FH JOANNEUM Guideline for Good Scientific Practice and Prevention of Research Misconduct

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Preamble

As a university of applied sciences, FH JOANNEUM is committed to an educational and research mission that is in line with the needs and issues facing society. In this role, we have the responsibility to generate knowledge for the benefit of the general public and to strive for sustainable solutions[1], upholding the university's canon of values[2] and maintaining scientific integrity.[3] The university acts as a responsible link between society and science.[4] To comply with this, a list of principles of good scientific practice has been compiled. These principles tie in with standards and guidelines already formulated by others.[5] The academic integrity of all students, employees and teaching staff at FH JOANNEUM is measured against these principles.
Research misconduct is specified in more detail. Finally, appropriate measures are defined for the prevention of misconduct and to ensure that cases of research misconduct are dealt with adequately.[6]

1. Principles

The following guidelines are based on the principles of research ethics and on the standards of good scientific practice, which in turn are based on the principles of responsible research.[7] The term "research ethics" encompasses both the commitment of researchers and research organisations to uphold research integrity[8], i.e. the effort to achieve the best possible scientific practice while avoiding research misconduct as far as possible, and the responsibility for current and future impacts of research on society and its opportunities for development. To act in accordance with research ethics, it is important to adhere to scientific quality criteria[9] and to be aware of one's responsibility towards one's own discipline and other persons working in science as well as towards

[1] Cf. United Nations – Resolution adopted by the General Assembly, 2015, online.

[2] "We express our strong belief in the fundamental values of higher education that reflect the achievements of enlightenment. […] Furthermore, we emphasize the contribution of higher education institutions to society, fostering intercultural understanding, equitable access, civic engagement, and ethical education, and enhancing social responsibility." (Vienna Statement of the representatives of the Rectors conferences, 2018, p. 1, online).

[3] Cf. Austrian Agency for Research Integrity (ÖAWI), 2015, online.

[4] Cf. Ribitsch, 2019, quoted from Association of Austrian Universities of Applied Sciences (FHK), 2019, n. pag., online.

[5] Cf. Austrian Agency for Research Integrity (ÖAWI), 2015; ALLEA _ All European Universities, 2018; German Research Foundation (DFG), 2019.

[6] FH JOANNEUM is a member of the Austrian Agency for Research Integrity (ÖAWI) for this purpose.

[7] "Responsible research and innovation is an approach that anticipates and assesses potential implications and societal expectations with regard to research and innovation, with the aim to foster the design of inclusive and sustainable research and innovation" (European Commission - Horizon 2020, 2019. n. pag., online).

[8] "Legislation relevant to science and research, the principles of research ethics and the Standards of Good Scientific Practice all contribute equally to ensuring a high degree of integrity in research and scholarship." (cf. Austrian Agency for Research Integrity (ÖAWI), 2015, n. pag., online)

[9] The twelve key criteria of scientific quality specified by Balzert, Schröder & Schäfer include: 1. Honesty, 2. Objectivity, 3. Verifiability, 4. Reliability, 5. Validity, 6. Comprehensibility, 7. Relevance, 8. Logical reasoning, 9. Originality, 10. Plausibility, 11. Fairness and 12. Responsibility (cf. Balzert, Schröder & Schäfer 2011: 13 ff.).

society and the environment[10], to commit oneself to the principles of good scientific practice and to avoid research misconduct.

Purpose

These principles provide the basis for good scientific practice and action at the personnel and institutional level, but in no way replace existing legal regulations and ethical standards.

FH JOANNEUM is committed to safeguarding good scientific practice by ensuring that

- all staff, lecturers, other contractors and students at FH JOANNEUM are required to avoid research misconduct in order to promote good scientific practice;
- any accusations of research misconduct with regard to one or several individuals are viewed and treated as a highly sensitive matter;
- any discrediting due to unfounded accusations in particular must be avoided, since once an individual has been accused of misconduct it is difficult for them to fully regain credibility;
- the legitimate interests of a person accusing someone else of misconduct must be safeguarded;
- the extension of responsibility beyond one's own field of activity is to be avoided as much as possible.

