

Global Environmental Change, Health, and Policy

Winter 2022

Department of Public Policy

Central European University

No. of credits: 2

Course e-learning site: [CEU Moodle](#)

Schedule: Friday, 1:30-3:10

Instructor: Tiziana Centofanti, Visiting professor, Department of Public Policy and Dept. of Environmental Sciences and Policy (CEU)

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Office hours: Friday 11.30-13.00 (or by appointment)

Course description

Humans are the primary drivers of global environmental changes such as climate change, ozone depletion, desertification, and ocean acidification. In this course, students will be introduced to a range of global environmental changes and their consequences for human health and well-being. Based on global and diverse cases, motivating readings, and engaging lectures, you will learn how we can assess the effectiveness of policies designed to address and reduce environmental threats to our health. Using an interdisciplinary perspective, we will identify the major challenges posed by climate change and unsustainable practices; and use risk assessment to evaluate the health of the population, advocate for environmental justice, and improve global health. The contribution of citizens' participation in informing, preventing, and mitigating environment-related health problems will be analyzed through case studies.

The course will culminate in a simulation game on global negotiations on mercury contamination as a case to explore the prospect of collective action to manage environmental risks. The game reflects the dynamics of the real decisions confronting the United Nations Environment Programme, which initiated discussions about the need for a global treaty on mercury.

Learning outcomes

In this course, students will learn about, and reflect upon:

1. Describe the major categories of environmental health determinants that impact population health
2. Explain current environmental risk assessment methods
3. Identify how human factors such as perceived risk, values, and trust influence the approaches used to manage environmental health risks
4. Define the role of risk communication in environmental health
5. Describe approaches and policies for assessing, preventing, and managing environmental hazards that pose risks to human health and safety
6. Identify, evaluate, and effectively communicate personal thinking regarding policies and plans that seek to make public health policy more democratic

Evaluation

- Class participation 10%
- Short tests and written assignments 40%
- Final paper 50%

Brief Summary of graded course requirements

One minute paper: it is a very short, in-class writing activity in response to an instructor-posed question, which prompts students to reflect on the day's lesson and provides the instructor with useful feedback.

Commentary: A commentary is a set of critical notes on a text. You are requested to read the following paper [Royte E. 2018. We Know Plastic Is Harming Marine Life. What About Us? - National Geographic.](#) and write a commentary about it. For further instructions on how to write a commentary see [this](#). The commentary should be max 850 words.

Final Paper: Term paper. The student will write an imaginary/mock interview between a scientist and a policy maker. The scientist provides the facts and the policy maker is supposed to use the facts to plan the policy. The interview should be based on a real environmental health policy issue for which the student will search the relevant facts needed to write the interview. Max. word count 2500.

Suggested Text Books

- David, B. 2006 Environmental Health and Policy. Open University Press. London.
- Johnson, B. L and Lichtveld, M. Y. Environmental Policy and Public Health. 2017. CRC Press, London.
- Frumkin, H. 2016. Environmental Health. Jossey-Bass, San Francisco.

Class structure

Week 1: Environmental health policy, what it is and why we need it

Readings:

- Huber, M., Knottnerus, J.A., Green, L., van der Horst, H., Jadad, A.R., Kromhout, D., Leonard, B., Lorig, K., Loureiro, M.I., van der Meer, J.W. and Schnabel, P., 2011. How should we define health?. *Bmj*, 343, p.d4163.
- Frenk, J., Gmez-Dants, O. and Moon, S., 2014. From sovereignty to solidarity: a renewed concept of global health for an era of complex interdependence. *The Lancet*, 383(9911), pp.94-97.

Week 2: Overview of Environmental Health Policy

Readings:

- Ball, D. 2006 Environmental Health and Policy. Chapter 3.
- Arrow, K. J., Cropper, M. L., Eads, G. C., Hahn, R. W., Lave, L. B., Noll, R. G., ... & Stavins, R. N. (1996). Is there a role for benefit-cost analysis in environmental, health, and safety regulation?. *Science*, 272(5259), 221-222.

