



# Guidelines for ensuring good scientific practice and handling scientific misconduct

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## Preface

The following guidelines of the TH Köln are based on the recommendations of the German Rectors' Conference "Handling scientific misconduct in universities" from July 1998 and "Good scientific practice at German universities" from May 2013 as well as the "Recommendations to ensure good scientific practice" of the Deutsche Forschungsgemeinschaft (DFG) from September 2013 as well as the position paper "Recommendations for scientific integrity"\* presented by the German Council of Science and Humanities (Wissenschaftsrat) in 2015.

## Preamble

Scientific work is based on fundamental principles which apply equally in all scientific disciplines. The honesty of scientists to themselves and others is of foremost importance. At the same time, these fundamental principles form the ethical foundation of the rules of scientific professionalism.

These guidelines define the basic principles of the TH Köln to ensure good scientific practice and for handling accusations of scientific misconduct. They apply to all members of the TH Köln involved in research and teaching, all students, doctoral candidates and postdocs and also to members of the non-scientific staff who work in scientific departments. All members of the TH Köln mentioned are obligated to use these guidelines as a basis for their scientific work in order to ensure good scientific practice and to help actively avoid scientific misconduct.

As a site of research and teaching, the university has a responsibility in this regard. The TH Köln is aware of its duty, especially to the students and the junior scientists, to communicate the basic principles of good scientific practice and to familiarize them with the techniques of scientific work. The guidelines are handed out to scientific staff during contract signing.

## 1 Good scientific practice

The members of the TH Köln are obligated to uphold the basic principles of good scientific practice in all work-related contexts and in particular

- to work in accordance with professional standards
- to always document results
- to also always evaluate one's own results critically and rigorously question them
- to maintain strict honesty with regard to the contributions of involved parties, supervised parties (doctoral students), competitors as well as predecessors
- to assume responsibility for appropriate support of early-stage researchers
- to observe the regulations for safeguarding and storing primary data
- to respect the intellectual property of others
- to comply with ethical standards when conducting surveys and experiments.

The TH Köln additionally expects its scientists working to take active measures to ensure good scientific practice. These measures include:

\* The adopted and published guidelines of the Max Planck Society (March 2009), the University of Konstanz (July 1998), the University of Duisburg (July 2004), the Fachhochschule Dortmund – University of Applied Sciences and Arts (April 2014), the Hochschule Niederrhein – University of Applied Sciences (July 2002), the Hannover Medical School (October 2011), the Humboldt Universität zu Berlin (June 2014), the Universität Hamburg (August 2014), the Technische Universität Dresden (March 2014), the Johannes Gutenberg University Mainz (May 2014) and the Technical University of Munich (December 2013) have been incorporated into this topic. The wording of the texts mentioned is included in the guidelines of the TH Köln directly in some cases, indirectly in other cases.

1. All persons responsible must ensure, through appropriate organization of their work area that the tasks of leadership, supervision, conflict management and quality assurance are clearly allocated and ensures that these tasks are actually fulfilled.
2. In the performance evaluation for examinations, the awarding of academic degrees, promotions, employment, appointments and appropriations, quality and originality should always have precedence over quantity.
3. Good scientific practice calls for strict caution in the collection and evaluation of data, the clear and traceable documentation of all important results, as well as openness to criticism and doubt of one's own results. The persons responsible for a research project must ensure that the original data can be stored as the basis for publications on durable and secured media for ten years. Additional storage requirements based on legal regulations as well as measures to protect personal data are not affected by this. If multiple institutions are involved in the data collection process, the question of storage as well as access rights is to be contractually regulated.
4. As a basic rule, research results obtained with public funds are to be published. In doing so, the contributions of predecessors, competitors and employees must be properly recognized and taken into consideration as a matter of course. Disproven hypotheses or errors must be publicly reported.

## 2 Supporting early-stage researchers

In compliance with the rules of good scientific practice, particular attention must be paid to the training and promotion of junior scientists (students, doctoral candidates, postdocs). The guidelines of good scientific practice are communicated to early-stage researchers by the instructors at the university during teaching and research. In doing so, it should be ensured that there is a contact person in each teaching and research unit who is able to convey the rules for ensuring good scientific practice and who can help avoid any misconduct by members.

