

Topics in Health and Environment: Risk, Health, and Safety

Department of Human Ecology

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In this course, we will explore many scientific, cultural, and perceptual aspects of environmental risk issues. We will discuss, in depth, toxicological and epidemiological concepts, psychological aspects of risk perception and coping, and influences on self-protective behavior. We will also spend time discussing risks and the media, and how to communicate with the public about risks.

This course has three main learning goals. When you have completed the class, you should have a demonstrable understanding of the basic principles of toxicology and epidemiology. You should be able to analyze the characteristics of a hazard and identify likely influences on perception of risk; and you should be able to put together a practical plan to communicate about those risks with the public.

The success of the class depends very much on thoughtful discussion, and active participation by the members of the seminar. That, in turn, requires that you have read, and thought about the books and articles assigned. The emphasis in this class is on critical thinking about risk issues.

Course Learning Objectives

This course is intended to meet the following learning goals for the Environmental Policy, Institutions, and Behavior major, offered by the Department of Human Ecology.

Goal 1: . . . understand and analyze the varied perspectives offered by the social and natural sciences regarding the causes and consequences of social, ecological, and environmental change.

- 1.5 Evaluate major issues in health, including race, gender, and socio-economic position, food and nutrition access and policies, cultural factors, and understandings of risk and vulnerability.

Goal 2: Students will acquire the skills to use appropriate conceptual and methodological tools to structure inquiries about human-environment interactions:

- 2.1 Assess the relevant contexts for addressing the question this problem, at the appropriate spatial, temporal, and organizational scale(s).
- 2.2 Identify the relevant biological, historical, sociocultural, governance and political issues that need to be addressed.
- 2.3 Identify what constitutes valid and relevant evidence to address the question and demonstrate an ability to understand and work with quantitative information.
- 2.4 Conduct ethical primary and secondary research using appropriate methods and considering relevant community norms.
- 2.5 Analyze and interpret evidence.
- 2.8 Identify different decision-making processes and criteria for selecting from among alternatives.
- 2.9 Evaluate the alternatives' environmental and differentiated social consequences.
- 2.10 Identify relevant audiences, determine communication goals and communicate the results in oral and/or written form in a manner effective for each targeted audience.
- 2.11 Work effectively in team settings

Goal 3: Students will undertake their work guided by ethical considerations. They will identify their own values with respect to environmental, health, and food issues. They will evaluate and address the ethical dimensions and implications of related problems, assessments, plans, and communication, including their

differentiated social impacts. For more about these goals, see:

http://humanecology.rutgers.edu/Documents_PDF/Learning%20Goals%20EPIB.pdf

Grading

Grading will be based on class assignments/homework (10%), two exams, (40%), written group projects (40%), and oral presentations (10%).

Books/Readings

You will need to purchase one book: The Dose Makes the Poison: A Plain-Language Guide to Toxicology, 3rd Edition (Paperback) Publisher: Wiley; (2011). You will read most of the chapters in the book and will answer questions related to them, so this is not simply optional reading material. Used copies are available on Amazon. Just make sure to get the **third** edition. All other readings are available through the Canvas site for the course: <https://canvas.rutgers.edu/>

Class Assignments

Because reading and thinking about the material before class is so important, we are providing some incentive (beyond your own insatiable thirst for knowledge) to do both. As part of your overall grade, you will be required to submit answers to questions about the material using the Canvas Submit Assignment function. You should bring your answers to class so that you may refer to them and take notes as we talk about important issues. We expect a submission for each chapter or article *before* the class date assigned. No late assignments will be accepted. All the articles will be available in electronic form through Canvas.

Group Projects

In addition to the chapters and articles assigned to the entire class, each seminar member will be assigned to a group with a specific risk topic to review, summarize, and discuss with the class on a particular day. The assignment for the group is to prepare a written summary of the main scientific, social, political, and communications issues related to their problem. Based on their written summary, the group will design risk communication materials to address the problem and present these to the class.

We will use American Psychological Association (APA) formatting for references in all written reports. For guidance in how to use APA formatting see: <http://libguides.rutgers.edu/writing>. Please refer to the group project rubric for other details.

