
POLICY:

RULES OF GOOD SCIENTIFIC PRACTICE

AND

PROCEDURES IN CASE OF SCIENTIFIC
MISCONDUCT

of the Max Delbrück Center for Molecular Medicine
in the Helmholtz Association (MDC)

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TABLE OF CONTENTS

1	General Principles of Good Scientific Practice at the MDC.....	4
1.1	General principles of scientific activity	4
1.2	The professional ethics of those working in science and research	4
1.3	Responsibility of the MDC leadership.....	5
1.4	Responsibility of the heads of research groups	5
1.5	Responsibility for early career scientists	6
1.6	Assessment of scientific performance	6
1.7	Research design.....	7
1.8	Compliance with ethical and legal frameworks, including usage rights.....	7
1.9	Documentation, research data management and archiving.....	8
1.10	Publishing of research results	9
1.11	Authorship in scientific publications	10
1.12	Confidentiality and neutrality	11
1.13	Guaranteeing and protecting credits and priority for innovative scientific findings ..	11
2	Research Ombudspersons at the MDC.....	12
2.1	Appointment of ombudspersons.....	12
2.2	Tasks of the ombudspersons for good scientific practice at the MDC.....	12
2.3	Validity checks and conflict mediation by the ombudspersons	13
3	Rules of Procedure in case of Scientific Misconduct	14
3.1	General considerations	14
3.2	Types of scientific misconduct	14
3.3	Preliminary inquiry by the ombudsperson(s) (see 2.3)	16
3.4	Formal investigation of suspected scientific misconduct.....	16
3.4.1	Aim of the formal investigation of suspected scientific misconduct.....	16
3.4.2	The investigation committee	16
3.4.3	The investigative proceedings	18
3.4.4	Deliberations of the investigation committee	18
3.4.5	Conclusion of the investigative proceedings.....	19
3.4.6	Right of Objection.....	19
3.5	Sanctions for scientific misconduct	20
3.5.1	Measures from the scientific community.....	20

1 GENERAL PRINCIPLES OF GOOD SCIENTIFIC PRACTICE AT THE MDC

The following rules for safeguarding good scientific practice are basis for all research work performed at the MDC. By signing an employment contract with the MDC, every individual employed in a scientific capacity at the MDC (researchers¹) enters into a binding agreement to comply with these articles. Guests or researchers without an employment contract with the MDC must sign a Declaration of Commitment.

1.1 GENERAL PRINCIPLES OF SCIENTIFIC ACTIVITY

- (1) A fundamental ethical principle is honesty on the part of the researchers responsible for their findings – in the form of both personal integrity and honesty towards colleagues. This includes performing scientific research in accordance with the recognized rules, treating and presenting facts and findings in a clear and transparent way, conducting systematic self-evaluation to minimize the risk of reaching erroneous conclusions, and disclosing/correcting any identified errors. Ensuring these conditions is a core task of the scientific community's collective self-governance.

1.2 THE PROFESSIONAL ETHICS OF THOSE WORKING IN SCIENCE AND RESEARCH

- (1) Researchers are responsible for putting the fundamental values and norms of scientific research into practice and advocating for them. Every researcher is responsible for ensuring that their personal conduct meets the standards of good scientific practice. Education in the principles of good research practice begins at the earliest possible stage in academic teaching and training. Researchers at all career levels regularly update their knowledge about the standards of good scientific practice and the current state of the art.
- (2) In science, freedom of opinion and, in disputes, the mutual recognition of researchers is premise, regardless of social rank or position in the professional hierarchy.
- (3) Even in the case of profound, passionate disagreement, the principle of mutual respect and fair tolerance prevails.
- (4) Researchers make use of the constitutionally guaranteed freedom of research in a responsible way.

¹ Note: The term "scientist" in the context of this policy also includes all PIs, postdocs, PhD students, undergraduate students, and technical staff involved in research projects, and thus differs in part from definitions in other jurisdictions.

1.3 RESPONSIBILITY OF THE MDC LEADERSHIP

- (1) The Board of Directors creates the framework for scientific work at the MDC. It ensures adherence to and the promotion of good scientific practice, and guarantees the necessary conditions to enable researchers to comply with legal and ethical standards.
- (2) The Board of Directors is responsible for providing appropriate career support for all researchers. The basic framework includes clear, written policies and transparent procedures for staff selection and development, as well as for early career support and equal opportunities.
- (3) Abuse of power and exploitation of dependencies shall be prevented by appropriate organizational measures.

