Statutes of Aalen University – Technology and Economics for ensuring good scientific practice

dated November 2, 2022

Pursuant to Section 3 (5), Section 8 (5), and Section 19 (1) sentence 2 no. 10 of the State Higher Education Act (LHG) of January 1, 2005 (GBI. p. 1) in the version of April 1, 2014 (GBI. p. 99), last amended by Article 1 of the Fourth Act Amending Higher Education Regulations (4. HRÄG) of December 17, 2020 (GBI. p. 1204), the Senate of Aalen University adopted the following statutes for ensuring good scientific practice on October 26, 2022.

Preamble

Scientific work is based on fundamental principles such as working lege artis, strict honesty, and critical discourse, which apply equally to all scientific disciplines. In these statutes, Aalen University defines principles for ensuring good scientific practice and dealing with scientific misconduct. These principles apply to all those engaged in scientific work at the university and to students, who are thereby obliged to base their scientific work on these statutes and to actively contribute to the prevention of scientific misconduct. As a place of research and teaching, the university has an institutional responsibility in this regard. The university's rectorate and senate undertake measures to create the appropriate bodies, personnel structures, and other necessary conditions ensuring good scientific practice and developing them further in line with new findings. The statutes are based largely on the DFG's guidelines ensuring good scientific practice (code) from 2019.

§ 1 Scope of application; relationship to other legal provisions

(1) The provisions of these statutes are binding for all scientific staff and students at Aalen University.

(2) The procedure for dealing with suspected cases of scientific misconduct is regulated in the statutes of Aalen University on the procedure for dealing with scientific misconduct.

§ 2 Guidelines for ensuring good scientific practice

(1) Principles

Guideline 1: Commitment to general principles

With these statutes, which have been adopted by the Senate and in accordance with § 3, Aalen University establishes the rules for good scientific practice for the information of its academic staff and students. It informs its members and obliges them to comply with them, taking into account the specific characteristics of the relevant field. Every scientist is responsible for ensuring that their own conduct complies with the standards of good scientific practice.

The principles include, in particular, working lege artis, maintaining strict honesty with regard to one's own contributions and those of third parties, consistently questioning all results, and allowing and encouraging critical discourse within the scientific community. The principles of good scientific practice are set out in the following guidelines.

Guideline 2: Professional ethics

Scientists at Aalen University are responsible for realizing and upholding the fundamental values and norms of scientific work in their actions. The teaching of fundamentals of good scientific work begins at the earliest possible stage in academic teaching and scientific training. Scientists at all career levels regularly update their knowledge of the standards of good scientific practice and the state of research.

Experienced scientists and junior researchers at the university support each other in the continuous learning and training process and engage in regular exchange.

Guideline 3: Organizational responsibility of the management of scientific institutions

The university management and permanent committees of Aalen University create the framework conditions for scientific work. They are responsible for ensuring compliance with and communication of good scientific practice, as well as for providing appropriate career support to all scientists. The university management and responsible committees guarantee the conditions necessary for scientists to comply with legal and ethical standards. The framework conditions include clear and written procedures and principles for personnel selection and development, as well as for the promotion of young scientists and equal opportunities.

The university management and the relevant central committees are responsible for ensuring an appropriate institutional organizational structure. This ensures that, depending on the size of the individual scientific work units, the tasks of management, supervision, quality assurance, and conflict resolution are clearly assigned and communicated appropriately to the respective members and affiliates. Gender equality and diversity are taken into account in the selection and development of personnel. The relevant processes are transparent and avoid unconscious bias as far as possible. Appropriate support structures and concepts are established for young researchers. Sincere advice on careers and further career paths as well as further training opportunities and mentoring are offered to scientific and scientific support staff.

Guideline 4: Responsibility of the management of work units

The management of a scientific work unit at Aalen University is responsible for the entire unit. Cooperation in scientific work units is structured in such a way that the group as a whole can fulfill its tasks, that the necessary cooperation and coordination take place, and that all members are aware of their roles, rights, and obligations. Management tasks include, in particular, ensuring appropriate individual support for young researchers – embedded in the overall concept of the respective institution – and promoting the careers of academic and academic support staff. Abuse of power and exploitation of relationships of dependency must be prevented by appropriate organizational measures both at the level of the individual scientific work unit and at the level of the management of the university, faculty, or institute.

