**Zurich-Basel Plant Science Center**

# Specialized PhD Program in Science and Policy
## for Life, Earth and Agricultural & Engineering Sciences

**How can scientists bridge the gap between the scientific community and the policy world?**

**How can they increase the impact of their research on decision-making?**

**How can the dialogue with policymakers, politicians and the public be improved?**

The PhD program in Science and Policy deals with the interface of science and policy and helps students to elaborate tools and skills for engaging with science-policy institutions active in policymaking and implementation. This PhD program has been developed by an initiative of plant scientists and has been expanded to include PhD students from life, earth and engineering sciences disciplines. This program has been approved as a structured training program by the University of Zurich, University of Basel and ETH Zurich, as well as the Zurich Life Science Graduate School.

«The better scientists understand political decision processes, the better they are able to formulate research projects that will advance political decisions. That's why this program is a unique opportunity.»
Andreas Hauser, FOEN

## Organizer

**Zurich-Basel Plant Science Center**
**Tannenstrasse 1, 8092 Zurich**
**www.plantsciences.ch**

## Who can join the program?
Are you motivated by the chance to do excellent research in the life, earth and engineering sciences and by the opportunity to work at the interface of policy, society and science? Are you positioning yourself in an academic career or are you oriented towards policy interfaces, governmental institutions or NGOs?
This PhD program may be the right choice for you.

**The PhD program is open to everybody!**
Please contact us for information on enrollment, particularly if you are not part of a research group based at the Faculty of Science (University of Zurich), the Department of Environmental Systems Science, the Department of Biology or the Department of Earth Sciences (ETH Zurich), or the Department of Environmental Sciences (University of Basel).
**psc_phdprogram@ethz.ch**

Applicant must hold a Master's degree or equivalent in life, earth and engineering sciences and state motivation in joining the program. Qualification or previous experiences in policy work are not mandatory. For the registration form and further details, please visit:
**www.plantsciences.ch/education/science_policy**

For open PhD positions please check our website or our member websites or apply at
**www.lifescience-graduateschool.ch**

## Deadlines
1st of July and December

# Curriculum

## Policy workshops
2 ECTS each

- **Evidence- based policymaking**
- **Stakeholder engagement**
- **Communicating science**
- **Building political support**
- **Risk communication**
- **Understanding policy evaluation**

## Policy skill training
1 ECTS

- **System thinking**
- **Scenario-building and modelling**

## Introduction to political sciences
Lecture or course, 1 ECTS

## Mentoring courses
1 ECTS

- **Careers in science or policy, or both?**

## Lecturers and case study supervisors

Carefully selected top scientists, national and international experts from governmental offices, NGOs, private organisations and politicians contribute to lectures, workshops, interviews and case studies. With their practical expertise, they add to the hands-on course experience. Students get direct insight into the world of policymaking.
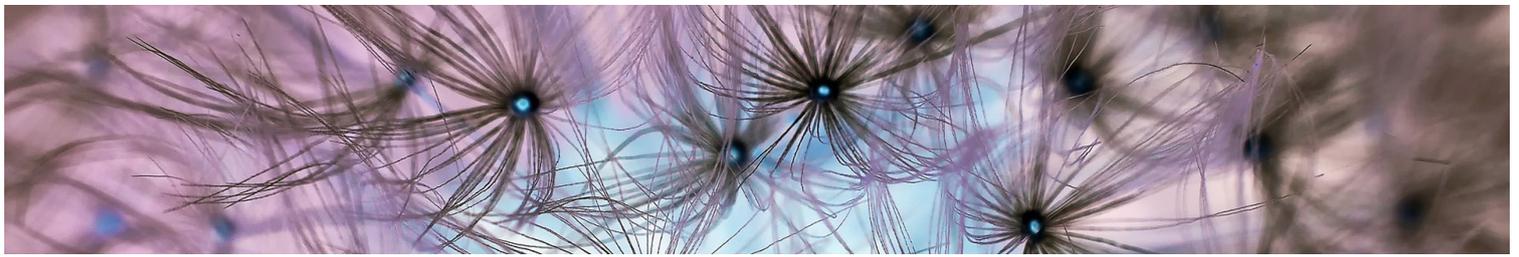
## Competencies

- Improve your communication of scientific evidence with policymakers, media and the public
- Learn to involve different stakeholder groups in a participative process
- Understand the general process of policy development and endorsement
- Increase your network of peers and policy implementing organizations in your own field of research

## Program structure

The program accredits 12 ECTS, which can be acquired with:

- Policy workshops (at least 4 out of 6 have to be chosen)
- Basic lecture in political science
- Courses on research skills
- Courses on transferable skills, including policy skill training
- Mentoring courses, e.g., Careers in science or policy, or both?
- Poster or oral presentation at the international conference (max. 1 ECTS)

The policy workshops are block courses, repeated every 1.5 years. Each workshop consists of lectures, hands-on training and group work on case studies.

