

Guidelines

for Research Integrity and Good Scientific Practice at the ETH Zurich¹

of 14 November 2007 (as of 25 October 2011)

The ETH Zurich Executive Board

pursuant to Art. 4 Paragraph 1g of the "ETH Organization Ordinance of 16 December 2003"² issues the following guidelines:

Preamble

At the ETH Zurich research is founded on intellectual honesty. Researchers at the ETH Zurich are committed to scientific integrity and truthfulness in research and peer review.

Chapter 1: General

Art. 1 Purpose

The purpose of these guidelines is to define guiding principles for the planning, execution, presentation and assessment of research work.

Art. 2 Scope

¹ These guidelines apply to all members of the ETH Zurich involved in scientific research (incl. students and technical staff).

² Within the context of international research cooperation, in particular in very large research consortia, provisions other than those set forth in these guidelines may be applicable (e.g. concerning authorship); however, the members of the ETH Zurich involved in such scientific projects must, at all times, adhere to the principles of good scientific practice.

¹ These Guidelines have been elaborated particularly on the basis of the following documents:

- a) Swiss Academy of Medical Sciences: "Integrität in der Wissenschaft Richtlinien der SAMW für wissenschaftliche Integrität in der medizinischen und biomedizinischen Forschung und für das Verfahren bei Fällen von Unlauterkeit vom 1. Juni 2002" (⇒ www.samw.ch)
- b) Swiss Academy of Sciences: Draft rules «Grundsätze zur wissenschaftlichen Integrität und zum Umgang mit wissenschaftlichem Fehlverhalten» submitted at the experts' meeting „Wissenschaftliche Integrität“ on 20 March 2007 in Bern; and
- c) Department of Health & Human Services, Office of Research Integrity (ORI): "Introduction to the responsible conduct of research", by Nicholas H. Steneck (2004), (⇒ <http://ori.dhhs.gov/documents/rcrintro.pdf>).

² RSETHZ 201.021 (⇒ www.rechtssammlung.ethz.ch)

Art. 3 Definitions

As used in these guidelines, the terms listed below will have the following meaning:

- a. *Primary data*: the original unanalysed data collected from experiments or other sources;
- b. *Materials*: samples and products of any kind, collected or created during research work in tangible (e.g. prototypes) or intangible (e.g. programme codes) form;
- c. *Project manager*: the project managers are the individuals responsible for the execution of a scientific project, e.g. professors, senior scientists, senior assistants and post-doctoral fellows. Depending on the size of the project, this function may be performed by one or more individuals.
- d. *Research project*: any kind of research work or service contract.

Chapter 2: Research Integrity

Section 1: Research Planning

Art. 4 Selection of research objectives and methods

The researchers may freely select their research objectives and methods, but they must heed the ethical limits to freedom of research.

Art. 5 Hazard assessment

The ETH Zurich researchers should reflect on the potential social and ecological hazards associated with their research work. They should be willing to get involved in public debates on the issues concerned.

Art. 6 Compliance with legal and institutional regulations

Every ETH Zurich researcher is required to comply with all regulations applicable to his field of research (please see list of examples in Appendix 1).

Art. 7 Duties of project management

Within the framework of the research project, the project manager should take the lead role in guiding and supervising the junior scientists. In particular, he must ensure that all research project participants are aware of these guidelines.

Art. 8 Supervision of junior scientists

¹ It is incumbent upon the research project manager to ensure that

- a. the junior scientists are provided with sufficient supervision and materials and premises during the estimated duration of the project;
- b. doctoral students prepare a written research plan in due time as set forth in the "Regulations for Doctoral Studies"³ and the associated "Implementing Regulations".⁴

² To the best of their abilities, the supervisors should support the junior scientists in their efforts to become independent researchers.