The size and organization of the scientific work unit are designed in such a way that

management tasks, in particular the transfer of knowledge, scientific support, and supervisory and mentoring duties, can be performed appropriately. The performance of management tasks goes hand in hand with the corresponding responsibility. Scientists and scientific support staff at Aalen University enjoy a balance of support and personal responsibility appropriate to their career level. They are accorded an adequate status with corresponding participation rights. Increasing independence enables them to shape their own careers.

Guideline 5: Performance dimensions and evaluation criteria

A multidimensional approach is required to evaluate the performance of scientists: in addition to scientific performance, other aspects may also be taken into account. Performance evaluation is primarily based on qualitative standards, with quantitative indicators only being included in the overall evaluation in a differentiated and reflective manner. If voluntarily disclosed, individual characteristics in CVs are also taken into account in the evaluation, in addition to the categories specified in the General Equal Treatment Act.

High-quality science is based on discipline-specific criteria. In addition to the acquisition of knowledge and its critical reflection, other performance dimensions are also included in the assessment of scientists. These include, for example, commitment to teaching, academic self-administration, public relations, knowledge and technology transfer; contributions in the interest of society as a whole can also be recognized. The scientific attitude of the scientist, such as openness to new insights and willingness to take risks, is also taken into account. Personal, family, or health-related absences or extended training or qualification periods, alternative career paths, or comparable circumstances are given appropriate consideration.

Guideline 6: Ombudspersons

Through its statutes on the procedure for dealing with scientific misconduct, Aalen University has ensured that at least one independent ombudsperson is available to whom its members and affiliates can turn with questions about good scientific practice and suspected scientific misconduct. It takes sufficient care to ensure that the ombudspersons are known at the institution. A substitute is available for each ombudsperson in case of concerns about bias or incapacity.

Ombudspersons may not be members of a central management body of their institution while exercising this office. The term of office of ombudspersons is limited in time. A further term of office is possible. Ombudspersons are selected from among scientists of integrity with management experience. They act as neutral and qualified contact persons for questions of good scientific practice and suspected cases of scientific misconduct and, as far as possible, contribute to solution-oriented conflict mediation. The ombudspersons receive inquiries in confidence and, if necessary, forward suspected cases of scientific misconduct to the responsible body, the Commission for the Investigation of Misconduct in Science. The ombudspersons, as well as the members of the Commission for the Investigation of Misconduct in Science, receive the necessary support and acceptance from the university in the performance of their duties.

In order to increase the effectiveness of the ombudsman system, the university provides measures to relieve the ombudspersons of other duties as necessary. The university has a right of choice in such a way that its members and affiliates can turn to the local

ombudsperson of the university or to the supra-regional body "Ombudsman for Science." The "Ombudsman for Science" committee is an independent body appointed by the DFG that is available to provide advice and support on issues of good scientific practice and its violation through scientific dishonesty.

(2) Research process

Guideline 7: Cross-phase quality assurance

The scientists at Aalen University carry out each step in the research process lege artis. When scientific findings are made publicly available (in the narrower sense in the form of publications, but also in the broader sense via other communication channels), the quality assurance mechanisms used are always explained. This applies in particular when new methods are developed.

Continuous quality assurance during research refers in particular to compliance with subject-specific standards and established methods, to processes such as the calibration of equipment, the collection, processing, and analysis of research data, the selection and use of research software, its development and programming, and the keeping of laboratory notebooks. If scientists at the university have made findings publicly available and subsequently notice discrepancies or errors, they shall correct them. If the discrepancies or errors give rise to the withdrawal of a publication, the scientists at the university shall notify the publisher or infrastructure provider, etc. as soon as possible that the correction or withdrawal has taken place and that this has been indicated accordingly. The same applies if scientists at the university will notify the relevant publisher or infrastructure provider, etc. as soon as possible so that the correction or retraction can be made and indicated accordingly. The same applies if third parties point out such discrepancies or errors to the university's scientists.

The origin of data, organisms, materials, and software used in the research process is indicated and their reuse is documented; the original sources are cited. The type and scope of research data generated in the research process are described. Their handling is organized in accordance with the guidelines of the relevant discipline. The source code of publicly available software must be persistent, citable, and documented. Depending on the subject area concerned, it is an essential part of quality assurance that results or findings can be replicated or confirmed by other scientists (for example, by means of a detailed description of materials and methods).

Guideline 8: Actors, responsibilities, and roles

The roles and responsibilities of the scientists involved in a research project and of the scientific support staff must be clear at all stages of a research project.

