

The 'Policy of Hannover Medical School (MHH) on the safeguarding of good scientific practice and procedural rules for dealing with scientific misconduct' set out below was approved by the MHH Senate in its meeting on 10 February 1999, and updated both on 10 September 2008 and on 12 October 2011. These policy principles shall be made accessible to all research associates ('Wissenschaftliche Mitarbeiter') and are to be regarded as binding guidelines for scientific activities at the School.

The policy of Hannover Medical School on the safeguarding of good scientific practice and procedural rules for dealing with scientific misconduct

This text takes up the recommendations of the German Research Foundation (DFG) and the Standing Conference of German University Presidents (HRK) on this matter and, in its German version, adopts parts of the wording used by the Medical Faculty of the Humboldt University of Berlin and the Philipps University of Marburg on the same issues.

The 'Proposals for Safeguarding Good Scientific Practice', issued by the DFG in January 1998 in both English and German, have been made available as an offprint to all departments at MHH and can also be viewed on the MHH website at '<http://www.mh-hannover.de/10127.html>'.

1. Honesty as a fundamental principle in scientific activities

Honesty towards oneself and others is the fundamental principle underlying scientific activities in all scientific institutions and disciplines worldwide. Honesty is the ethical standard assumed in all scientific work, however greatly the rules involved in these activities may differ between disciplines. It is part of the self-governing role of the scientific community to safeguard the rules of good scientific practice with this spirit in mind.

2. Principles of good scientific practice

The research associates (*Wissenschaftliche Mitarbeiter*) and the employees reporting to them are required to apply the principles of good scientific practice and to lead by example in doing so. They are also required to convey to students and junior scientific staff the principles of good scientific practice. This applies in particular to the MHH teaching staff. Based on the DFG's recommendations, good scientific practice encompasses the following rules in particular:

- Observing professional standards;
- Documenting results, including the backing-up and storing of primary data;
- Consistently questioning and critically examining all of one's own findings;
- Maintaining strict honesty with regard to the contributions of partners, competitors and predecessors;
- Responsibly supervising junior scientific staff;
- Clearly assigning and assuming responsibility for leadership in work groups;
- Jointly assuming responsibility for scientific publications by all authors.

3. Infringements of the rules of good scientific practice

1. Scientific misconduct is defined as occurring when, in a context of scientific importance, misrepresentation is made in a wilful or grossly negligent manner, the intellectual-property rights of others are infringed or their research activities are otherwise impeded. Each individual case will be decided on its own circumstances.

The following, in particular, may be considered as serious misconduct:

- a) Misrepresentation
 - Fabrication of data;
 - Falsification of data, as for example:
 - i. by the non-disclosed selection or rejection of undesirable findings;
 - ii. by manipulation of a description or figure
 - Incorrect information in an application for employment or funding (including misrepresentation concerning the medium of publication and articles awaiting publication)
- b) Infringement of intellectual-property rights

Relating to any pieces of work created by someone else that are protected by copyright, or substantial scientific findings, hypotheses, teachings or approaches to research established or made by someone else, involving the following:

 - Unauthorized use while claiming authorship (plagiarism);
 - The use of approaches to research and ideas of others (theft of ideas), especially in one's capacity as reviewer;
 - The presumption or unfounded acceptance of scientific authorship or co-authorship;
 - Falsification of content;
 - The unauthorized publication and unauthorized disclosure to a third party, prior to the publication of the work, finding,

hypothesis, teaching or approach to research.

- c) Claiming the (co-) authorship of others without the latter's consent
- d) Sabotaging research work (including damaging, destroying or manipulating experimental facilities, equipment, documentation, hardware, software, chemicals or other items required by others to carry out an experiment)
- e) Eliminating primary data wherever this violates statutory regulations or recognized principles of scientific work specific to the particular discipline.

2. Co-responsibility for misconduct may in particular result from:

- actively participating in the misconduct of others;
- knowledge of falsifications by others;
- co-authorship of publications tainted by falsification; or
- grossly neglecting supervisory obligations.