³ SR 414.133.1 (⇒ www.admin.ch/ch/d/sr/sr.html) und RSETHZ 340.31

⁴ RSETHZ 340.311

Art. 9 Conflicts of interest

All project participants are required to disclose any potential conflict of interest to the project management, the sponsor or the Vice-president for Research and Corporate Relations⁵.

Art. 10 Rights in third-party projects

The rights to the research results from third-party financed projects undertaken at the ETH Zurich will be specified in a contract⁶ concluded with the sponsor before the start of the project.

Section 2: Execution of Research Work

Art. 11 Collection, documentation and storage of primary data

¹ All research project participants are responsible for the correctness of the data they collect and for compliance with the applicable regulations.

² All steps in the treatment of primary data (statistical analyses, reorganizations, etc.) must be documented in a form appropriate to the discipline in question (e.g. laboratory logs, other data carriers) in such a way as to ensure that the results obtained from the primary data can be reproduced completely.

³ Primary data must be filed and safeguarded in such a way as to ensure that they can be securely retrieved for later use or verification:

- a. Lab logs must be stored in a secure place and, if necessary, kept under lock and key;
- b. Electronic data must be stored on appropriate data carriers and encrypted, if necessary;
- c. Data to be disclosed only to a limited number of persons should be clearly identified as such ("confidential"), and stored in an appropriate manner.

⁴ The project management is responsible for data management (data collection, storage, data access, compliance with data protection requirements, etc.). In particular, it should ensure that, following completion of the project, the data and materials are retained for the period prescribed in the discipline, and are duly destroyed within the period prescribed by law, if appropriate.

Art. 12 Rights to the primary data and materials

¹ Unless otherwise agreed upon with external project partners, primary data and materials⁷ from research projects undertaken at the ETH Zurich generally remain the property of the ETH Zurich.

² ETH Zurich researchers are not required to disclose the primary data and materials to non-participants before having carried out their own analysis, evaluation and publication, with the exception of disclosure to committees.

³ In every research project, after agreement with the responsible project manager, a professor will determine, in writing, the participants who, after having left the project team or the ETH Zurich, should retain access to the primary data or materials, and the purposes for which they may use these data and materials.

⁵ As adopted by the Executive Board of the ETH Zurich in its resolution of 31 March 2009, effective as of 1 Mai 2009

⁶ Pursuant to the "Research Contract Guidelines" (RSETHZ 440.31)

⁷ As adopted by the Executive Board of the ETH Zurich in its resolution of 31 March 2009, effective as of 1 Mai 2009

Section 3: Publication of Research Results

Art. 13 Principles of publication and access

¹ Planned and ongoing projects and ongoing patent application procedures must be kept in confidence.⁸

² Research results should be made public, except in cases where confidentiality obligations or contractual obligations prohibit publication.⁹

³ Following completion of the project and publication of the research results, third parties wishing to repeat the experiments and verify the results will, as a rule, be provided with the data required to do so.

⁴ ETH Zurich researchers should, as much as possible, publish their work in accordance with the "principle of open access"; however, the requirements of the "ETH Open Access Policy" must be complied with.¹⁰

⁵ Research results should not be divided up and published in separate publications for the sole purpose of increasing the number of published papers.

Art. 14 Author Information¹¹

¹ Concerning scientific publications, all individuals who have contributed as authors must be acknowledged as such.

² All individuals meeting all the following criteria will be considered as authors; therefore those who:

- a. contribute in an essential way to the planning, execution, control or evaluation of the research work through their personal work;
- b. participate in the drafting of the manuscript; and
- c. approve the final version of the manuscript.

³ The contributors who only partially meet the criteria set forth in Paragraph 2 should be mentioned in the "Acknowledgements" of the publication.

⁴ A managing function or financial and organizational support to the project does not entitle anyone to appear as author. Honorary or courtesy authorship is not acceptable.

⁵ The order of authors must be determined in the most transparent manner. The criteria for determining the order of authors are based on the conventions of the respective *scientific community* or determined in part by the editors. It is impossible to set forth general interdisciplinary criteria.