The participants in a research project engage in regular communication. They define their roles and responsibilities in an appropriate manner and adjust them as necessary. An adjustment is particularly appropriate if the focus of the work of one of the participants in the research project changes.

Guideline 9: Research design

When planning a project, scientists at Aalen University take the current state of research into account and acknowledge it. Identifying relevant and appropriate research questions

requires careful research into research achievements that have already been made publicly available. The university ensures that the necessary conditions for this are in place.

Methods for avoiding (unconscious) bias in the interpretation of findings, such as blinding of test series, are used as far as possible. Scientists at the university examine whether and, if so, to what extent gender and diversity may be relevant to the research project (with regard to methods, work program, objectives, etc.). The respective framework conditions are taken into account when interpreting findings.

Guideline 10: Legal and ethical framework conditions, rights of use

Scientists at Aalen University exercise the freedom of research granted by constitutional law in a responsible manner. They take into account rights and obligations, in particular those resulting from legal requirements, but also from contracts with third parties, and, if necessary, obtain and submit approvals and ethical votes. With regard to research projects, a thorough assessment of the research consequences and the respective ethical aspects should be carried out. The legal framework conditions for a research project also include documented agreements on the rights of use for research data and research results arising from it.

Scientists are constantly aware of the danger of misuse of research results. Their responsibility is not limited to compliance with legal requirements, but also includes the obligation to use their knowledge, experience, and skills in such a way that risks can be identified, assessed, and evaluated. In doing so, they take particular account of aspects related to security-relevant research (dual use).

The university is responsible for ensuring that its members and affiliates act in accordance with the rules and promotes this through appropriate organizational structures. It develops binding principles for research ethics and procedures for the appropriate assessment of research projects. Where possible and reasonable, scientists at the university conclude documented agreements on rights of use at the earliest possible stage of the research project.

Documented agreements are particularly useful when several academic and/or non-academic institutions are involved in a research project or when it is foreseeable that a scientist will change research institutions and wishes to continue using the data generated by him or her for (his or her own) research purposes. The researcher who collects the data is particularly entitled to use it. Within the framework of an ongoing research project, the rights holders also decide (in particular in accordance with data protection regulations) whether third parties should be given access to the data.

Guideline 11: Methods and standards

To answer research questions, scientists at Aalen University use scientifically sound and comprehensible methods. When developing and applying new methods, they attach particular importance to quality assurance and the establishment of standards.

The application of a method usually requires specific skills, which may be covered by close cooperation. The establishment of standards for methods, the use of software, the collection of research data, and the description of research results is an essential prerequisite for the comparability and transferability of research results.

Guideline 12: Documentation

Scientists at Aalen University document all information relevant to the production of a research result in a manner that is as comprehensible as is necessary and appropriate in the field concerned, so that the result can be verified and evaluated. As a matter of principle, they therefore also document individual results that do not support the research hypothesis. In this context, the selection of results must be avoided. If specific technical recommendations exist for verification and evaluation, the scientists prepare the documentation in accordance with the respective specifications. If the documentation does not meet these requirements, the limitations and the reasons for them shall be explained in a comprehensible manner. Documentation and research results must not be manipulated; they must be protected against manipulation as best as possible.

An important basis for enabling replication is to store the information necessary for understanding the research, including the research data used or generated, the methods, evaluation, and analysis steps, and, if applicable, the development of the hypothesis, to ensure the traceability of citations, and, as far as possible, to allow third parties access to this information. When developing research software, the source code is documented.

Guideline 13: Providing public access to research results

In principle, scientists at Aalen University contribute all their findings to scientific discourse. In individual cases, however, there may be reasons not to make findings publicly available (in the narrower sense in the form of publications, but also in the broader sense via other communication channels); This decision must not depend on third parties, except in cases where the rights of third parties are affected, a patent application has been filed, contract research is involved, or security-related research is being conducted. Scientists decide on their own responsibility—taking into account the customs of the relevant field—whether, how, and where they make their results publicly available. Once a decision has been made to make results publicly available, scientists and researchers describe them in a complete and comprehensible manner. This also includes, as far as possible and reasonable, making available the research data, materials, and information underlying the results, the methods used, and the software employed, and providing a comprehensive description of the work processes. Self-programmed software is made publicly available at the appropriate time, stating the source code and taking into account issues such as the protection of qualification work, intellectual property, and economic considerations, e.g., in the context of research and development work. Scientists provide complete and accurate evidence of their own and others' preliminary work.