1.1. Good scientific practice

All students and staff of FH JOANNEUM as well as other contractors of FH JOANNEUM in teaching and research (hereinafter referred to as "person" or "persons") are thus obliged to adhere to the following principles of good scientific practice:

- Adherence to professional standards, i.e. scientific work must be conducted in compliance with the legal regulations, ethical standards and in accordance with the current state of knowledge of the relevant subject or discipline.
- Scientific work must be conducted in a transparent and accountable manner.
- The scientific approach used must be precisely and transparently recorded and documented.
- Scientific work must comply with the provisions of the General Data Protection Regulation (GDPR) and the Data Protection Act (DSG) as well as additional data protection standards as amended.
- If the archiving of the data of empirical studies is not prohibited, these data are to be stored safely and in such a way that they cannot be changed or modified.
- As far as it is possible and reasonable, basic data for publications will be stored for 10 years in machine-readable form according to the state of the art, protected from manipulation and unauthorised access, without prejudice to other legal provisions (including but not limited to the General Data Protection Regulation (GDPR) and the Data Protection Act (DSG) as well as additional data protection standards as amended), unless individual regulations provide for a longer retention period (such as clinical studies).

[10] Cf. Balzert, Schröder & Schäfer, 2011, 13 f.

- Ideas, texts, data and results of others must be cited accurately and self-plagiarism must be avoided. Self-plagiarism occurs when no reference is made to the earlier publication when a previously published text or part of a text is published again.
- Without exception, consideration and honesty must be shown towards the work and contributions of colleagues and competitors and towards oneself, the joint responsibility of co-authors for publications must be observed and possible conflicts of interest must be disclosed.
- The funding source must be made transparent.
- Any scientific and commercial usage rights of data and results must be dealt with before the work is carried out.
- Superiors and supervisors must provide academic staff and students with responsible and active instructions, guidance and supervision.
- Supervisors of Bachelor's, Master's and Diploma theses must be selected and assigned in accordance with the competence profiles specified in applicable employment law as well as with the requirements for subject supervision specified in the Study and Examination Regulations.
- Scientific results must be critically examined.
- Researchers must be open to the criticism or doubts of others.
- The work of others must be assessed in an impartial, disinterested and thorough manner.
- Any bias (e.g. conflict of interest, competitive relationship) must be disclosed in good time and consequently, no review may be carried out in such cases.
- Research misconduct must be avoided in one's own work. Such misconduct must also be prevented within one's environment as much as possible.

1.2. Ethical acceptability of proposed problems or research questions

During the planning stage of Bachelor's or final degree theses or research projects, questions of the ethical justifiability of proposed topics or research questions may arise. The FH JOANNEUM Board will appoint persons of trust who provide support and advice in the clarification of ethical concerns in the context of scientific questions in the early stages.[11]

1.3. Research misconduct

Research misconduct refers to wilful, conscious or grossly negligent violations of the standards of good scientific practice in connection with a scientific work, including but not limited to misrepresenting facts, infringing intellectual property of third parties or compromising other people's research as a result of one's own scientific activity. "Violations are deemed 'wilful' when a researcher considers a violation of the Standards of Good Scientific Practice possible and accepts that possibility when conducting research. Violations are deemed 'conscious' when a researcher considers a violation of the Standards of Good Scientific Practice not merely possible, but certain. Violations are deemed 'grossly negligent' in cases where a researcher shows blatant disregard for due diligence in a given research context and therefore fails to recognize that s/he is violating the Standards of Good Scientific Practice to a great extent; for example, this is the case where even the simplest, most obvious considerations are not taken into account and the researcher disregards considerations which should have occurred to any person. Critical statements in scientific/scholarly

[11] This will be based on procedural principles which govern the appointment, powers, summoning and intervention of persons of trust and an advisory body to clarify ethical concerns in the context of scientific work in the early stages.

discourse ('honest differences of opinion') or errors made in good faith ('honest errors') are not considered to be forms of research misconduct."[12]

However, the standards of good scientific practice may be violated due to the erroneous use of data. In this case, it can be assumed that this was not done wilfully or through gross negligence and therefore does not constitute research misconduct.

The wilful non-disclosure or non-correction of an identified error, regardless of whether this error was identified by the scientists themselves or by a third person, is however considered research misconduct.