^{5bis} It must be ensured that the readers and experts can also understand the meaning of the order. Unless otherwise specified by the rules of the journals, footnotes or the acknowledgments section can be used to this effect.

^{5ter} The questions concerning authorship, participation in the drafting of the manuscript and author order must be discussed at an early stage among all individuals who meet at least one of the criteria set forth in Art 14, 2. The discussion must be resumed if more individuals join the project, or if the tasks of the individuals already involved in the project have changed significantly. These questions must be definitively settled upon completion of the manuscript.

⁸ see Art. 7 of the Federal Law of 17 December 2004 on the Freedom of Information in Public Administration (Freedom of Information Law, BGO) (SR 152.3)

⁹ s. also Art. 28 of the Federal Law on Research of 7 October 1983 (SR 420.1)

¹⁰ www.open-access.ethz.ch

¹¹ Version adopted by decision of the Executive Board of 25 October 2011, in effect since..... For more information on the discussion on authorship, see the following links: Tschardt T, Hochberg ME, Rand TA, Resh VH, Krauss J (2007), Author sequence and credit for contributions in multi-authored publications. *PLoS Biology* 5: 13-14; CSE's White Paper on Promoting Integrity in Scientific Journal Publications, 2009 Update (www.councilscienceeditors.org); AuthorOrder® (www.authororder.com).

⁶ Generally, the project manager is accountable for the correctness of the content of the publication. The other authors are accountable for the correctness of the statements which they can verify due to their position in the project team.

Art. 15 References, plagiarism¹²

All sources used must be cited in the published work. In addition to the quotation rules specific to each discipline, the students must follow the leaflet on plagiarism attached as Appendix 2.

Art. 16 Institutional affiliation information

¹ When research work executed in whole or in part at the ETH Zurich is published, the ETH Zurich must be mentioned as the institution.

² This institutional affiliation information must conform to the uniform ETH address format.¹³

³ ETH Zurich professors who concurrently work in another institution of the ETH domain, double professors¹⁴ and members of common institutes¹⁵ should indicate both affiliations in publications.

Chapter 3: Integrity of Peer Review

Art. 17 Principles of peer review

¹ ETH Zurich researchers are willing to serve as experts, in particular concerning:

- a. Project financing;
- b. Acceptance of publications (*peer review*);
- c. Selection of applicants (e.g. in case of appointments);
- d. evaluation of groups, departments and research organization.

² The expert person's anonymity warrants the highest degree of objectivity, impartiality and confidentiality. The expert person:

- a. must treat all information in question as confidential as long as it has not been published by the authors;
- b. may not consult other experts on the subject of the expert opinion without the consent of the competent body who has appointed him;
- c. may not use the confidential information disclosed to him in the course of his activities as expert; and
- d. must provide timely, unbiased, constructive and well-established expert opinions. He must refrain from making emotional, derogatory or offensive remarks.

Art. 18 Disclosure of interests and conflicts of interest

ETH Zurich researchers asked to provide an expert opinion on research competing directly with their own work must decline the appointment or disclose their conflict of interest. In this case the client is free to appoint another expert.

¹² As adopted by the Executive Board of the ETH Zurich in its resolution of 31 March 2009, effective as of 1 Mai 2009

¹³ www.cd.ethz.ch/adresse

¹⁴ RSETHZ 430.2

¹⁵ As adopted by the Executive Board of the ETH Zurich in its resolution of 31 March 2009, effective as of 1 Mai 2009

Chapter 4: Final Provisions

Art. 19 Confidant and procedure in case of violation of these guidelines

¹ The confidant¹⁶ provides advice and assistance to ETH Zurich researchers in matters regarding research integrity and good scientific practice and serves as mediator in cases of conflict.