For reasons of traceability, research connectivity, and reusability, scientists shall, whenever reasonably possible, deposit the research data and key materials underlying the publication in recognized archives and repositories in accordance with the FAIR principles ("Findable, Accessible, Interoperable, Reusable"). Restrictions may arise in the context of patent applications with regard to public accessibility. If specially developed research software is to be made available to third parties, it shall be provided with an appropriate license. In line with the principle of "quality before quantity," scientists and researchers avoid unduly fragmented publications. They limit the repetition of content in their publications as (co-)authors to the extent necessary for understanding the context. They cite their previously published results, provided that

exceptionally not permitted according to the discipline-specific self-image.

Guideline 14: Authorship

An author at Aalen University is someone who has made a genuine, verifiable contribution to the content of a scientific text, data, or software publication. All authors agree to the final version of the work to be published. They bear joint responsibility for the publication, unless explicitly stated otherwise. Authors shall ensure and, as far as possible, work to ensure that their research contributions are marked by publishers or infrastructure providers in such a way that they can be correctly cited by users.

The contribution must relate to the scientific content of the publication. Whether a contribution is genuine and verifiable must be assessed separately in each individual case and depends on the subject area concerned. A verifiable, genuine contribution is deemed to exist in particular if a scientist has made a scientifically significant contribution to

- the development and conception of the research project or
- the development, collection, procurement, provision of data, software, sources, or
- the analysis/evaluation or interpretation of data, sources, and the conclusions drawn from them, or
- in the writing of the manuscript.

If a contribution is not sufficient to justify authorship, this support can be appropriately acknowledged in footnotes, in the foreword, or in the acknowledgments. Honorary authorship, where no such contribution has been made, is not permitted. A management or supervisory role does not in itself constitute co-authorship. Scientists agree on who should be the author of the research results. The order of authorship is agreed upon in a timely manner, usually at the latest when the manuscript is being written, based on comprehensible criteria and taking into account the conventions of each field. Without sufficient reason, the necessary consent to publish results may not be refused. Refusal of consent must be justified by verifiable criticism of data, methods, or results.

Guideline 15: Publication medium

Authors at Aalen University carefully select the publication organ, taking into account its quality and visibility in the respective field of discourse. Scientists who take on the role of editors carefully consider which publication organs they will take on this task for. The scientific quality of a contribution does not depend on the publication organ in which it is made publicly available.

In addition to publications in books and journals, specialist repositories, data and software repositories, and blogs are also considered. A new or unknown publication medium is reviewed for its credibility. An essential criterion in the selection decision is whether the publication medium has established its own guidelines for good scientific practice.

Guideline 16: Confidentiality and neutrality in reviews and consultations

Honest conduct is the basis for the legitimacy of a decision-making process. Scientists at Aalen University who evaluate submitted manuscripts, funding applications, or the qualifications of individuals are bound to strict confidentiality in this regard. They disclose

all facts that could give rise to concerns about bias. The obligation to maintain confidentiality and disclose facts that could give rise to concerns about bias also applies to members of scientific advisory and decision-making bodies.

The confidentiality of third-party content to which the reviewer or committee member has access precludes disclosure to third parties and personal use. Scientists shall immediately report any conflicts of interest or bias that could arise in relation to the research project under review or the person or subject of the consultation to the responsible authority.

Guideline 17: Archiving

Researchers at Aalen University shall adequately secure publicly available research data or research results, as well as the underlying core materials and, where applicable, the research software used, in accordance with the standards and practices of the respective field, and shall retain them for an appropriate period of time. If there are comprehensible reasons for not retaining certain data, the researchers shall explain these.

When scientific findings are made publicly available, the underlying research data (usually raw data) is generally stored for a period of ten years in an accessible and traceable manner at the institution where it was generated or in cross-location repositories, depending on the respective field. In justified cases, shorter retention periods may be appropriate; the reasons for this will be clearly explained. The retention period begins on the date of public access.

For internal archiving, the university maintains a redundant storage system that is expanded in line with the development of storage requirements. Storage capacity is allocated upon request by the university's CIO.

(3) Non-compliance with good scientific practice; procedure

Guideline 18: Whistleblowers and persons subject to allegations

The competent bodies at Aalen University (usually ombudspersons and the Permanent Commission for the Investigation of Scientific Misconduct), which investigate suspected scientific misconduct, take appropriate measures to protect both the whistleblower and the person or persons affected by the allegations. The investigation of allegations of scientific misconduct is expressly conducted in accordance with the principles of confidentiality and the presumption of innocence. The whistleblower's report must be made in good faith. Deliberately false or malicious allegations may themselves constitute scientific misconduct. Neither the whistleblower nor the person affected by the allegations should suffer any disadvantages in their own scientific or professional advancement as a result of the report.