Week 3: Impacts of Climate change

Readings:

- Huynen, M.M., Martens, P. and Hilderink, H.B., 2005. The health impacts of globalization: a conceptual framework. *Globalization and health*, 1(1), p.14.
- Daily, G.C., Sderqvist, T., Aniyar, S., Arrow, K., Dasgupta, P., Ehrlich, P.R., Folke, C., Jansson, A., Jansson, B.O., Kautsky, N. and Levin, S., 2000. The value of nature and the nature of value. *Science*, 289(5478), pp.395-396

Week 4: Air and water pollution

Readings:

- Villanueva, C.M., Kogevinas, M., Cordier, S., Templeton, M.R., Vermeulen, R., Nuckols, J.R., Nieuwenhuijsen, M.J. and Levallois, P., 2014. Assessing exposure and health consequences of chemicals in drinking water: current state of knowledge and research needs. *Environmental health perspectives*, 122(3), pp.213-221.
- Schraufnagel, D.E., Balmes, J.R., De Matteis, S., Hoffman, B., Kim, W.J., Perez-Padilla, R., Rice, M., Sood, A., Vanker, A. and Wuebbles, D.J., 2019. Health benefits of air pollution reduction. *Annals of the American Thoracic Society*, 16(12), pp.1478-1487.

Week 5: Perception and evaluation of risk

Readings:

- Peters, D.H., 2014. The application of systems thinking in health: why use systems thinking?. *Health research policy and systems*, 12(1), pp.1-6.
- Slovic P. Trust, Emotion, Sex, Politics and Science: Surveying the Risk-assessment Battlefield. In *The Perception of Risk*. Edited by Paul Slovic. London: Earthscan Publications, 2000, pp. 390-412.

Week 6: Vulnerable and susceptible populations

Readings:

- Ziraba, A.K., Haregu, T.N. and Mberu, B., 2016. A review and framework for understanding the potential impact of poor solid waste management on health in developing countries. *Archives of Public Health*, 74(1), pp.1-11.
- Case study: Corburn J. *Tapping local knowledge to understand and combat Asthma*. (Cambridge, MA: MIT Press, 2005), pp.111-144.

Week 7: Collaborative approaches to environmental health - Citizens science

Readings:

- Bonney, R., Phillips, T.B., Ballard, H.L. and Enck, J.W., 2016. Can citizen science enhance public understanding of science? *Public Understanding of Science*, 25(1): 2-16.
- Corburn J. Street Science: Characterizing Local Knowledge. *In* Street Science: Community Knowledge and Environmental Health Justice, Cambridge, MA: MIT Press, 2005, pp. 47-77.
- Case study: Corburn J. Tapping local knowledge to understand and combat Asthma. (Cambridge, MA: MIT Press, 2005), pp.111-144.

Week 8: Environment-related noncommunicable and infectious diseases

Readings:

- Patz, J.A., Daszak, P., Tabor, G.M., Aguirre, A.A., Pearl, M., Epstein, J., Wolfe, N.D., Kilpatrick, A.M., Foufopoulos, J., Molyneux, D. and Bradley, D.J., 2004. Unhealthy landscapes: policy recommendations on land use change and infectious disease emergence. *Environmental health perspectives*, 112(10), p.1092.
- Fauci, A.S., 2005. Emerging and reemerging infectious diseases: the perpetual challenge. *Academic Medicine*, 80(12), pp.1079-1085.

Week 9: Environmental health at the international level

Readings:

- Johnson, Berry L. *Environmental Policy and Public Health*. CRC Press. Chapter 5.

Week 10: Review class and preparation for the negotiation game

The Negotiation game is the Mercury Negotiation Simulation (or, simply, The Mercury Game). It is a multiparty role-play designed to help participants actively learn about science-policy interactions in the context of global environmental treaty-making challenges. The game reflects the dynamics of the real decisions confronting the United Nations Environment Programme, which initiated discussions about the need for a global treaty on mercury.

Week 11- 12: Negotiation game

In this class students will play the Mercury game.