HZB Helmholtz Zentrum Berlin

HELMHOLTZ-ZENTRUM BERLIN FÜR MATERIALIEN UND ENERGIE GMBH

Rules of Good Scientific Practice

Enter into force on November 8th, 2021

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1 Preface

Die Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) brought the code "Guidelines for Safeguarding Good Research Practice" into effect on August 1, 2019. This represents the consensus of the members of the DFG on the fundamental principles and standards of good scientific practice and is supported by them. In close accordance with this code, the following guidelines have been established in a legally binding manner for the Helmholtz-Zentrum Berlin für Materialien und Energie GmbH (HZB) by the management in consultation with the Scientific and Technical Council (WTR) of the HZB. The code of the DFG has been adopted verbatim as far as possible and, where necessary, adapted to the specific circumstances of the HZB.

These guidelines offer all scientifically active employees of the HZB a reliable guideline to make good scientific practice a fixed and binding part of their research and scientific activities. The rules also apply in the case of activities of HZB employees in external committees and in other research institutions as well as for guests during their activities at HZB. The material scope of application extends to all scientific projects in which the HZB is involved through its employees.

2 Preamble

Scientific integrity forms the basis of trustworthy science. It is an expression of scientific self-obligation, which comprises respectful treatment of each other, study participants, animals, cultural assets and the environment, and strengthens and promotes society's indispensable trust in science.

The constitutionally guaranteed freedom of science is inseparably linked with a corresponding responsibility. It is the primary task of every scientist and researcher, as well as of the institutions in which science is organized, to take this responsibility fully into account and to use it as a guideline for their own actions.

Science itself ensures good scientific practice through honest thinking and action, not least through organizational and procedural regulations. Professional societies, journals, publishers, research funders, whistleblowers, ombudspersons and the independent "German Research Ombudsman" (German: “Ombudsman für die Wissenschaft”) committee set up by the DFG also play different roles in ensuring good scientific practice; they base their actions in research - both publicly funded and non-publicly funded - on the basic ideas of the Code. Thus, whistleblowers who report a justified suspicion of scientific misconduct fulfill an indispensable function for the self-control of science.

The local ombudspersons, the central ombudsperson of the Helmholtz Association (HGF) and the independent body "German Research Ombudsman" are trustworthy contact partners offering advice and conflict mediation in questions of good scientific practice and its possible violation through scientific dishonesty.

3 Standards of good scientific practice

3.1 Scope of application

The following guidelines summarize the key standards of good scientific practice and describe the procedure in the event of their non-compliance.

3.2 Principles

Guideline 1: Commitment to the general principles

The HZB defines the rules for good scientific practice with the participation of its scientifically active employees, makes them known to them and obliges them to comply with them - taking into account the special features of the relevant field. Each scientifically active employee is responsible for ensuring that his or her own conduct complies with the standards of good scientific practice.

Clarifications:

Good scientific practice requires openness and honesty towards the contributions of colleagues, collaborators, competitors and predecessors. The general principles, which are further elaborated in the following guidelines, include in particular,

- to work lege artis, to maintain strict honesty with regard to one's own and third parties' contributions, to consistently challenge all results oneself, and to allow and promote critical discourse in the scientific community.
- documenting all work steps, securely storing all records and electronic data, ensuring reproducibility prior to publication, and providing access to the records for authorized third parties.
- responsibility for authorships. The authors of a scientific publication are always jointly responsible for its content, unless individual contributions are explicitly named.

Guideline 2: Professional ethics

Scientific employees are responsible for implementing the fundamental values and standards of scientific work in their work and for standing up for them.

Teaching the fundamentals of good scientific work begins at the earliest possible stage in academic teaching and scientific training. Scientific staff at all career levels regularly update their knowledge of the standards of good scientific practice and the state of research.

Clarifications:

Experienced scientific staff and young scientists support each other in continuous learning and further training process and are in regular contact with each other.

Guideline 3: Organizational responsibility of the management of HZB

The HZB management creates the framework conditions for scientific work. It is responsible for compliance with and communication of good scientific practice as well as for appropriate career support of all employees. It guarantees the preconditions for the scientific staff to comply with legal and ethical standards. At HZB, there are defined procedures and principles for personnel selection and development as well as for the promotion of young scientists and equal opportunities.