² Violations of these guidelines may amount to research misconduct.¹⁷ In case of an allegation of such misconduct, the following procedures and sanctions will be implemented:

- a. in accordance with the "Procedure to Address Allegations of Research Misconduct at the ETH Zurich"¹⁸ if the allegation is made against members of the scientific and technical staff;
- b. in accordance with the "ETH Disciplinary Code"¹⁹ if the allegation is made against bachelor or master students and participants in the continuing education programmes of the ETH; or
- c. in accordance with the "Procedure to Address Allegations of Research Misconduct at the ETH Zurich" if the allegation of research misconduct is made against doctoral students; in all other cases such as allegations of plagiarism in the doctoral thesis, the "ETH Disciplinary Code" is applicable.²⁰

Art. 20 Enforcement²¹

¹ The following offices are responsible to ensure that these guidelines are brought to the attention of, and handed over to, all new members of the ETH involved in research:

- a. the Student Administration for the master students;
- b. the Human Resources Division for doctoral students with an employment contract with the ETH Zurich and for all other persons involved in research (incl. technical staff);
- c. the Doctoral Administration for doctoral students with a non-ETH employment contract; and
- d. the Office for Faculty Affairs for all faculty members of the ETH Zurich.

² The Human Resources Division will provide a copy of the guidelines on request at the offices mentioned under Paragraph 1. It will inform the Office of Research of the need for a reprint of these guidelines in due time.

Art. 21 Effective date

These guidelines will become effective as of 1 January 2008.

Zurich, 14 November 2007

Eidg. Technische Hochschule Zurich

On behalf of the ETH Executive Board

President: Eichler

Representative: Bretscher

¹⁶ Art. 4 of the "Procedure to Address Allegations of Research Misconduct at the ETH Zurich" (RSETHZ 415): the confidant's contact details can be found in the Handbook of ETH Zurich.

¹⁷ s. examples in Appendix 1 of the "Procedure to Address Allegations of Research Misconduct at the ETH Zurich" (RSETHZ 415)

¹⁸ RSETHZ 415

¹⁹ SR 414.138.1

²⁰ As adopted by the Executive Board of the ETH Zurich in its resolution of 31 March 2009, effective as of 1 Mai 2009

²¹ As adopted by the Executive Board of the ETH Zurich in its resolution of 31 March 2009, effective as of 1 Mai 2009

Appendix 1 (As of 31 March 2009)

Für die Forschung an der ETH Zürich relevanten Rechtsvorschriften und Richtlinien sind insbesondere:

1) *bezüglich des Geistigen Eigentums*

- a. Bundesgesetz vom 9. Oktober 1992 über das Urheberrecht und verwandte Schutzrechte (Urheberrechtsgesetz, URG)²², insbesondere Art. 7 (Miturheberschaft), Art. 10 (Verwendung des Werks), Art. 11 (Werkintegrität) und Art. 19 (Eigengebrauch) und Art. 25 (Zitat);
- b. Bundesgesetz vom 25. Juni 1954 über die Erfindungspatente (Patentgesetz, PatG)²³;
- c. Bundesgesetz über die Forschung vom 7. Oktober 1983 (Forschungsgesetz, FG)²⁴ und die Forschungsverordnung vom 10. Juni 1985²⁵, insbesondere Art. 15a;
- d. Bundesgesetz vom 4. Oktober 1991 über die Eidgenössischen Technischen Hochschulen (ETH-Gesetz)²⁶, Art. 36 (Rechte an Immateriellen Gütern);
- e. Verordnung des ETH-Rates über die Immaterialgüter im ETH-Bereich und die Beteiligung an Unternehmen²⁷ (IGBV-ETH);
- f. Forschungsvertrags- und Verwertungsrichtlinien des Vizepräsidenten für Forschung²⁸;
- g. Allgemeine Verordnung über Leistungskontrollen²⁹ an der ETH Zürich vom 10. September 2002 (AVL ETH Zürich), Art. 19 (Urheberrechte);
- h. Doktoratsverordnung³⁰ ETH Zürich vom 16. Dezember 2000, Art. 31 (Urheberrechte) und Art. 32 (Erfindungen);
- i. Richtlinien über Doppelprofessuren betreffend Forschungsunterstützung, Drittmittelwesen, Technologietransfer und Gesuchsberechtigung beim Forschungskredit der Universität Zürich und dem TH-Fonds der ETH Zürich³¹ vom 1. Oktober 2003.