1.4 RESPONSIBILITY OF THE HEADS OF RESEARCH GROUPS

- (1) Scientific work at the MDC is carried out primarily in cooperation within research groups. The heads of research groups and heads of scientific technology platforms are entrusted with the implementation of the research project and represent the group and its findings before the scientific community, the Board of Directors, as well as before any legal entities and/or government bodies that provide third-party funding. The head of each research group must ensure compliance of their group with the rules of good scientific practice.
- (2) The MDC's heads of research groups are responsible for ensuring compliance with administrative regulations as well as workplace law regulations and other legal requirements.
- (3) The interactions within research groups are designed such that the group can perform its tasks, that the necessary cooperation and coordination with other groups within and outside the MDC can be achieved, and that all members of the research group understand their roles, rights and duties.
- (4) Researchers benefit from a balance of support and personal autonomy appropriate to their career level. They are granted adequate status with the corresponding rights of participation. Through gradually increasing autonomy, they have the power to shape their own career.
- (5) The heads of the research groups comply with the MDC's leadership guidelines. The size and organization of the research group is designed in such a way that leadership tasks can be performed appropriately – in particular mentoring, scientific support and supervisory duties.
- (6) The research group head must have a clear understanding of the nature of the primary data generated by the laboratory's personnel, including how these data are acquired, analyzed, and interpreted. This kind of review and evaluation will allow the research group head to ensure that staff members are receiving the guidance and training they need, and will help the research group head to maintain the quality of the laboratory's research.
- (7) It is the research group head's responsibility to ensure compliance with the legal regulations laid down in Germany's General Equal Treatment Act (*Allgemeines Gleichbehandlungsgesetz*), particularly regarding the prevention of all forms of bullying and discrimination based on gender, sexual orientation, ethnic origin/affiliation, age, religion and belief, socio-economic circumstance, or physical disability of the members of the unit. Abuse of power and exploitation of dependencies shall be prevented by appropriate measures within the research unit.

Researchers must adhere to the MDC's guideline against discrimination, bullying and harassment.

1.5 RESPONSIBILITY FOR EARLY CAREER SCIENTISTS

- (1) Students and graduate students must be appropriately supervised while performing their work within the research group.
- (2) The primary supervisor (research group head) actively supports the graduate students' independent research activities by ensuring that they can complete research and courses that are necessary for achieving the doctoral qualification within a reasonable period of time. It is advised to name a mentor with higher career level from within the research group for each of the early career scientists.
- (3) The MDC's Training and Career Center provides accompanying support to all those gaining academic qualifications at the MDC. Individual thesis advisory committees monitor and accompany the progress of individual graduate students.
- (4) If problems or conflicts arise that cannot be resolved to a satisfactory extent within the research group, two confidants are available to advise graduate students. The two confidants are elected by graduate students from among the research group leaders of the MDC and confirmed by the Board of Directors. The confidants are not identical with the ombudspersons for good scientific practice (see 2. Research Ombudspersons at the MDC).

1.6 ASSESSMENT OF SCIENTIFIC PERFORMANCE

- (1) Every researcher is obliged to judge their own performance and that of colleagues fairly and objectively. This applies to all areas of scientific judgment, in particular:
Decisions on hiring employees and appointing senior staff
 - Review for the award of scientific degrees and other awards and distinctions
 - Applications for performance-related research funds
 - The preparation of expert opinions and evaluation reports
 - The granting of scholarships
 - The evaluation of publications and reports according to scientific standards
 - Granting of necessary experiment approvals and ethics votes
- (2) The main criteria by which the performance of researchers is assessed are originality and quality. Further aspects for evaluating research performance are taken into consideration. These include promotion of early-career scientists, academic self-governance, public relations work, transfer of knowledge and technology.
- (3) Appropriate allowance is made for periods of absence due to personal, family or health reasons or for prolonged training or qualification phases resulting from such absences, as well as for alternative career paths or comparable circumstances.
- (4) By no means gender, sexual orientation, ethnic origin/affiliation, age, religion and belief, socio-economic circumstance, or physical disability (refer to Germany's General Equal Treatment Act (*Allgemeines Gleichbehandlungsgesetz*)) may be included in an academic performance evaluation. Implicit bias is to be minimized.

1.7 RESEARCH DESIGN

- (1) The roles and responsibilities of researchers participating in a research project must be clear at each stage of the project. Researchers consider and acknowledge the current state of research when planning a project, ensuring they are familiar with published research findings so they can identify relevant and suitable research questions.
- (2) To answer research questions, researchers must use scientifically sound and appropriate methods. When developing and applying new methods, they attach particular importance to quality assessment and the establishment of standards.
- (3) Methods to avoid (unconscious) distortions in the interpretation of findings, e.g. the use of blinding in experiments, are used where possible.
- (4) Researchers examine whether and to what extent gender and diversity dimensions may be of significance to the research project (with regard to methods, work program, objectives, etc.).
- (5) Experiments and theoretical studies require extensive preparation and precise planning. The principles of good scientific practice prohibit the implementation of elaborate experiments and studies on the basis of pure trial and error. Quality assessment and data validation should be outlined prior to the experimental procedure.
- (6) Research field-specific standards and established methods are applied for continuous quality control during the research process. This includes, for example, 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 books.
- (7) The origin of the data, organisms, materials and software used in the research process is disclosed and the reuse of data is clearly indicated; original sources are cited.

