Zurich-Basel Plant Science Center

PhD Program in Science & Policy E: Contributing to Policy Action – Analysis and Communication of Risks and Uncertainties

Lecturers: Tobias Krüger (Humboldt University Berlin), Christoph Beuttler (Stiftung Risiko-Dialog St. Gallen), Sergio Bellucci (TA Swiss), Anthony Patt (ETH Zurich)
Location: ETH Zurich, CLA J 1
Dates: May 30 to June 1, 2016
Credit Points: 2 ECTS
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Course Overview

The reliability of scientific data and models are frequently subject of public and political debate. The aim of this course is to understand the concepts of risk, uncertainty and ignorance in relation to these data and models in order for course participants to be more aware of and work more effectively at the science-policy interface. During the first two workshop days, lectures will introduce the concepts of risk, uncertainty and ignorance and apply these in discussion to the course participants' problems. In exercises, the participants will get first hands-on experiences with applying quantitative (risk-type) uncertainty models to practical examples.

The second part of the course intents to provide insight into the actual work of scientists and agencies considering risks and uncertainties at national and international scale. Here guest speakers will present and discuss a) integrated risk and uncertainty assessment in international climate change policy such as applied by the IPCC and how this knowledge can be integrated and used as decision tool when considering different policy options, and b) the Swiss Centre for Technology Assessment (TA Swiss) and its role as well as approaches and public communication in assessing risk and chances of technologies while contributing to parliamentary processes.

The third course day is dedicated to the aspect of risk and uncertainty communication. After an introduction into the relevant tools and theories, students will be offered insights from past projects of the Risk-Dialogue foundation St.Galllen. In the Afternoon students will have the opportunity to test their own strategies for risk communication via case study work.

Course Objectives

- Apply quantitative models to measure and propagate uncertainties
- Understand the role of risk-based evidence as a decision tool/ framework for policy choices (e.g. IPCC, Technology Assessment)
- Develop effective strategies for communicating risk and uncertainty.

Course Program

Part 1: Conceptions of risk, uncertainty and ignorance

- Sources of uncertainty in scientific data & models
- Types of uncertainty analysis
- Quantitative models of uncertainty
- Comparison & limits of quantitative models of uncertainty
- Integrating uncertainty and risk in decision framework of policy analysis

Part 2: Communication of risks and uncertainties

- Aspects of risk perception, behaviour, uncertainty and trust
- Successful risk communication, concepts, tools and theories
- Real world examples of risk communication and best practices

Individual performance and assessment: In order to obtain the ECTS points, each participant is required to actively participate in the case-study work, discussions, and presentations during the course days. Participants are expected to study the provided literature beforehand and submit their individual homework as indicated during the course.

Number of Participants: A maximum of 16 students will be able to enrol in this course. Students of the PhD program Science and Policy have priority.