The following actions in particular are to be considered research misconduct:[13]

- **Misrepresentation**
  - Fabrication of data
  - Falsification of data by manipulating the research process
  - Falsification of data by altering or selectively omitting data which contradict the research proposition
  - Falsification of data by misleading interpretation of data with a view to obtaining a desired result
  - Failure to correct detected errors

- **Infringement of intellectual property, plagiarism**

  Infringements with regard to the work of another person protected by copyright or scientific findings, hypotheses, teachings, texts, contents, ideas or research approaches of another person:

  - Unauthorised utilisation under the pretence of authorship (plagiarism)
  - Exploitation of research approaches and ideas, in particular as a reviewer (theft of ideas)
  - Claim to or unjustified assumption of authorship or co-authorship of a scientific piece of work
  - Falsification of the content of a scientific work
  - Unauthorised publication of and offering third parties unauthorised access to a work, finding, hypothesis, teaching or research approach that has not yet been published

- **Honorary authorship**

  So-called 'honorary authorships' are not permitted, i.e. authorship may only be claimed by persons who have made an actual substantial contribution to the relevant publication.

- **Co-authorship**

  Making a claim to (co-)authorship of another person without that person's consent is not permitted. Failure to make an express effort to prevent publication without the co-author's consent will also be considered as misconduct.

- **Sabotaging of research**

  Sabotaging of research (including damaging, destroying or tampering with experimental set-ups, equipment, documents, hardware, software, chemicals or anything else required by another person to conduct an experiment) and unjustified refusal to provide access to primary and original data, including information on how such data was obtained, or the disposal of such data before the applicable retention periods have passed represents misconduct in science.

[12] Austrian Agency for Research Integrity (ÖAWI), 2015; p. 2, online.

[13] Cf. Austrian Agency for Research Integrity (ÖAWI), 2015; pp. 14 ff.

- **Disposal of primary and original data**
  Disposal of primary and original data, insofar as this infringes legal provisions or accepted principles of scientific work in the discipline.

- **Obstruction of research activities**
  - Obstructing the research activities of other scientists
  - Unfair attempts to damage the scientific reputation of another researcher, in particular through anonymous, non-specific and unjustified allegations of violations of the standards of good scientific practice.

- **Providing inaccurate information in a funding application**

- **Creating disadvantages to career advancement, in particular of junior scientists**

- **Involvement in research misconduct**
  Research misconduct can also include involvement in research misconduct, especially through active involvement in the misconduct of others, neglect of supervisory obligations or co-authorship of publications based on research misconduct.

2. Procedure in the event of suspected research misconduct

The person accused of research misconduct or the person accusing another of misconduct approach the Head of the FH JOANNEUM Board, who submits the case for investigation to the "Commission for the Safeguarding of Good Scientific Practice and Prevention of Research Misconduct" (see section 5). The Commission presents a final report to the FH JOANNEUM Board, which provides the basis for subsequent extensive discussion of the matter in the FH JOANNEUM Board.

3. Responsibility in management positions in teaching and research

- The head of degree programme is organisationally responsible for ensuring that the approval, supervision and assessment processes for Bachelor's, Master's and Diploma theses are organised such that the standards of good scientific practice are maintained and research misconduct is prevented. The head of degree programme must also ensure that supervision, conflict management and quality assurance within the meaning of this guideline are clearly assigned and implemented.

- Supervisors of Bachelor's, Master's and Diploma theses are responsible for ensuring that students are adequately supervised and are informed about the principles of safeguarding good scientific practice and the consequences of research misconduct.

- Teaching staff are called upon to discuss the standards of good scientific practice and the issue of research misconduct as far as possible to create an awareness of the problem and to instil a sense of responsibility.

- The heads of institutes, R&D centres and research centres are organisationally responsible for ensuring that the relevant management tasks in terms of supervision, conflict management and quality assurance within the meaning of this guideline are clearly assigned and implemented.

4. Measures for verifying compliance with good scientific practice

The following control measures are in place at all FH JOANNEUM degree programmes in order to verify whether Bachelor's, Diploma and Master's theses comply with the standards of good scientific practice. This means that the approval, supervision and assessment processes must be organised such that the standards of good scientific practice are maintained and research misconduct is prevented. Students submitting a Bachelor's, Diploma or Master's thesis must also provide a signed declaration; it will also be checked whether the work submitted is free from illegitimate appropriation of intellectual property or findings of third parties.