1.8 COMPLIANCE WITH ETHICAL AND LEGAL FRAMEWORKS, INCLUDING USAGE RIGHTS

- (1) Researchers must take into account all rights and obligations, particularly those arising from legal requirements and third-party contracts, and obtain and present approvals and ethics votes whenever required.
- (2) The potential consequences of a research project should be evaluated in detail and ethical aspects should be assessed.
- (3) Experimental and epidemiological-diagnostic studies involving volunteers or patients are subject to special regulations regarding planning, approval, implementation and analysis. The Declaration of Helsinki applies accordingly.
- (4) Good scientific practice requires strictest compliance with the relevant regulations on the handling of personal data. The General Data Protection Regulation (GDPR, EU 2016/679) and the Berlin Data Protection Law (*Berliner Datenschutzgesetz*) apply accordingly.
- (5) The MDC Directorate and all researchers, including those working in the animal facilities, are committed to the consistent implementation of the 3R principles in animal experimentation (replace, reduce, refine).
- (6) The legal framework of a research project includes documented agreements on usage rights relating to data and results generated by the project. Documented agreements are especially useful when multiple academic and/or non-academic

institutions are involved in a research project or when it is likely that researchers will move to a different institution and continue using the data they generated for their own research purposes. Researchers should contact the responsible administrative departments of the MDC (Research Funding and/or Legal Department) as early as possible before the start of the research project, so that agreements can be negotiated and concluded as early as possible, in particular regarding the granting of rights of use to research results, both for institutions involved in the project and for third parties.

- (7) Researchers pay particular attention to the aspects associated with security-relevant research (dual use). Please refer to the MDC policy on foreign trade audit in international relations.
- (8) The MDC Directorate is responsible for ensuring that their employees' actions comply with regulations and promote this through suitable organizational structures and training. They develop binding ethical guidance and policies and define procedures to assess ethical issues relating to research projects.

1.9 DOCUMENTATION, RESEARCH DATA MANAGEMENT AND ARCHIVING

- (1) It must be ensured that the entire research process, from conception to implementation and evaluation, is carefully and transparently documented to allow results to be reviewed and assessed.
- (2) Documentation and research results must not be manipulated and they are protected as effectively as possible against manipulation.
- (3) Bias and the targeted selection of data for documentation must be avoided. Even the non-confirmation of a hypothesis is a scientific achievement that contributes to the gain of knowledge and must be documented accordingly. The same applies to failed experiments (e.g. individual data points that do not support a hypothesis).
- (4) The analysis process of primary data must be described and recorded (e.g. the quantifiable representation of primary data, statistical analysis, parameter setting in mathematical models). In particular, any interference with primary data (e.g. the removal of outliers, the censoring of outliers in statistical processing) must be recorded in detail and be scientifically justified.
- (5) The statistical models in which the primary data serve as samples must be justified with regard to their applicability to the specific case and, if necessary, presented in the methodological part of the publication.
- (6) Where research software is being developed, the source code is documented.
- (7) If files of any type are modified to facilitate annotation or comprehension, this must be documented in processing logs and image captions. The original must remain accessible and verifiable.
- (8) Work records are kept by the participating researcher. The pages in a paper lab notebook should be machine readable and numbered and the entries must be dated. Subsequent corrections or deletions must be documented as such with dates. These records remain at the MDC after the project has been completed or the participating researcher has left the institute. Electronic documentation must be accessible in a stable format that does not require proprietary software for access.
- (9) All research data and material required to replicate the experiments and validate the results (raw data, biological preparations, synthetic and other material

products, source codes and analysis workflows, final results, etc.) must be archived in an accessible and identifiable manner at the MDC or in cross-location repositories for a period of ten years after the data has been made publicly available. In justified cases, shorter archiving periods may be appropriate; the reasons for this are described clearly and comprehensibly by the researcher. Further details can be found in the MDC's policy framework for research data management.

- (10) If stored on the central server, the archival data must be assigned to a particular person, usually the group leader, who also bears responsibility and access controls for that data. Information on where and how important primary objects have been stored or documented must be included in the ongoing records kept of the work.
- (11) If specific results or other products of research are used as a basis for original publications, patenting, or academic qualifications, an (electronic) folder with the originals or reliable copies of these results shall be created in parallel to the submission. This folder must be kept for a period of at least ten years after publication.
- (12) In the event of a researcher's departure, the formal handover procedure needs to be documented. The departing researchers are entitled to take copies of all data kept by them, as long as this is permitted under data protection law.
- (13) The MDC leadership ensures that the infrastructure necessary to enable proper archiving is in place.

1.10 PUBLISHING OF RESEARCH RESULTS

- (1) Part of the duties of scientific work at the MDC is to compile and publish research results and findings in a way that is accurate and fair to all participants and with an emphasis on quality and originality. This applies to original publications, reports, reviews, commentaries, popular scientific articles as well as other scientific content.
- (2) The publication medium is carefully selected to ensure its practices comply with the rules of good scientific practice. The scientific quality of a contribution does not necessarily depend on the medium in which it is published.
- (3) Researchers who assume the role of editor carefully select where they will carry out this activity to ensure the practices of the publication medium comply with the rules of good scientific practice.
- (4) Whenever possible, researchers make the research data and principal materials on which a publication is based available in recognized archives and repositories in accordance with the FAIR principles (Findable, Accessible, Interoperable, Reusable). This includes software developed by researchers themselves along with the source code.
- (5) Researchers provide full and correct information about their own preliminary work and that of others. They limit the repetition of content from publications of which they were (co-)authors to what is necessary to enable the reader to understand the context.