Clarifications:

The management of HZB is responsible for 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 appropriately communicated to the respective members and staff.

Gender equality and diversity are taken into account in the selection and development of personnel. The corresponding processes are transparent and avoid, as far as possible, unwitting influences ("unconscious bias").

Suitable support structures and concepts have been established for young scientists. Career advice and further career paths as well as further training opportunities are offered for scientific and scientific-accessory personnel.

Guideline 4: Responsibility of the management of organizational units

The heads of the scientific organizational units (OU) are responsible for the management, supervision, conflict resolution and quality assurance of the scientific work at HZB. They are responsible for the entire unit. The interaction in scientific OUs is such 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 duties.

The management task also includes, in particular, ensuring appropriate individual supervision of young scientists - embedded in the overall concept of the HZB - as well as career support for scientific and science-accessory personnel. In order to prevent abuse of power and the exploitation of dependencies to the greatest possible extent, HZB has created suitable organizational structures.

Clarifications:

The OU heads assure that

- the objectives of the research work and the tasks of the individual researcher are defined,
- each employee's responsibilities are clearly assigned, and
- regular checks are carried out to ensure that targets are being met.

In the case of projects, the project leader assumes these tasks.

Scientifically active employees who cooperate in inter-center projects are subject to the rules of good scientific practice, even if the responsible project leader is not employed at HZB.

Scientifically active employees enjoy a relationship of support and personal responsibility appropriate to their career level. They have an adequate status with corresponding rights of participation. Increasing independence enables them to shape their careers.

Young scientists are entitled to appropriate support and training. This includes in particular

- the teaching of good scientific practice,
- special professional support for scientific work, and
- the appropriate material equipment of the working environment.

Guideline 5: Performance dimensions and evaluation criteria

A multidimensional approach is required to evaluate the performance of scientific employees:

In addition to scientific performance, other aspects can be taken into account. The evaluation of performance primarily follows qualitative standards, whereby quantitative indicators can only be included in the overall evaluation in a differentiated and reflected manner. In addition to the categories of the General Equal Treatment Act, individual characteristics in curricula vitae are also taken into account in the assessment, insofar as they are freely stated.

Clarifications:

High-quality science is oriented to discipline-specific criteria. In addition to the generation of knowledge and its critical reflection, other performance dimensions are also included in the assessment. These are, for example: a commitment to the operation and further development of infrastructures for internal and external users, as well as user support, teaching, public relations, knowledge and technology transfer, participation in committees of the HZB, the Helmholtz Association and other institutions; contributions in the overall interest of society can also be honored. The scientific attitude of the scientifically active employees, such as openness to knowledge and willingness to take risks, is also taken into account. Appropriate consideration will be given to periods of absence due to personal, family or health reasons, or resulting longer periods of training or qualification, alternative career paths or comparable circumstances.

Guideline 6: Ombudspersons

The WTR collects proposals from the HZB for ombudsperson candidates, evaluates them carefully and selects four individuals who are suggested to the management for appointment.

The management nominates them and takes sufficient care that the ombudspersons are known at the HZB. In case of bias, the ombudspersons represent each other.

Clarifications:

Ombudspersons are selected from among employees with scientific integrity and management experience. The ombudspersons may not be a member of the management of the HZB during the exercise of this office. The term of office of ombudspersons is limited to three years. A single re-election is possible.

They advise as neutral and qualified contact persons in questions of good scientific practice and in suspected cases of scientific misconduct and contribute, as far as possible, to solution-oriented conflict mediation. The ombudspersons receive the inquiries while maintaining confidentiality and, if necessary, initiate a procedure as described in Guideline 20.

The ombudspersons receive the necessary support and acceptance from the HZB in the performance of their duties. In order to increase the functionality of the ombudsman system, the HZB makes it possible to relieve the ombudspersons in other ways.

