Global environmental change, health, and policy

Winter 2019

School of Public Policy

Central European University

No. of credits: 2

Course e-learning site: CEU Moodle

Schedule: Mondays 11.00-12.40

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

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Office hours: Wednesdays 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, nitrogen fertilization, 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. The focus of this course is on the technological, scientific, and socioeconomic production of environmental health risks and how various stakeholders contest the science and policy within this framework. Using an interdisciplinary perspective, we will explore the increasing number of illnesses linked to global environmental changes such as asthma, cancer, and emerging infectious diseases. We will then examine benefits of policies and technologies to mitigate environment-related health issues. 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. Describe the tools that are used to analyze health impacts of environmental exposures such as exposure assessment, risk assessment, risk management and precautionary principle
3. Describe what citizen science is and what role it plays in consensus-based environmental decision-making
4. Describe approaches for assessing, preventing, and managing environmental hazards that pose risks to human health and safety
5. Identify how human factors such as perceived risk, values, politics, and ethics influence the approaches used to manage environmental health risks

Evaluation

- In-class participation to discussion, one minute paper(s), commentary (850 words) 20%
- Presentation 30%
- Final Exam 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 this paper Davenport C. and Friedman L. 2018. The E.P.A.'s Review of Mercury Rules Could Remake Its Methods for Valuing Human Life and Health -The New York Times. and write a commentary about it. For further instructions on how to write a commentary see this. The commentary should be max 850 words.
Presentation: Students will research and present a topic relevant to the negotiation game.
Final Exam: There are two options for the final exam. Students can decide which of the following two options they want to chose for their final exam. Option 1: Written in-class exam. The exam is made of ten questions, each question is worth ten points. Option 2: 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 needs to search the relevant facts needed to write the interview. Max. word count 2000.

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.
- Woods, N.D., Konisky, D.M. and Bowman, A.O.M., 2008. You get what you pay for: Environmental policy and public health. Publius: The Journal of Federalism, 39(1), pp.95-116.

Week 2: Health geography, your health depends on where you live

Readings:

- Huynen, M.M., Martens, P. and Hilderink, H.B., 2005. The health impacts of globalisation: 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.
- Dummer, T.J., 2008. Health geography: supporting public health policy and planning. Canadian Medical Association Journal, 178(9), pp.1177-1180.

Week 3: Risk management and precautionary principle

Readings:

- Stirling, A., 2007. Risk, precaution and science: towards a more constructive policy debate: Talking point on the precautionary principle. EMBO reports, 8(4), pp.309-315.
- Ball, D. 2006 Environmental Health and Policy. Chapter 5.

Week 4: Perception and evaluation of risk

Readings:

- 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.
- Slovic P. Perception of Risk. Science, 236 (1987): 280-285.
- Johnson, B. L and Lichtveld, M. Y. Environmental Policy and Public Health. 2017. Chapter 19.

Week 5: 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 6: Reading Week

Week 7: Collaborative approaches to environmental health - Joint Fact Finding

Readings:

- Ehrman J. R., and Stimson B.L. Joint Fact Finding and the Use of Technical Experts. *In* The Consensus Building Handbook. Edited by Lawrence Susskind, et al. London: Sage Publications, 1999, pp. 375-399.
- Karl, H.A., Susskind, L.E. and Wallace, K.H., 2007. A dialogue, not a diatribe: effective integration of science and policy through joint fact finding. Environment: Science and Policy for Sustainable Development, 49(1): 20-34.

Guest speaker: Dr. Balzs Blint, Environmental Social Science Research Group, Budapest, Hungary.

Week 8: Climate change and human health

Readings:

- Forman, G., 2015. Climate change already makes us sick. Alternatives Journal, 41(2), p.14.
- Patz, J.A., Campbell-Lendrum, D., Holloway, T. and Foley, J.A., 2005. Impact of regional climate change on human health. Nature, 438(7066), p.310.

Week 9: Water and health

Readings:

- Malik, O., Hsu, A., Johnson, L., Sherbinin, A. (2015). "A global indicator of wastewater treatment to inform the Sustainable Development Goals (SDGs)". Environmental Science and Policy. 48: 172?185.

Case study: Pattanayak, S., Poulos, C., Yang, J., Patil, S. (2010). "How valuable are environmental health interventions? Evaluation of water and sanitation programmes in India". Bull World Health Organ. 88: 535?542.

Week 10: Environmental health at the International level

Readings:

- Williams, B and Taylor, S (2017). "Squaring the circle: health as a bridge to global solidarity in the Sustainable Development Goals". Archives Disease Child. 0: 1?4.

- Abel, G. (2016). "Meeting the Sustainable Development Goals leads to lower world population growth". PNAS. 113.
- Forbat, J. (2015). "Environmental Health Policies in Europe: Successes and Failures in Switzerland, Germany, and Belgium". International Journal of Environment and Health. 7.

Week 11: Preparation for the negotiation game and group presentation

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 was evaluated in a journal publication: Stokes, Leah C., and Noelle E. Selin. "The mercury game: evaluating a negotiation simulation that teaches students about science-policy interactions." Journal of Environmental Studies and Sciences 6.3 (2016): 597-605. In this class, students will discuss the negotiation game through group presentations to prepare for the negotiation game that will be played the following week.

Week 12: Negotiation game

In this class students will play the Mercury game.