- (6) For original publications or other first-time public reports on new findings, the methodology² and experimental details must be presented in such a way that allows for experiments and analyses to be reproduced independently. If this can only be presented in the publication in summarized form, more detailed documentation must be placed on the internet, annexed to the publication or made accessible via a permanent link on a website (DOI).
- (7) In addition to publication in books and journals, authors may also consider academic repositories, data and software repositories, blogs and others. A new or unknown publication medium is evaluated to assess its respectability.
- (8) In principle, scientists make all results available as part of scientific/academic discourse. In specific cases, however, there may be reasons not to make results (immediately) publicly available; this decision must not depend on third parties. If the rights of third parties, patent applications, contract research or security relevant research are affected, it might be deviated from the principle of public accessibility in consultation with the administrative departments of the MDC (technology transfer office, legal department).
- (9) In line with the principle of “quality over quantity”, researchers avoid splitting research into inappropriately small publications.
- (10) If researchers have made their findings publicly available and subsequently become aware of inconsistencies or errors in them, they make the necessary corrections. If the inconsistencies or errors constitute grounds for retracting a publication, the researchers will promptly request the publisher, infrastructure provider, etc. to correct or retract the publication and make a corresponding announcement. The same applies if researchers are made aware of such inconsistencies or errors by third parties.

1.11 AUTHORSHIP IN SCIENTIFIC PUBLICATIONS

- (1) Scientific publications require the fair attribution of credit and responsibility as well as open discussion and agreement between colleagues on the authorship.
- (2) Any public presentation of joint research results (in journal articles, monographs, lectures, reports, documentation on the internet, etc.) must mention all authors. To be listed as an author, the individual needs to have made a genuine and identifiable contribution
 - a) to the design of the studies or experiments or
 - b) to their execution or
 - c) to the analysis and interpretation or
 - d) presentation of the results.
- (3) Technical staff should be included as authors if their contribution fulfills the requirements in (2).
- (4) “Honorary authorship” or authorship based on agreements made without appropriate contribution is not compatible with good scientific practice. Support solely in the provision of resources (financial, reagents or samples), technical support during data collection, proofreading the manuscript, or simply occupying a management position at the authors’ institution does not justify co-authorship.

² If standard or “in-house” methods are presented, their character must be detailed or cited accordingly in order to avoid an allegation of plagiarism.

Here, the individual's support may be properly acknowledged in footnotes, a foreword or an acknowledgement.

- (5) All participating researchers must mutually agree on the order in which the authors' names appear in a publication. It is advisable to agree upon the author list and put it down in writing as early as possible once the results of a study become apparent.
- (6) The contribution of individual authors to the publication is to be outlined in an accurate manner, recorded in writing and, if necessary, included as an annex to the manuscript to be submitted.
- (7) Special attention must be paid to sole or shared first authorship and sole or shared senior authorship. It should be noted that first authorship can serve as the basis for a publication-based doctorate at some faculties. The senior or corresponding author assumes responsibility for the entire publication as well as all communication with authors, editors, or external communication. Also, the senior or corresponding author is responsible for all decisions concerning the publication, including taking appropriate action in case problems arise.
- (8) All co-authors must be familiar with the manuscript and agree to its publication, including the order of the author list. The consent must be documented. They must also be informed of any revisions made or of submissions to other journals.
- (9) All authors are jointly responsible for the publication.
- (10) An author may only refuse consent and thus block publication if the person has a compelling argument for this refusal with regard to the quality of the publication.
- (11) Further details can be found in the MDC's publication policy.

1.12 CONFIDENTIALITY AND NEUTRALITY

- (1) Researchers who evaluate submitted manuscripts, funding proposals or personal qualifications are obliged to maintain strict confidentiality with regard to this process.
- (2) They disclose all facts that could give rise to the appearance of a conflict of interest. Reviewers may by no means take advantage of their position and present the unpublished ideas or methodological approaches of another researcher as their own or make them available to third parties.
- (3) The duty of confidentiality and disclosure of facts that could give rise to the appearance of a conflict of interest also applies to members of research advisory and decision-making bodies.

1.13 GUARANTEEING AND PROTECTING CREDITS AND PRIORITY FOR INNOVATIVE SCIENTIFIC FINDINGS

- (1) Credit and priority of novel scientific findings (ideas, formulation and proof of hypotheses, design of crucial experiment, formulation of a theory etc.) are shared by all those in a team who made a genuine contribution to the development of the result. If individuals display such findings in a presentation, conference lecture, etc., the contribution of team members and co-authors must be mentioned.
- (2) The individual use of joint results in a dissertation or for other professional qualification purposes is only permitted with the consent and naming of all team members and co-authors. If research results obtained by other team members

- need to be presented for the sake of contextualization, this may only be done with the explicit consent of the author (e.g. “N.N., unpublished, with permission”).
- (3) If the piece of intellectual credit was developed by scientific research at the MDC and/or with the use of its resources, the MDC must be mentioned as affiliation in a publication (refer to MDC’s publication policy).