Within the framework of support by the Graduate Center of the TH Köln, all doctoral candidates are acquainted with the guidelines. In addition, the supervisory agreement concluded between the supervisory person and the doctoral candidate is consistent with the basic principles of good scientific practice.

The supervision of doctoral candidates is set up such that the supervisory person supports his/her doctoral candidates in structuring the doctoral training process, in developing an academic network and in identifying career options and has an overview of the ongoing research activities and the important development steps of the work. This includes regular supervisory meetings and the monitoring of the progress of the work so that the completion of the work by junior scientists is supported within an appropriate time frame. The supervisory concept should also include measures to support further career planning and ensure integration in the academic community. In this way, high-quality supervision and support of early-stage researchers is ensured at the TH Köln.

## 3 Scientific publications

Scientific investigations must be verifiable. As a result, their publication must contain a precise description, comprehensible by technical experts, of the methods and the results – with a reference to additional literature, if applicable. Important findings which support or call into question the author's results and hypotheses must also be communicated. One's own preliminary work and that performed by others as well as relevant publications by other authors on which the work is directly based must be listed as completely and correctly as possible.

Authors of a scientific publication jointly bear the responsibility for its contents. All scientists who made important contributions to the idea, planning, implementation or analysis of the research work are to be given the opportunity to collaborate as a co-author.

Co-authorship is not justified by:

- the procurement of funds
- the provision of standard investigation materials
- the instruction of employees in standard methods
- solely technical collaboration in data collection
- solely technical support (for example, the mere provision of equipment)
- the mere transfer of data
- merely reading the manuscript without substantially contributing to the content, or
- the leadership of the department or work group in which the publication originated.

Likewise, relationships related to labor law or civil service law between the parties involved are not relevant for the justification of a (co-)authorship. Persons with smaller contributions are mentioned in a statement of acknowledgment. So-called "honorary authorships" are excluded.

It is a violation of the rules of good scientific practice to end collaboration in a publication without sufficient reason or to prevent the publication of results as coauthors on whose consent the publication depends without a compelling reason.

If the publication is to contain personal data – detailed information on personal or material relationships of an identified or identifiable natural person – this is only permissible if the persons affected by this have provided express consent.

## 4 Scientific misconduct

Scientific misconduct occurs if, in the case of scientific work, false declarations are made knowingly or through gross negligence, if the intellectual property of others is violated or if research activities of others are sabotaged. A violation of the rules of good scientific practice include, for example:

- fabrication, falsification and suppression of data, false information in research proposals
- improper safeguarding or insufficient documentation of original data
- false information in a grant application (including false information on publications and in publications in print)
- plagiarism
- failure to cite others' results and findings
- fraudulently obtained authorship in publications
- exclusion of justified authorships
- defamation with regard to good scientific practice
- breach of trust as a reviewer or supervisor
- arbitrarily delaying publications while serving as a reviewer

Joint responsibility for misconduct can result, among other things, from the involvement in the misconduct of others, through co-authorship in publications with falsified information, gross negligence in supervisory duties in research projects as well as a failure to instruct persons involved in the research with regard to the rules of good scientific practice or other gross violation of the supervisory obligation in the case of students, doctoral candidates as well as postdocs.

## 5 Ombudsman

For members of the TH Köln who wish to register allegations of scientific misconduct, the Executive Committee appoints an experienced scientist as an ombudsman. Due to possible bias, a deputy for this ombudsman is also appointed.

As a person in a position of trust, the ombudsman advises on questions regarding good scientific practice as well as those which inform him/her of presumed scientific misconduct. He/she also utilizes, on his/her own initiative, of relevant information which he/she becomes aware of (possibly also via third parties). Moreover, he/she advises those members of the TH Köln, especially junior scientists as well as students who are involved, through no fault of their own, in a case of scientific misconduct as to how they can protect or restore their scientific and personal reputation.