4.1. Obligatory signed declaration:

I hereby declare that the present Bachelor's thesis/Diploma thesis/Master's thesis was composed by myself and that the work contained herein is my own and that I have only used the specified resources. I also confirm that I have prepared this thesis in compliance with the FH JOANNEUM Standards for Good Scientific Practice and Prevention of Research Misconduct. I declare in particular that I have cited all formulations and concepts taken verbatim or in substance from printed or unprinted material or from the Internet according to the rules of good scientific practice and that I have indicated them by footnotes or other exact references to the original source.

The present thesis has not been submitted to another university for the award of an academic degree in this form. [14]

I understand that the provision of incorrect information may have legal consequences.

(Signature) *(Place, Date)*

4.2. Check of the submitted Bachelor's, Diploma or Master's theses using plagiarism detection software:

Students submitting a Diploma or Master's thesis must email the report of the plagiarism check to their supervisor together with the thesis.
Bachelor's theses and seminar papers must only be checked in this way if plagiarism is suspected (a mandatory check of every Bachelor's thesis is not necessary). The report of the plagiarism check provides only an indication and can neither confirm nor exclude a case of research misconduct. Only the supervisor, in consultation with the head of degree programme, is entitled to state that research misconduct in the form of plagiarism has occurred by issuing an assessment to that effect.

- Any suspected or detected case of research misconduct in the form of plagiarism in Bachelor's, Diploma or Master's theses shall be immediately reported to the relevant head of degree programme in writing.

[14] This sentence is omitted for Double Degree Programmes.

- In the case of suspected misconduct the head of degree programme must inform the student concerned requesting him/her to promptly provide a written comment within a specified period.
- If the student does not respond to the request for comment of the suspected case or if research misconduct in the form of plagiarism has been confirmed, the Bachelor's, Diploma or Master's thesis shall be declared null and void (cf. §20 of the Universities of Applied Sciences Act (FHStG) as amended). The student shall be allowed reasonable time to revise and resubmit the thesis (cf. §19 (2) FHStG as amended, FH JOANNEUM Study and Examination Regulations). The supervisor shall, in consultation with the head of degree programme, decide whether the student may resubmit the thesis on the same topic or whether he/she must choose a new topic. If the student concerned, however, insists on notifying the "Commission for the Safeguarding of Good Scientific Practice and Prevention of Research Misconduct" (see section 2) applying §21 FHStG *mutatis mutandis*, the Student must notify the Head of the FH JOANNEUM Board to this effect, who will then initiate the procedure provided for this case.
- If the case is referred to the "Commission for the Safeguarding of Good Scientific Practice and Prevention of Research Misconduct", the Chair of the Commission (see section 2) shall be notified by the Head of the FH JOANNEUM Board submitting a report prepared by the thesis supervisor and the head of degree programme taking into account the student's comments.
- If the head of degree programme himself/herself has supervised the thesis concerned, he/she shall consult another head of degree programme or the relevant head of department.
- All programme heads shall, by 31 October of each year, furnish the Head of the FH JOANNEUM Board with a report on the cases of plagiarism that have occurred in the preceding year, including a brief description and presentation of the measures taken.

5. Commission for the Safeguarding of Good Scientific Practice and Prevention of Research Misconduct

The FH JOANNEUM Board appoints a permanent "Commission for the Safeguarding of Good Scientific Practice and Prevention of Research Misconduct" to investigate any alleged cases of research misconduct.
The appointment and composition of the Commission as well as the procedural rules of the Commission shall be set forth in separate "Rules of Procedure" by the FH JOANNEUM Board.[15]

6. Publication of the Guideline

The Guideline for Good Scientific Practice and Prevention of Research Misconduct shall be published immediately following adoption of the relevant resolution by the FH JOANNEUM Board and shall in any event be published on the FH JOANNEUM website. The Guideline shall enter into effect on 16/09/2020.
Reference to this Guideline shall be made in the Study and Examination Regulations and in the Student Agreement. The students are actively acquainted with the Guideline for Good Scientific Practice during lectures.

[15] Until new rules of procedure for the Commission are adopted, the Commission shall be subject to the procedural principles set forth in the resolution by the FH JOANNEUM Board on safeguarding good scientific practice and preventing research misconduct adopted on 10/03/2014, section V.

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