2 RESEARCH OMBUDSPERSONS AT THE MDC

2.1 APPOINTMENT OF OMBUDSPERSONS

- (1) The term “ombudspersons” refers to persons responsible for safeguarding good scientific practice in accordance with the recommendations of the German Research Foundation (DFG). In addition, there are “PhD confidants” at the MDC who support and advise doctoral students and are elected by them (see 1.5 (4)).
- (2) The Scientific Council of the MDC elects two ombudspersons as contact point for all questions relating to good scientific practice, based on the recommendation of the Board of Directors. They receive a written appointment from the MDC. Elected ombudspersons should have management experience.
- (3) Both ombudspersons can step in for each other. If there is a concern of conflict of interest for one of the ombudspersons, the case in question will be handled by the other ombudsperson.
- (4) Ombudspersons may not simultaneously occupy a position in a central administrative or scientific management function at the MDC. The role of an ombudsperson is independent and not subject to directive authority.
- (5) The term of office for each ombudsperson is four years, with the possibility for one single re-election.
- (6) Ombudspersons receive necessary support and acceptance from the Directorate to carry out their duties.
- (7) The ombudspersons and Directorate ensure that they are known in their capacity at the MDC.

2.2 TASKS OF THE OMBUDSPERSONS FOR GOOD SCIENTIFIC PRACTICE AT THE MDC

- (1) The ombudspersons are always open to inquiries from researchers and are bound to strict confidentiality.
- (2) The ombudspersons are responsible for the following tasks:
 - **Prevention:** Consultation on and monitoring of training activities regarding good scientific practice at the MDC.
 - **Mediation:** Resolving conflicts between researchers, unless the validity and severity of the suspected violation requires a formal investigation.
 - **Investigation:** Investigating suspected scientific misconduct and deciding whether the allegation can be resolved by internal measures at the MDC, or whether it is necessary to convene an independent investigation committee.

- (3) If an allegation is made of a serious violation of civil law or the MDC guidelines against discrimination, bullying and harassment, as opposed to scientific misconduct, the Board of Directors and/or other bodies commissioned by it (Personnel Department, Legal Affairs Department, staff council, conflict resolution and complaints offices) must be involved in the investigation. Depending on the case at hand, the Board of Directors or one of these other bodies may take the lead in the investigation.

2.3 VALIDITY CHECKS AND CONFLICT MEDIATION BY THE OMBUDSPERSONS

- (1) In the event of a conflict or a suspected breach of rules, the ombudspersons can be contacted by any researcher of the MDC or cooperating institutions. The Board of Directors can also request the ombudspersons to investigate a suspected violation by conducting a validity check and gaining preliminary clarification.
- (2) In case of conflict, all employees have the right of choice to turn to the MDC ombudspersons, to the central ombudsperson of the Helmholtz Association or to the independent body “German Research Ombudsman”.
- (3) Ombudspersons gain information by consulting with all parties involved in a conflict. If the conflict concerns the collaborative working relationship within or between research groups and there is no allegation of a violation of the scientific code of conduct, the ombudspersons may attempt to mediate the matter themselves in order to settle the complaint amicably with the parties involved.
- (4) Ombudspersons are committed to neutrality. The investigation of allegations of research misconduct must be carried out in strict confidentiality and adhere to the presumption of innocence.
- (5) Ombudspersons make no authoritative judgement on the submitted complaints and disputed facts.
- (6) Ombudspersons take appropriate measures to protect both complainant and respondent. Their anonymity must be protected, as far as possible under the particular circumstances. The information disclosed by the complainant must be provided in good faith.
- (7) Should research misconduct not be proven, the complainant must continue to be protected, assuming that the allegations cannot be shown to have been made against better knowledge.
- (8) With the consent of the involved parties, the ombudspersons are authorized to appeal to the Board of Directors if they believe the conflict can be resolved by organizational measures or administrative decisions.
- (9) Mediation on the part of the ombudspersons may result in a declared change of behavior of the parties involved, or the correction of a manifest breach if it is only minor.
- (10) Regardless of any mediation efforts, the ombudspersons are obliged to take further action if they become aware of a suspected serious violation of the rules of good scientific practice.
- (11) The ombudspersons are responsible for assessing the validity of any suspected breach that is brought to their attention by conducting confidential consultations

with the person(s) accused or those in their surroundings and by inspecting the relevant documents. They must record in writing all information gained from these discussions, as well as their assessment of whether the suspicion is valid. The comments and presentation of facts provided by every interviewee are presented in separate annexes and submitted to them for possible clarification and confirmation.

- (12) If the ombudspersons consider the allegation or suspicion to be conclusive³ and of a serious nature, they must bring the matter, including the relevant documentation, to the attention of the Board of Directors, and request that an investigation committee be convened.

3 RULES OF PROCEDURE IN CASE OF SCIENTIFIC MISCONDUCT

3.1 GENERAL CONSIDERATIONS

- (1) The German Constitution guarantees freedom of science, research and academic teaching within the framework of the fundamental rights. This implies that activities in these fields are subject to self-organization by the scientific community and that interference by state authority is prohibited. The constitutional article adds, however, that executing this freedom does not exempt from obedience to the constitution in general and to the rule of law.

The investigation of scientific misconduct shall therefore take place through an internal scientific discourse within the freedom provided by constitutional law and may result in institutional measures. Possible legal steps under e.g. administrative law, labor law, civil service law, property law, commercial law or criminal law that may lead to general legal sanctions remain unaffected.