Attendance

Class meets Tuesdays from 10:20 to 1:20 in Blake 131. Please arrive on time and silence your cell phones and put them away for the duration of class time. If you feel unwell, please DO NOT come to class. If you will be absent from a class for any reason, please report your absence through the University Absence Reporting Website <https://sims.rutgers.edu/ssra>. The University also recommends that you contact your professors directly to let them know of your absence.

Safety Practices

This is a class called Risk, Health, and Safety. Seriously, please follow all Rutgers Community Safety Practices <https://coronavirus.rutgers.edu/health-and-safety/community-safety-practices/>

Masks

Both of your professors are fully vaccinated. Both will be wearing masks when lecturing. Wearing a mask is also required of all students. You may not attend class without one. Please come prepared. This is going to be an interactive class, and we will expect you to speak. We will need to be patient with one another as we try to make ourselves understood. If you cannot understand what is being said, please don't hesitate to politely indicate this.

Contact Information

Dr. Hallman's office hours (202 Cook Office Building) are by appointment. Dr. Hallman's office phone number is: 848-932-9227. His email is: hallman@sebs.rutgers.edu

Dr. Robson's office hours (186 Foran Hall) are by appointment. Dr. Robson's office number is: 848-932-6276. His email is robson@sebs.rutgers.edu

Academic Support Services

- Rutgers has a variety of resources for academic support. For more information, check the [Academic Support website](#).
- Rutgers has Learning Centers on each campus where any student can obtain tutoring and other help. For information, check the [Learning Center website](#).
- Rutgers also has a Writing Center where students can obtain help with writing skills and assignments. Learn more at the [Writing Center website](#).
- Many library resources are available online. Assistance is available through phone, email, and chat. For information, check the [Rutgers Libraries website](#).

Rutgers Health Services

Rutgers Health Services is dedicated to wholistic health for the body, mind, and spirit. It's staff of qualified clinicians and support staff deliver services at several locations throughout the New Brunswick-Piscataway area. For more information, check the [Rutgers Health Services website](#).

Accommodations for Accessibility

Requesting accommodations

Rutgers University welcomes students with disabilities into all the University's educational programs. To receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation. More information can be found in the [Documentation Guidelines](#) section of the [Office for Disability Services](#) website.

If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the [Registration Form](#) on the Office for Disability Services website.

Go to the [Student section of the Office of Disability Services](#) website for more information.

Basic Needs Resources

If you have difficulty affording groceries or accessing sufficient food, or lack a safe and stable place to live, please contact the Rutgers Student Food Pantry and the Dean of Students (contacts below). If you are comfortable doing so, please notify Dr. Hallman or Dr. Robson, as we may be able to provide additional support.

Rutgers Student Food Pantry

<http://ruoffcampus.rutgers.edu/food/> 848-932-5500

College Ave Student Center, Room 115 (126 College Ave). Check their website for hours and additional locations.

The Rutgers Student Food Pantry is dedicated to helping all Rutgers students in need of food, no questions asked. Students are provided with groceries that typically last about one week.

Dean of Students Office

<http://deanofstudents.rutgers.edu/> 848-932-2300

88 College Avenue, New Brunswick, NJ 08901

Mon-Fri, 8:30am-5:00pm

The Dean of Students Office at Rutgers University-New Brunswick provides solutions, services, and support to help students navigate Rutgers University. The Office serves as a student support network by providing advocacy, problem resolution, and critical incident intervention for those times when additional assistance is needed. Please call to schedule an appointment to meet with a representative from the Dean's office.

Academic Honor and Integrity

Plagiarism will not be tolerated in any form. This includes the improper citation of materials from any source, including the Internet. If you have any questions about how to properly attribute information, words or ideas produced by others, please bring them up in class; chances are that others have the same questions.

The Rutgers University Policy on Academic Integrity considers cheating, fabrication, facilitation of academic dishonesty, plagiarism, and the denial of access to others of materials or information as violations of academic integrity. All violations will be dealt with according to the procedures described in the policy found at <http://academicintegrity.rutgers.edu/> The consequences of violations of academic integrity range from loss of class credit to expulsion from the University.

Note: Readings and Assignments are DUE PRIOR to the Date Listed.