4. Responsibility for implementing the rules of good scientific practice

Each scientist is personally responsible for his/her own conduct in the context of scientific work. Anyone who leads a work group shall be responsible for ensuring that the conditions experienced are conducive to good scientific practice within this group and that the relevant rules are adhered to. This necessitates active communication within the work group and, in particular, the disclosure of scientific data in the context of ongoing internal discussion within the group. It is, therefore, the task of leaders of scientific work groups to ensure that all members thereof are aware of their rights and obligations in relation to good scientific practice. Leaders of scientific work groups are required to create an environment in which this code is complied with. It is seen as particularly important that hypotheses, theories and (first and foremost) scientific data generated by individual members of the group are openly discussed and hence also critically examined. Leading a scientific work group requires presence and awareness. If these requirements are not adequately fulfilled, leadership functions must be delegated.

5. Written records pertaining to doctoral students

With regard to the supervision of doctoral students it is recommended that, before the work itself begins, the student and his/her supervisor shall jointly prepare a written outline on the execution and aims of the planned project. Both the supervisor and the doctoral student are to have a copy of this outline before work commences. The outline shall contain a written note to the effect that the doctoral student has been informed by the supervisor as to the rules of good scientific practice. If conflict situations between the persons involved arise during the course of the work, the Ombudsperson may be consulted to help resolve the issue. Further details are covered by the doctoral-degree regulations (*Promotionsordnungen*) of MHH.

6. Documentation requirement

Primary data that serve as the basis for publications shall remain accessible on durable and secure data media within the work group for ten years. The scientist concerned shall assume responsibility for this and is required to be able to furnish proof that the data have been properly recorded. Moreover, each experiment and each numerical calculation is to be recorded, including all the detailed steps involved, in order that, if so required, someone with the required knowledge can repeat the experiment and/or understand the basis for the calculation. The reproducibility of a scientific experiment is its primary test. Work logbooks must have a hard cover and numbered pages, and no pages may be removed. They must be stored securely. Relevant data that, by virtue of their format, cannot be recorded in the logbook, are also to be stored securely for at least 10 years and clearly identified by relevant notes in the logbook.

The loss of original data from a laboratory is an infraction of basic principles of careful scientific practice and justifies a prima facie assumption of dishonesty or gross negligence. If a scientist moves to a different institution, the original data shall, as a rule, remain at the place where they were obtained. Under individual agreements between the 'old institution' and the 'new institution' at which the scientist is to be employed, different arrangements for storing original data may be made. The agreement as to where these records are to be kept shall be recorded on the original data carrier and signed by the persons involved.

7. Publications, authorship

Authors of scientific publications assume joint responsibility for their contents. So-called 'honorary authorship' is therefore not permitted. In publications the chief aim of which is to present new scientific findings, these findings are to be described in full and in a straightforward manner. One's own and others' previous work must be fully and correctly cited. Previously published findings are to be cited so that they are clearly identified as such, and to the extent that they are necessary for understanding the relationship between previous and present findings.

The only persons to be mentioned as the authors of an original scientific publication shall be those authors who have themselves made a significant contribution to the design of studies or experiments, to the preparation, analysis and interpretation of data and the wording of the manuscript, and who have agreed to its joint publication, i.e. those who share responsibility for publication. MHH has made more detailed stipulations in its 'Recommendations on Authorship', adopted by its Senate on 14 October 1998.

8. Misconduct body

The MHH Senate shall appoint an Ombudsperson to serve as a neutral and qualified contact on questions concerning good scientific practice. This individual is to be a member of the MHH teaching staff. His/Her predecessor in this office shall act as Deputy Ombudsperson. If required, the Senate may appoint another Deputy. It is the role of the Ombudsperson, in the event that allegations of scientific misconduct are made, to receive these in confidence and, if required, to consult the MHH governing body. The MHH governing body will provide a Commission for Good Scientific Practice ('GWP-Kommission') to assist the Ombudsperson. This consists of five members, four of which shall each be appointed from one of the four Sections at MHH, and a legal expert. The period of office is three years, with re-election possible.

The names of the Commission's members will be listed in the MHH course catalogue and on its Intranet site. The Commission will take action at the request of the Ombudsperson. If direct allegations are made against the Ombudsperson or the MHH governing body, the Commission may be convened by one of its members. The Commission shall elect a Chair from among its members and make decisions by majority vote. The Ombudsperson and his/her Deputy belong to the Commission in a visiting, advisory capacity.

Proceedings before the Commission shall not replace other procedures governed by law or statute (such as regulatory proceedings carried out by the higher-education institutions, disciplinary proceedings, proceedings before industrial tribunals, and criminal proceedings). These may be initiated by the relevant bodies or institutions.