3.2 TYPES OF SCIENTIFIC MISCONDUCT

The specific nature of research at the MDC can involve several types of scientific misconduct. The violations listed below in paragraphs 1-5 can be considered as scientific misconduct, provided that there is an intentional or grossly negligent act:

- (1) Violation of the ethics rules and of the accepted methods of natural sciences
 - Unauthorized removal or destruction of samples, preparations and other products of research work

³ “Conclusive” means that the stand-alone facts – as they are presented and before closer inspection – would lead to a valid conclusion of scientific misconduct if proven to be correct.

- Data fabrication and invention of results
 - Falsification and manipulation of data, tables, figures and other results
 - Manipulation of statistical analyses or the results of imaging techniques
 - Suppression of data that contradicts the expected results
- (2) Violation of the rules of conduct in collegial scientific team work
- Intentional damage to the scientific reputation of an employee, including the intentional raising and/or dissemination of unfounded allegations
 - Deliberate obstruction or sabotage of the work of a team member or other scientist
 - Deliberate damage or destruction of the experimental designs, equipment, documents or computer files of one’s own research group or those of other research groups at the MDC and elsewhere
- (3) Violation of the standards of public communication and scientific publication
- Breach of the rules regarding the correct presentation and citation of one’s own publications or those of others
 - Theft of data and ideas (unauthorized publication or disclosure of the unpublished ideas or data of others)
 - Publication or other use/exploitation of a colleague’s research results and findings by superiors, supervisors or co-authors without proper consulting
 - Exploitation of third-party research ideas and methodological approaches that come to light in the course of confidential evaluations
 - Incorrect information in application letters or grant applications (including incorrect information on publications submitted or currently in print)
 - Plagiarism (the appropriation and public use of the published intellectual achievements, data, ideas, results, etc. of others without citing them correctly)
 - Self-plagiarism and the multiple publication of one’s own findings as “original publications”
 - Claiming the co-authorship of others without their consent
 - Violation of the correct listing of authors (especially with regard to the first and/or senior authors)
 - Claiming unjustified authorship (“honorary authorship”).
 - Unauthorized publication and unauthorized disclosure to third parties as long as the work, finding, or hypothesis has not been published.
 - Improper use of the MDC affiliation for work not performed at or connected to the MDC.
- (4) Scientific misconduct also results from
- co-authorship of a publication that contains false information as defined in (1) or unjustifiably appropriated third-party research achievements.
 - neglect of supervisory obligations if another person has committed scientific misconduct as defined in (1) and this would have been prevented or substantially impeded by necessary and reasonable supervision.
- (5) Scientific misconduct also results from the intentional participation (in the form of instigation or abetment) in the intentional misconduct of others.

3.3 PRELIMINARY INQUIRY BY THE OMBUDSPERSON(S) (SEE 2.3)

- (1) The ombudspersons are the first point of call for dealing with suspicions or reports of scientific misconduct. They first examine the plausibility and presumed severity of the allegation.
- (2) The preliminary examination shall take place immediately and in compliance with confidentiality and the fundamental principle of the presumption of innocence.
- (3) If the suspicion cannot be dispelled or if the conflict cannot be settled internally, formal investigative proceedings will be initiated.

3.4 FORMAL INVESTIGATION OF SUSPECTED SCIENTIFIC MISCONDUCT

3.4.1 AIM OF THE FORMAL INVESTIGATION OF SUSPECTED SCIENTIFIC MISCONDUCT

- (1) The aim of the investigation is to:
 - Carefully clarify the substance of the allegation, suspicion or conflict
 - Determine exactly what misconduct, if any, has taken place
 - Protect scientific achievements
 - Uphold the reputation of the MDC as a research institution
 - Protect the complainant from acts of retaliation and
 - Defend accused researchers against unfounded allegations
 - Propose measures or sanctions (see 3.5) to be implemented by the Directorate or the responsible university office (examination office, doctoral or habilitation committee)
- (2) Being involved in a case of suspected scientific misconduct can have significant personal consequences for those involved. The proceedings must therefore be strictly designed in accordance with the rule of law standards. This includes:
 - Treating all those involved with fairness and objectivity, Protecting complainants from acts of retaliation, Strictly respecting the presumption of innocence for the complainants and respondents until a manifest violation has been clearly established,
 - Treating the investigation confidentially in order to avoid any prejudgment of affected persons before the allegation has been clarified,
 - Hearing all parties involved on all allegations,
 - Allowing the accused persons to involve a trusted person as counsel at the hearing.

3.4.2 THE INVESTIGATION COMMITTEE

- (1) The formal investigation is conducted by an investigation committee, composed of scientists who do not serve on a governing body of the MDC.
- (2) Permanent members include a chairperson, three deputies, and a representative from the legal department as advisor. For each investigation, this core group may appoint two additional scientists with relevant expertise from different topic areas as advisors.