The basic guidelines for serving as an ombudsman are confidentiality and fairness. The ombudsman is not bound by instructions and is obligated to maintain confidentiality and multipartiality. No one may suffer any disadvantages as a result of contacting the ombudsman. Sections 186 and 187 of the criminal code (StGB) (slander and libel) remain unaffected.

## 6 Procedure in the case of suspected misconduct

The TH Köln will pursue every specific suspicion of scientific misconduct.

The allegations will be checked using plausibility considerations for certainty and significance. Together with the persons concerned and the informants, the ombudsman checks whether a suspicious case is to be handled. If all three parties agree that the suspicion is not justified, proceedings will be avoided. Otherwise the information will be forwarded to the Executive Committee on a confidential basis.

The Executive Committee then forms an investigation committee consisting of a professor from each of the three disciplines of humanities, natural sciences and engineering who will then investigate the matter. In doing so, information during the investigation process from all persons involved is to be treated strictly confidentially to protect the informant as well as the person concerned such that no disadvantages to scientific and professional advancement arise.

The investigation committee appoints one of its members to be the chairperson. The members take office in each case for the duration of the investigation. When appointing the members of the investigation committee, attention should be paid to a balanced gender representation. The investigation committee can call upon additional persons for consultation, if needed.

With regard to the students of the TH Köln, the obligation for reviewing whether there are violations of the basic principles of good scientific practice in assignments or student research projects or in a bachelor's or master's thesis lies with the teaching staff who are to assess this work or the respective examiners and the responsible examining committees. Violations against scientifically recognized rules are punishable according to the provisions of the respective examination rules.

## 7 Work of the investigation committee

In the event of an investigation, the following basic principles are to be observed by the committee:

1. The meetings of the investigation committee are not public.
2. Decisions are made with a simple majority.
3. The investigation committee is authorized to undertake all steps which serve to clarify the circumstances. For this purpose, it may gather all necessary information and statements and in individual cases, it may also call upon expert evaluators from the scientific discipline in question. In doing so,

It should be ensured that the proceedings are completed with a reasonable amount of time.

4. The person concerned is to be made aware of the incriminating facts and any available evidence.
5. The person concerned as well as the informer is given an opportunity to make a verbal statement. The person concerned has the right to inspect the files.
6. Persons who provide a specifiable indication of a suspicion of scientific misconduct (whistleblower) must not suffer any negative consequences for their own scientific and professional advancement. The ombudsman as well as the investigation committee must appropriately advocate for this protection. Thus the ombudsman as well as all members of the investigation committee, even after their duties have ended, are obligated to maintain confidentiality of the identity of the persons who contacted them with a specifiable indication of a suspicion of scientific misconduct, as well as of circumstances which would allow these persons to be identified. Disclosure of the name to the accused person is called for only in individual cases if this person cannot otherwise appropriately defend him-/herself.
7. If the suspicion of a violation of good scientific practice cannot be dispelled, a corresponding report by the investigation committee is sent to the Executive Committee who then will decide how to proceed. In doing so, the initiation of academic, civil or criminal consequences will be considered, in addition to consequences relating to labor or civil service law.
8. The person concerned as well as the informant are to be informed in writing of the Executive Committee's decision. The primary reasons which led to the decision are to be communicated.

## 8 Sanctions

Regardless of the legal consequences, the TH Köln reserves the right to undertake sanctions in the event of fraud or violation of good scientific practice. This may include, among other things:

- reprimand of the person(s) concerned by the president
- conditions stipulating correction and withdrawal of incorrectly written publications
- exclusion from research funding procedures within the TH Köln for a specific or indefinite period of time
- academic ramifications, such as withdrawal of teaching privileges in coordination with the president as well as the dean of the associated school.

In the case of research work funded by third parties, the third-party funder is informed in the event of scientific fraud. Depending on the circumstances, the responsible organs or institutions will initiate legal or regulatory measures with the corresponding procedure.

## 9 Entry into force

The guidelines to ensure good scientific practice and for handling scientific misconduct at the TH Köln enter into force with the decision of the Executive Committee in its meeting on January 13, 2016.

The senate took note of and approved these guidelines in its meeting on January 27, 2016.

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