause cancer and its incorporation into genetically-modified crops. The following are samples of writings about Roundup. Specific assignments will be made in consultation with the instructor.

“Glyphosate – The New Bogeyman” Published on line at *Science-Based Medicine*, Dec 31, 2014

<https://www.sciencebasedmedicine.org/glyphosate-the-new-bogeyman/>

“Weed-Whacking Herbicide Proves Deadly to Human Cells” Published on line by *Scientific American*, 6/23/09

<http://www.scientificamerican.com/article/weed-whacking-herbicide-p/>

“Roundup and Risk Assessment” Published by *The New Yorker*, April 10, 2015

<http://www.newyorker.com/news/daily-comment/roundup-and-risk-assessment>

“California to List Glyphosate (Roundup) as Cancer-Causing” *Beyond Pesticides*, September 10, 2015

<http://www.beyondpesticides.org/dailynewsblog/2015/09/california-to-list-glyphosate-roundup-as-cancer-causing/>

# Environmental Risk and Society

ENVH 472

Richard Fenske, Professor ([rfenske@uw.edu](mailto:rfenske@uw.edu))  
Dept of Environmental & Occupational Health Sciences  
Health Sciences Bldg, F-226A (543-0916)  
Surakshya Dhakal, Teaching Assistant ([sdahkal@uw.edu](mailto:sdahkal@uw.edu))  
Office Hours: to be arranged

Autumn 2017  
3 credits  
MWF, 9:30-10:20  
South Campus Ctr-301

## Course Description

This course examines the development and uses of environmental risk analysis, particularly in regard to public health concerns. Environmental risk analysis is practiced within a context of social and cultural values, leading to differing perceptions, rankings of risks, and challenges in effective risk communication. Risk assessment and risk management procedures will be examined in light of several themes, including the relationship between natural and technological hazards, the long-term consequences of environmental contamination, public participation processes, and movements towards environmental justice. Specific topics include mercury, pesticides, dioxins, children's exposure to lead, and Mad Cow disease.

## Learning Objectives

At the end of this course, students will be able to

- Describe the primary components of current risk assessment and risk management procedures used for environmental health hazard evaluation and resolution;
- Explain how social and cultural values shape perceptions and communication of environmental risks;
- Identify the key aspects of public participation processes aimed at resolving environmental risk conflicts;
- Apply critical thinking to emerging issues in environmental risk;
- Demonstrate "environmental literacy" through analysis of news media reports of environmental health risk issues;
- Apply risk assessment principles to a specific environmental health risk controversy.

## Required Reading (available at UW Bookstore in the South Campus Center)

- *Calculated Risks*, JV Rodricks, Cambridge University Press, 2nd Edition, 2007
- Additional readings will be posted on the Canvas site

## Recommended Reading

- *Mad Cows and Mothers Milk*, W Leiss & D Powell, McGill-Queens UP, 2<sup>nd</sup> Edition, 2004

## Assignments and Examinations

- Homework = 10%
- Midterm exam (take home) = 25%
- Final exam =35%
- Written assignment and presentation (individual/team project) =30%

**Academic Integrity**

Students at the University of Washington (UW) are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity.

The UW School of Public Health (SPH) is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, and other misconduct are serious violations of the University of Washington Student Conduct Code (WAC 478-120). We expect you to know and follow the university's policies on cheating and plagiarism, and the SPH Academic Integrity Policy.

<http://sph.washington.edu/students/academicintegrity/>

Any suspected cases of academic misconduct will be handled according to UW regulations. For more information, see the UW Community Standards and Student Conduct website.

**Access and Accommodation**

Your experience in this class is important to me. If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course.

If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at 206-543-8924 or [uwdrs@uw.edu](mailto:uwdrs@uw.edu) or [disability.uw.edu](http://disability.uw.edu). DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s) and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law. For more information:

<http://depts.washington.edu/uwdrs/faculty-resources/syllabus-statement/>

## ENVH 472: Environmental Risk and Society

Date	Instructor	Topic	
<i>September</i>			
27	W Fenske	Environmental health risks	Lecture
29	F Fenske	Risk assessment overview	Lecture
<i>October</i>			
2	M Fenske	Exposure pathways	<i>Discussion: Cohen Hubal paper</i>
4	W Fenske	Exposure analysis	Lecture
6	F Fenske	Dose-response analysis	Lecture
9	M Fenske	Animal bioassays	<i>Discussion: Aldridge paper</i>
11	W Fenske	Cancer and risk	Lecture
13	F Fenske	Risk perception	Lecture
16	M Burbacher	Children's environmental health	Lecture
18	W Burbacher	Mercury and risk	Lecture
20	F Fenske	Environmental justice	Lecture
23	M Fenske	Risk management	Lecture
25	W Fenske	Proposition 65	Lecture
27	F Fenske	Risk management trade-offs	<i>Discussion: Gregory paper</i>
30	M Fenske	Project discussion breakout	
<i>November</i>			
1	W Fenske	Pesticide risk: alar case study	<i>Discussion: 60 Minutes Video</i>
3	F Fenske	Pesticide risk assessment	Lecture
6	M Fenske	Pesticides and human testing	Lecture
8	W Fenske	Dioxins and risk	Lecture
10	F	<i>Holiday -- Veterans Day</i>	
13	M Fenske	Dioxins: risk communication	<i>Discussion: Ben &amp; Jerry's</i>
15	W Fenske	Dioxins and Agent Orange	Lecture
17	F Fenske	Science, policy and doubt	Lecture
20	M Fenske	Health risks of lead	Lecture
22	W Fenske	Children and lead exposure	<i>Discussion: Needleman paper</i>
24	F	<i>Holiday -- Thanksgiving</i>	
27	M Fenske	Mad Cow disease – 1	Lecture
29	W Fenske	Mad Cow disease – 2	<i>Discussion: Oprah Winfrey</i>
<i>December</i>			
1	F	Grad student presentation	Graduate students
4	M Fenske	Student case reports – 1	
6	W Fenske	Student case reports – 2	
8	F Fenske	Student case reports – 3	
13	W	<i>FINAL EXAM [8:30-10:20, SOCC 301]</i>	