The report should, as far as possible, not lead to delays in the qualification of the whistleblower, especially in the case of young scientists, and the completion of theses and doctorates should not be disadvantaged. This also applies to working conditions and possible contract extensions. The authorities responsible for processing the report must take this into account.

The investigating body shall take into account the fundamental principle of the

presumption of innocence of the person concerned at every stage of the proceedings, weighing up the circumstances of each individual case. As a matter of principle, the person concerned by the allegations shall not suffer any disadvantages as a result of the investigation of the allegations until scientific misconduct has been formally established. The whistleblower must have objective evidence that standards of good scientific practice may have been violated. If the whistleblower is unable to verify the facts themselves or if there are uncertainties regarding the interpretation of the guidelines for good scientific practice with regard to an observed incident, the whistleblower should contact a local ombudsperson or the external body "Ombudsman for Science" to clarify the suspicion.

The university decides on its own responsibility whether to investigate reports in which the whistleblower does not give his or her name (anonymous reports). An anonymous report can only be investigated if the whistleblower provides the body investigating the suspicion with reliable and sufficiently concrete facts. If the name of the whistleblower is known, the investigating body shall treat the name as confidential and shall not disclose it to third parties without the whistleblower's consent. The only exceptions to this rule are if there is a legal obligation to do so or if the person concerned by the allegations would otherwise be unable to defend themselves properly because, in exceptional cases, the identity of the whistleblower is relevant. Before the name of the whistleblower is disclosed, he or she shall be informed immediately. The whistleblower may decide whether to withdraw the report if disclosure of his or her name is foreseeable. The confidentiality of the procedure is subject to restrictions if the whistleblower makes the allegations public. The investigating body shall decide on a case-by-case basis how to deal with the breach of confidentiality by the whistleblower. The whistleblower is also in the case of a not proven scientific misconduct, provided that the allegations were not made knowingly or in bad faith.

Guideline 19: Procedure in cases of suspected scientific misconduct

Aalen University has established a set of rules for dealing with allegations of scientific misconduct in its statutes on the procedure for dealing with scientific misconduct. The statutes include, in particular, definitions of scientific misconduct, procedural rules, and measures to be taken if scientific misconduct is found to have occurred. The rules are applied in addition to relevant, higher-ranking standards.

Not every violation of the rules of good scientific practice constitutes scientific misconduct. Only intentional or grossly negligent violations that are laid down in the university's rules and regulations or in other relevant, higher-ranking standards are considered scientific misconduct. In particular, the fabrication and falsification of data and plagiarism are considered scientific misconduct. The statutes governing the procedure for dealing with scientific misconduct at Aalen University include, in particular, provisions on responsibility for each individual stage of the procedure, the assessment of evidence, the representation of ombudspersons and members of the commission for investigating misconduct in science, bias, and procedural principles under the rule of law. The person affected by the allegations and the person who reported them are given the opportunity to comment at every stage of the proceedings. Until scientific misconduct is proven, the information about those involved in the proceedings and the findings to date are treated confidentially.

The university shall ensure that the entire proceedings are conducted as promptly as

possible and shall take the necessary steps to complete each stage of the proceedings within a reasonable period of time. The aforementioned statutes on the proceedings set out various measures to be applied depending on the severity of the proven scientific misconduct. If, after scientific misconduct has been established, the withdrawal of an academic degree is considered as a measure, the relevant authorities will be involved. The result will be communicated to the scientific organizations concerned and, if necessary, to third parties who have a justified interest in the decision, after the investigation has been completed and in accordance with data protection regulations and the interests of personal privacy.

§ 3 Special type of disclosure

These statutes and the statutes on the procedure for dealing with scientific misconduct at Aalen University will be provided to all those engaged in scientific work at the university in their currently valid version for their attention.

§ 4 Entry into force

These statutes shall enter into force on the day after their publication. At the same time, the statutes on ensuring good scientific practice dated August 26, 2002, shall cease to be in force.

Aalen, November 2, 2022

Signed by Prof. Dr. Harald Riegel
Rector

Note: The English translation is provided for information purposes only. In case of any discrepancies or inconsistencies between the German and English version, the German version shall prevail.