2) *bei Forschungsprojekten am Menschen:*

- a. Bundesgesetz vom 15. Dezember 2000 über Arzneimittel und Medizinprodukte (Heilmittelgesetz, HMG)³², insbesondere Art. 53-57, und der Verordnung vom 17. Oktober 2001 über klinische Versuche mit Heilmitteln (VKlin)³³;
- b. Bundesgesetz vom 19. Dezember 2003 über die Forschung an embryonalen Stammzellen (Stammzellenforschungsgesetz, StFG)³⁴ und die Verordnung vom 2. Februar 2005 über die Forschung an embryonalen Stammzellen (Stammzellenforschungsverordnung, VStFG)³⁵;
- c. Bundesgesetz vom 19. Juni 1992 über den Datenschutz (DSG)³⁶;
- d. Reglement der Ethikkommission der ETH Zürich für Forschungsuntersuchungen am Menschen³⁷ vom 1. März 2007;
- e. Ethikrichtlinien der SAMW³⁸.

²² SR 231.1; (⇒ www.admin.ch/ch/d/sr/sr.html)

²³ SR 232.14

²⁴ SR 420.1

²⁵ SR 420.11

²⁶ SR 414.110

²⁷ SR 414.172

²⁸ RSETHZ 440.31 und RSETHZ 440.4; (⇒ www.rechtssammlung.ethz.ch)

²⁹ SR 414.135.1

³⁰ SR 414.133.1

³¹ RSETHZ 430.1

³² SR 812.21

³³ SR 812.214.2

³⁴ SR 810.31

³⁵ SR 810.311

³⁶ SR 235.1

³⁷ RSETHZ 413

³⁸ www.samw.ch

3) *bei Forschungsprojekten mit Tieren:*

- a. Tierschutzgesetz vom 16. Dezember (TSchG)³⁹ und Tierschutzverordnung vom 23. April 2008 (TschV)⁴⁰;
- b. Ethikrichtlinien der SAMW⁴¹.

4) *bei Forschungsprojekten mit gentechnisch veränderten Organismen:*

Bundesgesetz vom 21. März 2003 über die Gentechnik im Ausserhumanbereich (Gentechnikgesetz, GTG)⁴², Verordnung über den Umgang mit Organismen in geschlossenen Systemen (Einschliessungsverordnung, ESV)⁴³, Verordnung vom 10. September 2008 über den Umgang mit Organismen in der Umwelt (Freisetzungsverordnung, FrSV)⁴⁴.

5) *bei Forschungspartnerschaften mit Entwicklungsländern:*

Schweizerische Kommission für Forschungspartnerschaften mit Entwicklungsländern (KFPE) 1998: Leitfaden für Forschungspartnerschaften mit Entwicklungsländern⁴⁵, 11 Prinzipien.

6) *bei der Nutzung von genetischen Ressourcen*

Access and Benefit Sharing. Good practice for academic research on genetic resources. First edition 2006⁴⁶.

³⁹ SR 455

⁴⁰ SR 455.1

⁴¹ www.samw.ch

⁴² SR 814.91

⁴³ SR 814.912

⁴⁴ SR 814.911

⁴⁵ www.kfpe.ch/key_activities/publications/guidelines.php

⁴⁶ Swiss Academy of Sciences, <http://abs.scnat.ch>

Appendix 2 (As of 25 October 2011)

Plagiarism

www.ethz.ch/faculty/exams/plagiarism