



Life Science Zurich Graduate School

Training in Scientific Integrity – a guideline to the course modules offered in the graduate school and its PhD programs

Imprint

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Authors:

Dr. Melanie Paschke, Zurich-Basel Plant Science Center
Dr. Anna Deplazes Zemp, Ethikzentrum, University of Zurich
Dr. Susanna Bachmann, Life Science Zurich Graduate School

1 Overview on the Training in Scientific Integrity

The Life Science Zurich Graduate School offers training in scientific integrity to all PhD students enrolled in any of the PhD programs. The training catalogue is composed by mandatory and recommended parts and can be tailored to the specialized needs of PhD students. Some of the courses are organized by LSZGS for all enrolled PhD students; some are organized specifically by a PhD program but with some open seats to PhD students of other programs. In some of the PhD programs under the umbrella of Life Science Zurich Graduate school it is mandatory to accredit 1 ECTS from one ethical training. Please check the regulations of your specific program or contact your coordinator for more details. In all other programs we highly recommend that you accredit 1 ECTS through additional ethical training from this catalogue.

Note: This catalogue does not comply the information about the ethical training that medicine students in the LSZGS PhD programs need to follow. Please contact <http://www.ctc-zkf.usz.ch/forschung/gcp-kurse/Seiten/default.aspx>

Module	ECTS
Mandatory: Introduction to Scientific Integrity [2 hours] (organised by LSZGS); Date: spring and autumn term Visit in the first year of studies as soon as possible. The document of participation in this event is needed at the registration for the doctoral examination.	None
Course Modules on Research Integrity:	
<ul style="list-style-type: none"> • Self-study platform: Research Integrity [offered by Graduate Campus, University of Zurich; open to all PhD students]; Date: all year: http://www.grc.uzh.ch/courses/integrity_en.html (Open to UZH students) • 751-1040-00L Introduction to Ethical Inquiry in Responsible Conduct, Paschke & Buchmann [organised by Zurich-Basel Plant Science Center and Life Science Zurich Graduate School; open to all PhD students]; Date: spring term • Hands-on Training in Research Integrity, Paschke [organised by Graduate Campus, University of Zurich] • Ethics for Life Scientists, Leach Scully [organised by Neuroscience Program and Life Science Zurich Graduate School]; Date: spring term • Bio 630 Research Ethics for Life Scientists, Deplazes Zemp [organized by MD PhD/MSc Program] Date: spring term • Good Scientific Practice and Ethical Issues Raised by Genetic Research and – Technology, Deplazes Zemp [organized by organised by Life Science Zurich Graduate School]; Date: autumn term • 851-0180-00L Research Ethics, Achermann [organized at D-Biol, ETH Zurich]; Date: autumn term 	0 1 1 1 3 1 1
Hands-on training on good research practice:	
<ul style="list-style-type: none"> • ACCESS AND BENEFIT SHARING: Research with biological material from abroad – International regulations and good research practice (CBD, ABS, IT FAO & CITES), Biber-Klemm & Martinez [organized by Zurich-Basel Plant Science Center]; Date: autumn 2016, 2018 • Basic education in laboratory animal science for experimenters [organized by Institute of Laboratory Animal Science, University of Zurich]; Date: all year round The courses provide the basics required by law to perform animal experimentation: http://www.ltk.uzh.ch/services.html • Laboratory Safety Training is offered regularly at ETH Zurich: https://www.ethz.ch/services/en/service/safety-security-health-environment/training-and-continuing-education/course-calendar.html 	1

2 Course Abstracts

PhD Course: 751-1040-00L Introduction to Ethical Inquiry in Responsible Conduct, ETH Zurich

Instructors: Dr. Melanie Paschke , Zurich Basel Plant Science Center / Prof. Nina Buchmann, ETH Zurich

Priority: Plant Sciences, PhD Students in Life Science Zurich Graduate School

Credit Points: 1 ECTS

Course Content:

When studying at a university PhD students are joining the scientific community and, therefore, have to learn about the codes of professional and responsible conduct in research. In this course, we want to increase the knowledge about the specific rules, regulations and guidelines of responsible conduct in their research fields but also rise awareness for potential conflicts of interest and give practical suggestions on how to act in cases of uncertainty on e.g. questions of authorship and giving credits, data treatment and interpretation, communication and responsibility in the public. Students will discuss case studies with a conflict potential or a dilemma. They will work together in teams, discuss the codes of conduct and values established in the scientists' community, and apply them to the case studies. The teams have to agree on actions to be taken for each case.