- Sept. 6 **Introduction to Risk Issues – Hallman and Robson.** Begin reading *The Dose Makes the Poison*. Start collecting warning labels. Review Dr. Robson's Lecture slides.
- Sept. 13 **Basic Toxicological Concepts – Robson.** Read the Introduction to the 3rd Edition, Preface to the 2nd Edition, and Chapters 1-2 and pages 31-35 in Chapter 3 of Ottoboni, *The Dose Makes the Poison*. Remember to answer questions related to the chapters and submit assignment before class. Read FAQ – *Dihydrogen Monoxide*, answer questions at the end, and submit assignment before class. Read *Effects of gaseous and solid constituents of air pollution on endothelial function*.
- Sept. 20 **Toxicological Concepts II – Robson.** Read chapter 4 and chapter 6 of *The Dose Makes the Poison*. Remember to answer questions related to the chapter and submit assignment before class. Download a copy of the [EPA's Exposure Factors Handbook](#). Pick one food and write a paragraph describing the variations in exposure that you find. Submit the paragraph before class
- Sept. 27 **Epidemiological Concepts – Robson.** Read chapter 10 of *The Dose Makes the Poison*. Read Introduction to Epidemiology. Complete worksheet on major causes of death in the United States. Read *The Burden of Disease and the Changing Task of Medicine*. Read: *Universal Health Coverage: An Opportunity To Address Antimicrobial Resistance?* Read: *Surveillance for Coccidioidomycosis*. Read: *Racial/Ethnic Disparities in HIV Preexposure Prophylaxis Among Men Who Have Sex with Men*.
- Oct. 4 **Mutagens, Carcinogens, & Regulating Toxins – Robson.** Read pages 36-45 from Chapter 3, and Chapters 7, 8, and 9 of Ottoboni, *The Dose Makes the Poison*. Remember to answer questions related to the chapters and submit before class. Write a brief summary of *Intuitive Toxicology* and submit before class. Read Introduction (pages 3-10) to the 12th report on Carcinogens. Choose *one* carcinogen [known or reasonably anticipated] to report on in class. Pick one that begins with the same first letter as your last name. Read (but don't summarize): *How cancer can kill you*, *The Story of the Laws Behind the Labels, Parts I, II, and III*; *The 'Poison Squad' and the Advent of Food and Drug Regulation*; *Sugar, a Cautionary Tale*; *The Apple Bites Back*, *Asbestos*, *Cancer Prevention and Control*, *Polish 40 Year Study*, *The Town Manville Built*.
- Oct. 11 **First hour: Exam 1**
Second hour: Group work on Student Presentations
Turn in preliminary list of references for Paper 1 before class (use APA formatting: <http://libguides.rutgers.edu/writing>)
- Oct. 18 **Student Presentations – Paper 1**
- Oct. 25 **Perception of Risks – Hallman.** Read and summarize: Brewer: *Goals for Risk Communication*; Philley, *Acceptable Risks?* Submit assignment. Read (but don't summarize): Chapter 11 of *The Dose Makes the Poison*.
- Nov. 1 **Misinformation – Cuite.** Read and summarize: West and Bergstrom, *Misinformation in and about science*. Submit assignment before class. **Please Vote Today.**
- Nov. 8 **Communicating about Risks – Hallman.** Read and summarize: Ropeik, *Bounded Rationality*. Lindheim, *Distress Signals*; Weinstein, *Optimistic Biases about Personal Risks*. Submit assignment before class.
- Nov. 15 **Risks and the Media.** Read and summarize: *The Different Worlds of Scientists and Reporters*; Sandman, *Telling Reporters about Risk*; Adams, *The Role of Media Relations in Risk Communication*; Weigold, *Communicating Science*. Submit assignment before class.

Nov. 22 Thursday Classes

Nov. 29 **Warnings – Hallman.** Read and summarize: Wilde: *Intervention by Education*; Roser: *Is it a Drink? No, it's Cleaning Fluid*; Collins, *Why Do We Ignore Safety and Warning Signs – Sometimes With Tragic Results?*
Remember to bring in warning labels Submit assignment before class.

Dec. 6 **Student Presentations – Paper 2 - Robson.** Submit paper and all supporting materials to Canvas.

Dec. 13 **Exam 2**