9. Procedural rules for dealing with scientific misconduct

The Ombudsperson and Commission for Good Scientific Practice shall, in their activities, be subject to the following procedural rules. If so required in individual cases, amendments to the procedure may be proposed to the MHH governing body.

9.1. Preliminary proceedings

- a) Allegations of scientific misconduct shall be received by the Ombudsperson. This information may be provided either orally or in writing. If allegations are made orally, a written note of the suspicion is to be recorded along with supporting evidence.
- b) The Ombudsperson is entitled, in the event that misconduct in breach of good scientific practice is suspected, to question the persons or institutions concerned, to have the relevant documents submitted and to consult other employees known to the accused persons or institutions. This clarification process should, as far as possible, be completed within 14 days of the relevant allegation being noted, for which duration all those involved are required to maintain confidentiality. In case of doubt, following consultation with and the agreement of all involved, the MHH governing body may be included in the process at a non-public meeting.
- c) The Ombudsperson shall submit a final report to the MHH governing body, a copy of which is to be received by all persons concerned. If an expressed suspicion was unable to be dispelled in this final report, the MHH governing board shall – if necessary in consultation with the MHH Senate – make a decision on whether to instigate a formal investigation.

9.2. Formal investigation

- a) On the instruction of the MHH governing body, the Ombudsperson shall, while maintaining confidentiality to protect the informant, forward allegations of scientific misconduct to the Commission for Good Scientific Practice, which will further investigate the matter.
- b) The person suspected of misconduct will immediately, being informed about the incriminating facts and evidence, be given the opportunity to make a written statement. A two-week period shall be made available for doing so.
- c) The Commission may, at its own discretion, call in consultants specializing in the scientific field to which the facts of the case pertain, as well as experts experienced in handling such cases, as additional members in an advisory capacity.
- d) The deliberations of the Commission are to be held orally and in camera. It shall, taking all evidence into account in an unbiased manner, consider whether scientific misconduct has occurred. The person accused of misconduct is, in an appropriate manner, to be given the opportunity to make a statement. Oral evidence is to be taken from the affected persons; additionally, a person of their choice can be brought in by way of assistance. The same applies for other persons to be questioned.
- e) It may be necessary to disclose the name of the informant if it is not otherwise possible for the person concerned to properly defend him- or herself, because (for example) the credibility and motives of the informant require investigation with regard to the allegation of possible misconduct.
- f) If the Commission regards misconduct as not proven, the proceedings shall be discontinued. If the Commission regards misconduct as proven, it shall submit the findings of its investigation to the MHH governing body with a proposal on how to proceed further, partly in order to safeguard the rights of others, for the purpose of decision-making and taking any further action deemed appropriate.
- g) Both the person concerned and the informant are to be immediately notified in writing of the chief reasons that have led to the proceedings being discontinued or the case being referred to the MHH governing body.
- h) There is no internal complaints procedure in place for appealing against the Commission's ruling.
- i) The records of the formal investigation shall be kept for 30 years. The persons named in connection with a case of scientific misconduct shall be entitled to request that the Commission issues them with a notice (which exonerates them) concerning the duration of the period of retention.

9.3. Further procedure

- a) If scientific misconduct is confirmed to have occurred then the MHH governing body shall, both to uphold the scientific standards of MHH and the rights of all those both directly and indirectly affected, review the necessity of further measures. The penalties for scientific misconduct shall be determined by the circumstances of each individual case.
- b) At MHH, the academic consequences, such as the correction of publications or their lists of authors, the withdrawal of academic degrees or of the licence to teach, shall be reviewed. The Commission for Good Scientific Practice shall, in cooperation with the MHH governing body, review whether and to what extent other scientists (earlier and possible collaborating partners, co-authors), scientific institutions, scientific journals and publishers (if publications are involved), funding bodies and scientific organisations, professional associations, government ministries and the public should or must be notified.
- c) The bodies or institutions responsible in each case shall, appropriate to the circumstances of the particular case, take action under employment, civil or criminal law or regulatory/disciplinary measures by following appropriate procedures.

This policy adopted by Hannover Medical School (MHH) aimed at upholding good scientific practice shall apply from the day on which it was adopted by the 481st meeting of the MHH Senate on 12 October 2011. In signing, all MHH staff employed in teaching and research commit to complying with these rules in their scientific activities. This also applies to doctoral students after they have, at the start of their scientific activities, been introduced to these rules by the member of scientific staff supervising them.