A special focus is to practice and applying the process of ethical inquiry after Bebeau (1995) as a tool to analyze ethical issues and reach a well-reflected decision in ethical ambiguous situations, e.g.:

- Scientific Integrity, Error and Negligence in Science
- Conflicts in Authorship Practices
- Questions of Data Treatment
- Influence of Values on Data Interpretation
- Social Responsibility of Scientists (e.g. 'Communication with the public')

The course offers every participant a very strong tool to feel confident to decide in similar or completely different situations by considering the background, personal and institutional values as well as perspectives and conflicts of different stakeholders. A strong focus is on communication, dialogue and negotiation. The approaches in the course include online-based self study, role play, reflection in an individual journal as working out of a presentation to defend the own solution.

Learning Objectives:

- Students know the questions, conflicts and ethically ambiguous situations that may arise in research.
- Students can apply codes of responsible conduct in research, i.e., they understand and can apply the professional values and ethical norms of their profession.
- Students know how to deal with and communicate in ambiguous situations.
- Students will develop a professional attitude towards responsible conduct in research.

Individual Performance and Assessment:

You will need to hand in a group case study journal and individual case study journal that will be individually assessed by the lecturers. Individual presentation of case study is also part of the assessment.

Link: <http://www.plantsciences.uzh.ch/teaching/phdplantscience/courses.html>

PhD Course: Hands-on Training in Research Integrity, Graduate Campus, University of Zurich

Instructors: Dr. Melanie Paschke , Zurich Basel Plant Science Center

Priority: none

Credit Points: 1 ECTS

Course Content:

When studying at a university PhD students are joining the scientific community and, therefore, have to learn about the codes of professional and responsible conduct in research. In this course, we want to increase the knowledge about the specific rules, regulations and guidelines of responsible conduct in their research fields but also rise awareness for potential conflicts of interest and give practical suggestions on how to act in cases of uncertainty on e.g. questions of authorship and giving credits, data treatment and interpretation, communication and responsibility in the public. Students will discuss case studies with a conflict potential or a dilemma. They will work together in teams, discuss the codes of conduct and values established in the scientists' community, and apply them to the case studies. The teams have to agree on actions to be taken for each case.

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- Students can apply codes of responsible conduct in research, i.e., they understand and can apply the professional values and ethical norms of their profession.
- Students know how to deal with and communicate in ambiguous situations.
- Students will develop a professional attitude towards responsible conduct in research.

Individual Performance and Assessment:

Furthermore, part of the assessment is self study and successful completion of the [Research Integrity Online Course](#). Additionally, you will need to hand in a portfolio reflecting the self study and case study work that will be assessed by the instructors. Individual presentation of case study at the second course day is also part of the assessment.

Link: <http://www.ueberfachliche-kompetenzen.uzh.ch/de/phd-courses/FS16/ResearchIntegrity.html>

PhD Course: Ethics for Life Scientists, Life Science Zurich Graduate School

Instructor: Prof. Jackie Leach Scully, Newcastle University

Priority: organized two times per year for PhD students of Neuroscience or Cancer Biology. Some places are open for students of Life Science Zurich Graduate School

Credit Points: 1 ECTS

Course Content:

The aim of this Blockkurs is to provide you with some of the conceptual tools with which to engage with the ethical problems presented by the neurosciences, and by other life sciences, today. By the end of the three days you will:

- understand some of the key ethical issues in research
- know about the major ethical theories used to analyse these issues
- know the major areas of ethical difficulty in research using animals and humans
- have considered some of the emerging ethical issues in contemporary life science, and how they relate to older questions
- have had practice in using basic ethical concepts in group discussion
- know where to go for further information.

There will be a focus on neurosciences and on research, but we will range broadly over other areas and over both theoretical, practical and social issues. The teaching methods of the course combine lectures, plenary and small group discussion. You are expected to participate actively in these discussions.

Contents:

- The basic tools and approaches of ethics, medical ethics and bioethics
- The ethics of using animals in scientific research
- Humans in scientific and medical research: Nuremberg, Helsinki, and after
- Special cases of ethical problems in human research
- Storage of data: biobanks, confidentiality, and public interest
- Scientific fraud and misconduct
- Neuroethics in general
- Issues in brain imaging
- Neuromanipulation and neuroenhancement
- Concluding discussion: does science have ethical or social responsibility?

The language of the course is English.

Prior Knowledge: none

Link: <http://www.lifescience-graduateschool.ch/index.php?id=96>

PhD Course: BIO 630 Research Ethics for Life Scientists, University of Zurich

Instructor: Dr. Anna Deplazes Zemp, Institute of Biomedical Ethics and History of Medicine, UZH

Credit Points: 3 ECTS

Priority: MD PhD/MSc Program students

Course Content:

This weekly course aims at raising the students' awareness of and interest in ethical issues in biomedical research and it provides opportunities to discuss ethical dilemmas and moral responsibilities of scientists. A brief general introduction to ethics and moral reasoning should help students to identify and assess ethical issues. In sessions dedicated to more specific topics we discuss the concepts of good scientific practice and responsibility in science. The students is introduced to various laws and code of conducts regulating scientific practice in Switzerland. We address different types of scientific misconduct, the interaction between science and society as well as questions raised by research with human beings and animals. The course includes case studies, expert talks, paper discussions of actual cases of ethical dilemmas in science, different types of exercises and it closes with a final test.