# Content of courses

## Evidence-based policymaking
- Discuss the concepts of evidence-based policies and environmental governance
- Analyze real-life examples of regional or national policies
- Explore how policy-relevant evidence is produced and incorporated in practice

Evidence-based policymaking involves a balance between professional judgment and expertise, on the one hand, and the use of valid, reliable and relevant research evidence, on the other hand.

## Stakeholder engagement
- Gain a basic understanding of stakeholder engagement
- Identify and analyze stakeholders
- Apply different levels of involvement; understand their strengths and weaknesses

Implementing policy programs often involves changing habits and adopting new techniques. The obvious way to convince people of the benefits of proposed changes is to involve them as equal partners in the process of analysis of the issue and in the development of policy proposals.

## Communicating science
- Identify and communicate aspects of your research to different stakeholder groups
- Know and adequately use different communication tools
- Comprehend science communication as an ongoing dialogue

Communicating with the media is increasingly seen as an important aspect of facilitating dialog between scientists and policymakers.
In this course, students will practice how to communicate science in an effective way to the media, policy-makers and a wider public.

## Building political support
- Know the relevant policy and decision making sectors in Switzerland and beyond
- Understand the common procedures for establishing and monitoring measurable national goals and targets
- Know ways to build political support in Switzerland

In recent decades, different ways of bridging science and policy have been explored. In this course, the students shall learn what kind of actions are necessary to implement policies in different sectors, incl. public agencies, the civil society or the private sector.

## Risk communication
- Apply quantitative models to measure uncertainties
- Understand the role of risk-based evidence as a framework for policy choices (e.g., IPCC, technology assessment)
- Develop effective strategies for communicating risk and uncertainty

Applied concept of risk and uncertainty help to improve the effectiveness of science in informing policymakers. In this course, students will learn how to analyse and communicate risk and uncertainty.

## Understanding policy evaluation
- Know different types of policy evaluation and their methods
- Understand impact models in the context of policy evaluation
- Gain insights on how policy evaluation helps to improve policy implications
- Apply policy evaluation logics in a case study

Based on the theoretical and methodological introduction on policy evaluation conducted by social scientists, participants reflect on how natural science can contribute to policy evaluation and on how research can become socially relevant.

## System thinking
- Design a reference system for your case study based on applying critical systems heuristics (CSH) boundary-setting questions
- Explore possibilities and limitations of making factual and value judgments, and boundary judgments associated with the 'wickedness' of your case study

In this course, students will develop skills in system thinking by using ideas from boundary critique and critical systems heuristics.

## Scenario-building & modelling
- Develop and test scenario methods specific to foresight practice
- Couple modelling and scenario-building through a role-playing game

In this course, students will address scientific conceptions and visions of the future by practicing scenario-building and modelling.

# Careers in science or policy, or both?

This mentoring course offers a perspective on possible career paths at the interface of science with policy and/or society. Recent graduates from the PSC PhD program in Science and Policy, as well as professionals will be invited to present career paths in government, politics, NGOs or private companies.

In the discussions, we elaborate with the speakers what kind of skills, experiences and qualities are sought in the respective sector and how their responsibilities impact and working day looks like

**Read more:** blogs.ethz.ch/Science_and_Policy

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«This PhD program fills a gap for those who already know before or during the PhD that they want to work at the science/policy or science/society interface.»
Prof. Nina Buchmann, ETH Zurich

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«One of the most helpful courses I ever attended in my education!»
Jasmin Schubert, PhD student at University of Zurich

# General information

The Zurich-Basel Plant Science Center (PSC) is a competence center linking and supporting the plant science research community of the University of Zurich, ETH Zurich and the University of Basel. PSC promotes fundamental and applied research in plant sciences. The center seeks creative approaches for research mentoring, coursework for students and postdocs, and provides platforms for interactions with peers, policy-makers, industry, stakeholders and the general public

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## Degree
Students will obtain their PhD from the University of Zurich, ETH Zurich or the University of Basel and will receive an additional Program Certification from the Zurich-Basel Plant Science Center.

## Length of the program
2–3 years

## Registration
www.plantsciences.ch/education/science_policy

## Contact
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