- (3) The chair of the investigation committee and one vice chair must not belong to the MDC. Two deputy chairs shall be MDC scientists. The chair and the deputy chairs shall be recommended by the Board of Directors, elected for a term of four years by the Scientific Council. Members can be re-elected. The non-permanent members called upon to help in individual cases shall be proposed by the chair and the deputies, and appointed by the Board of Directors.
- (4) The investigation committee may call in external experts working in the research field being investigated, as well as experts on the rules of good scientific practice as observers with an advisory role. Ombudspersons may be included as observers.
- (5) Members of the investigating committee as well as experts who are not MDC employees are bound to confidentiality in a separate written agreement.
- (6) The investigation committee may hear internal and external witnesses, and shall be granted access to all material documents and records of the MDC that are relevant to the allegations. All MDC employees are obliged to assist if necessary. The deputy chairs are responsible for coordinating the collection of evidence at the MDC.
- (7) If there is a suspicion of scientific misconduct, the MDC's Board of Directors convenes the investigation committee. The MDC covers the necessary material and travel expenses required for the proceedings.
- (8) The complainant can appeal directly to the investigation committee to initiate proceedings. In this case, the investigation committee shall decide whether it first insists on a preliminary inquiry and/or mediation by the ombudspersons, or whether it directly initiates its own investigation.
- (9) An appeal to the investigation committee must be made in writing with a brief description of the suspected breach. Relevant documents can be produced by copy. If specific individuals are being accused, the investigation committee can request that they submit a brief written statement in response to the allegations before the formal investigation begins.
- (10) The standing members of the investigation committee should accompany any proceedings in person. In the event that a deputy member or the representative from the legal department is prevented from attending, there are the following options:
 - a. A member prevented from attending may be represented by another member of the investigation committee for the respective individual case. For this purpose, a written power of attorney must be issued to the member authorized to represent another member and the chairperson must be informed.
 - b. The member unable to attend submits a written statement to the chairperson.
- (11) In the event of concern about bias or conflict of interest on the part of a member of the investigation committee, the member concerned may not accompany the proceedings.
- (12) If less than three voting members are present, the investigation committee does not have a quorum. In this case, the decision must be postponed.

3.4.3 THE INVESTIGATIVE PROCEEDINGS

- (1) After having examined the documents, the investigation committee shall notify the person(s) suspected of misconduct – hereinafter referred to as “respondent(s)” – of the incriminating facts and evidence and give them an opportunity to respond with a written statement. A period of 20 working days shall be granted for this step. Extension might be possible upon request to the investigation committee.
- (2) Once all statements have been received (or the deadline has passed), the investigation committee shall have a further 10 working days to decide on the next steps.
- (3) Further involvement of the investigation committee is only necessary if it is not possible or not advisable/appropriate to settle the breach through mediation on the part of the ombudspersons or through administrative measures implemented by the Board of Directors (i.e. change of workplace, change of supervisor, change of working conditions, changes in the employment contract). In the case of suspected serious scientific misconduct, the matter may not be settled solely by internal MDC measures and/or agreements.
- (4) If the complaint primarily involves conflicts between researchers or conduct related to the working practices at the MDC and if mediation by the ombudspersons is unsuccessful or has low probability of success, the investigation committee may recommend that the complaint be dealt with by the Board of Directors within the scope of its administrative authority.
- (5) If, on the other hand, the complaint fully or partially concerns the MDC’s rules of good scientific practice, the investigation committee, in consultation with the ombudspersons, shall examine whether the matter can be resolved by conducting discussions with the respondent(s) and agreeing upon internal remedial measures.
- (6) If the suspicion of a breach can be dispelled or if the suspicion is deemed to be insubstantial, the committee shall terminate the process and issue a written statement outlining its reasons for doing so to all parties concerned.
- (7) If misconduct is confirmed but deemed to be minor, the investigation committee may propose the necessary measures to remedy the situation.

3.4.4 DELIBERATIONS OF THE INVESTIGATION COMMITTEE

- (1) There are particular rules of procedure the investigation committee must follow when performing its duties. Confidential minutes shall be taken of all its meetings.
- (2) The investigation committee shall deliberate in oral proceedings that are not open to the public. It shall assess whether scientific misconduct has occurred in a free consideration of evidence (*freie Beweiserhebung*, i.e. not conditional to the strict judicial formalities of presentation and acceptance in court). The persons affected by the possible misconduct must be given an appropriate opportunity to state their case. On request, the respondents shall be granted an oral hearing; they may involve a trusted person as counsel. The latter also applies to others to be heard in the case.

- (3) The respondents and their representatives shall have no formal right to inspect the relevant files. The purpose of this is to avoid harm to the respondents or complainants and to maintain the confidentiality of personal background information.
- (4) The deliberations of the investigation committee as well as the justifications for its findings shall be confidential as a matter of principle. The identity of the complainants shall also remain confidential. However, it may become necessary in specific cases to disclose their identity and, if necessary, to hear them as a witness if the respondents cannot otherwise properly defend themselves, or if the credibility of the complainants is of great importance for determining the misconduct. The complainants shall be informed in advance if their identity is to be disclosed.