Prior Knowledge: none

Individual Performance and Assessment:

- Regular attendance
- Solving exercises, reading papers
- Presenting a case study in a small student group
- Passing the final test

PhD Course: Good Scientific Practice and Ethical Issues Raised by Genetic Research and – Technology, Life Science Zurich Graduate School

Instructor: Dr. Anna Deplazes Zemp, Institute of Biomedical Ethics and History of Medicine, UZH

Credit Points: 1 ECTS

Priority: PhD Students Life Science Zurich Graduate School

Course Content:

This course consists of three blocks.

The first part aims at providing students of the life sciences with a basic understanding of the nature and characteristics of ethical issues and dilemmas. Different approaches and tools to deal with such issues will be introduced.

The second part is dedicated to scientific integrity and good scientific practice. The main principles will be introduced again, but the main focus will be set on the discussion of specific issues and cases of ethical dilemmas in the lab (with reference to various SI guidelines).

The third part focuses on ethical issues in the context of genetics and gene technology, topics include: the controversy about genetically modified crops, research with human genomes and application of this research e.g. in prenatal tests or direct-to-consumer genetic tests.

Prior Knowledge: ideally the student should already have attended the mandatory introductory event “Introduction to Scientific Integrity”

Individual Performance and Assessment:

The course is structured into lecture-parts with presentations by the instructor and practical parts, in which the course-participants work in small groups.

At the end of the first day, students will have time to prepare a short presentation about a case study on scientific misconduct for the second day. In addition they will read a paper that will be discussed in the form of a journal club during the second day.

Link: <http://www.lifescience-graduateschool.ch/index.php?id=96>

PhD Course: 851-0180-00L Research Ethics, ETH Zurich

Instructor: Dr. Gérald Achermann, ETH Zurich

Credit Points: 1 ECTS

Course Content:

This course has its focus on the responsible conduct of research (RCR) and the ethical dimensions of the biological and biomedical sciences.

Learning Objectives:

The main goal of this course is to enhance the student's ability to:

- recognize and identify ethical issues and conflicts,
- analyze and develop well-reasoned responses to the kinds of ethical problems a scientist is likely to encounter.

Additionally, students will become familiar with regulations and ethical guidelines relevant for their research field on the international, governmental, institutional and professional level.

To achieve these objectives, teaching methods will include lectures, discussions, case study work (alone and in groups), moral games, paper work and exercises.

Link:

<http://www.vvz.ethz.ch/Vorlesungsverzeichnis/lerneinheitPre.do?lerneinheitId=101038&semkez=2015W&lang=de>

Research with biological material from abroad – International regulations and good research practice (CBD, ABS, IT FAO & CITES)

Instructors: Dr. Susette Biber-Klemm / Dr. Sylvia Martinez

Credit Points: 1 ECTS

Priority: Plant Sciences, Science and Policy

Course Content:

Research with non-human biological material that comes from abroad is increasingly more than a matter of competence in biological studies and methodology. To a growing extent, scientists need capacities in legal and procedural matters in order to correctly access such samples. CBD and ABS, IT, together with PIC and MAT, and CITES are essential acronyms which to many might seem an alien secret code.

The course will elucidate the background of these acronyms that refer to the Convention on Biological Diversity, the Plant Treaty and the Convention on International Trade in Endangered Species. The overall goal is to increase awareness among young scientists and inform about the relevant international conventions and their regulations that affect research projects with biological material from abroad.

Training will focus on the Convention on Biological Diversity (CBD), its Nagoya Protocol on Access to Genetic Resources and Benefit Sharing (ABS), the International Treaty on Plant Genetic Resources for Food and Agriculture (IT FAO), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Learning Objectives:

The main goal of this course is to enhance the student's knowledge about:

- How to correctly access genetic resources and share benefits for biodiversity research,
- The multi-lateral system of the FAO plant treaty and on the requirements for importing material under CITES in general, and especially for plant genetic resources. The course will also inform about available support and counseling services for scientists in Switzerland.
- Additionally, students will become familiar with regulations and ethical guidelines relevant for their research field on the international, governmental, institutional and professional level.

Prior Knowledge: No prior knowledge is required.

Individual Performance and Assessment: Students will work in groups and actively analyse each others research projects with biological material from abroad or work with case studies provided for the course.

Link: <http://www.plantsciences.uzh.ch/teaching/phdplantscience/courses.html>