3.4.5 CONCLUSION OF THE INVESTIGATIVE PROCEEDINGS

- (1) If the investigation committee declares – by a majority of its four permanent members (the chair has the deciding vote in the event of a tie) – that grossly negligent or deliberate misconduct has been proven, it shall submit this finding to the Board of Directors as a report. This report takes the form of an assessment of the facts in accordance with the practices of scientific self-governance. It may be commented on by the MDC Board of Directors and must contain:
 - A description of the breach of the rules of good scientific practice
 - An assessment of the severity of the misconduct
 - Recommendations regarding corrective action to be taken or regarding appropriate measures in accordance with the practices of scientific self-governance
- (2) If scientific misconduct has been proven, the scientific organizations concerned must be informed.
- (3) In the event of serious misconduct, the investigation committee may recommend to the Board of Directors the initiation of administrative, disciplinary or employment law-related sanctions.
- (4) If no misconduct can be proven or if it is deemed that the respondents have been wrongly accused, proceedings shall be discontinued. This must be communicated in writing without delay to the respondents and to the complainants, as well as to all those with knowledge of the proceedings.
- (5) The documentation of the proceedings is kept by the Board of Directors.

3.4.6 RIGHT OF OBJECTION

- (1) There is no formal MDC-internal complaints procedure against the investigation committee's concluding report.
- (2) Complainants and respondents are free to contact the central ombudsperson of the Helmholtz Association, the Presidents of the Helmholtz Association, the German Research Foundation (DFG), or their respective university if they believe that formal or substantive errors have been made during the formal investigation.

3.5 SANCTIONS FOR SCIENTIFIC MISCONDUCT

3.5.1 MEASURES FROM THE SCIENTIFIC COMMUNITY

- (1) The Board of Directors is responsible for implementing the measures recommended by the investigation committee. It is bound by the recommendations of the Investigation Committee. It may seek advice on the findings of the investigation, including proposed measures or sanctions, from an internal committee. Measures may include:
- Disclosure, discussions and the implementation of remedial measures within the research group
 - Disclosure, discussions and the moderation or resolving of the matter within the MDC
 - Disclosure of serious scientific misconduct in the form of an expression of opinion to the scientific public (scientific organizations, funding organizations, professional associations, etc.)
 - Disclosure of serious scientific misconduct to the general public, if the case is deemed to be in the public interest – particularly if the interests of third parties have been damaged or threatened, or if damage could result from the use of falsified scientific information (e.g. from clinical studies)
 - Recommendation of the revocation of scientific publications resulting from falsified or manipulated research results. Here, a distinction must be made between the internal containment of findings not yet published, and the formal withdrawal (or in less serious cases, a public correction) of findings already published. The Board of Directors is authorized to demand such revocation of false findings from the authors concerned. If the respondent(s) refuse to comply with this request, the Board of Directors is obliged to submit the facts established by the investigation committee together with the recommendation of a revocation to the relevant scientific institutions (journals, publishers, etc.).
 - The Board of Directors can request academic consequences in the form of the revocation of academic degrees and authorizations to teach from the bodies that awarded them. In such cases, the committees involved in this matter must be informed of the evidence of serious scientific misconduct, insofar as the misconduct is related to the acquisition of an academic qualification.

3.5.2 GENERAL LEGAL SANCTIONS

- (1) If a scientist employed at the MDC is proven to have committed serious scientific misconduct, this may result in damage to the MDC and **employment law sanctions** may be imposed:
- Written warning (*Abmahnung*)
An official warning, issued in writing and included in the employee's personnel file, is a preliminary stage to dismissal and is therefore only a consideration in cases of moderate scientific misconduct. A second written warning can result in the termination of an employment contract.
 - Immediate dismissal (*außerordentliche Kündigung*)
Immediate dismissal is only a consideration if, given the circumstances of the specific case and in the interests of both contractual partners, the

employment relationship is no longer acceptable. The termination of the employment contract must occur within two weeks following the conclusion of the formal proceeding and from the moment when the party authorized to terminate the contract is informed of the facts relevant to the dismissal. Immediate dismissals resulting from other valid reasons remain unaffected.

– Regular termination of a contract (*ordentliche Kündigung*)

The regular termination of an employment contract, bound to the usual and legally specified period of notice, is rarely a consideration in the cases under discussion here, as such scientific misconduct is more likely to result in either immediate dismissal or the mutually-agreed termination of the employment contract.

– Contract termination (*einvernehmliche Auflösung des Vertrags*)

In addition to the termination of the employment relationship through immediate dismissal or regular notice, the possibility of ending the employment relationship through the mutually-agreed termination of the contract is also possible – taking into account the two-week period granted in the case of immediate dismissal.

(2) For researchers with whom the MDC has concluded a contract similar to that of a civil servant, the civil service law applicable to comparable university lecturer contracts applies. It is to be assumed that any serious scientific misconduct constitutes a reason for removal from office, in accordance with Berlin's Civil Service Law, and therefore justifies the immediate dismissal of the employee concerned. In such cases, the regular termination of a contract is not possible.

(3) **Criminal law consequences** are a consideration if there is a suspicion that the scientific misconduct also constitutes a criminal offense under the German Criminal Code or constitutes other criminal or administrative offenses. The Board of Directors has sole authority in deciding to involve the investigative authorities. Possible criminal offenses include:

- Offenses against public order (abuse of titles, etc.)
- Violation of privacy
- Offenses against life, against the person
- Theft and unlawful appropriation
- Forgery
- Criminal damage (to both material and virtual objects, e.g. computer files)
- Misappropriation, fraud and embezzlement
- Bribery and corruption
- Breach of obligation of secrecy
- Violation of copyright law

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