The HZB grants its employees the right to turn to the ombudsperson of the HZB, to the central ombudsperson of the HGF or to the supra-regionally active committee "German Research Ombudsman". The "German Research Ombudsman" is an independent body that is available for advice and support in questions of good scientific practice and its violation through scientific dishonesty.

3.3 Research process

Guideline 7: Quality assurance across phases

The scientific staff carries out each step in the research process in a lege artis manner. 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 applied quality assurance mechanisms are always explained. This applies in particular when new methods are developed.

Clarifications:

Continuous, research-related quality assurance 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 to the keeping of laboratory records.

If scientific employees have made findings publicly available and subsequently become aware of discrepancies or errors, they correct them. If the discrepancies or errors are the reason for the retraction of a publication, the scientifically active staff members shall contact the relevant publisher or infrastructure provider, etc. as quickly as possible to ensure that the correction or retraction is made and marked accordingly. The same applies if such discrepancies or errors are brought to the attention of the research staff by third parties.

The origin of data, organisms, materials and software used in the research process is identified and the subsequent use is documented; the original sources are cited. The nature and extent of research data generated in the research process are described. The handling of such data is designed in accordance with the requirements of the subject concerned.

The source code of publicly accessible software must be persistent, citable and documented. The fact that results or findings can be replicated or verified by other scientific staff (for example, by means of a detailed description of materials and methods) is - depending on the subject area concerned - an essential component of quality assurance.

Guideline 8: Actors, responsibilities and roles

The roles and responsibilities of the scientific staff involved in a research project as well as of the science-accessory staff must be clear and agreed upon with the responsible OU management at all times during a research project.

Clarifications:

The participants in a research project are in regular contact with each other. They define their roles and responsibilities in an appropriate manner and adjust them if necessary. An adjustment is particularly indicated if the focus of the work of one of the participants in the research project changes.

Guideline 9: Research design

When planning a project, scientifically active employees take the current state of research into account comprehensively and acknowledge it. The identification of relevant and suitable research questions requires a careful search for research achievements that have already been made publicly available. HZB ensures the necessary framework conditions for this. Aspects of sustainability and of unnecessary use of resources are to be taken into account in research planning.

Clarifications:

Methods to avoid (unconscious) bias in the interpretation of findings, e.g. blinding of test series or reference measurements, are applied as far as possible. Scientific staff check whether and, if so, to what extent gender and diversity can be significant for the research project (with regard to the methods, the work program, the objectives, etc). When interpreting findings, the respective framework conditions are taken into account.

Guideline 10: Legal and ethical framework, rights of use

Scientifically active employees handle the constitutionally granted freedom of research responsibly. 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 consents and ethics opinions. With regard to research projects, a thorough assessment of the research consequences and evaluation of the respective ethical aspects should be carried out. The legal framework of a research project also includes documented agreements on the rights of use of the research data and research results arising from it.

Clarifications:

Scientifically active employees are continuously aware of the risk 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 the aspects associated with safety-relevant research (dual use). HZB is responsible for ensuring that the actions of its scientifically active employees conform to the rules and promotes this through suitable organizational structures. It develops binding principles for research ethics and procedures for the corresponding assessment of research projects.

If possible and reasonable, scientifically active employees shall enter into documented agreements on the rights of use at the earliest possible point in the research project. Documented agreements are particularly useful if several academic and/or non-academic institutions are involved in a research project or if it is foreseeable that an academic employee will change research institutions and would like to continue using the data generated by him/her for (his/her own) research purposes. In the context of an ongoing research project, the authorized users may grant third parties access to the data (in particular in accordance with data protection regulations).

Further details are regulated in another HZB document on the handling of scientific data.

Guideline 11: Methods and standards

To answer research questions, scientific staff apply scientifically sound and comprehensible methods. When developing and applying new methods, they attach particular importance to quality assurance and the establishment of standards.

Clarifications:

As a rule, the application of a method requires specific competencies, which may be covered by correspondingly close collaborations. The establishment of standards for methods, the application 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 document all information relevant to the occurrence of a research result as comprehensibly as is necessary and appropriate in the subject area concerned in order to be able to check and evaluate the result.

In principle, they therefore also document individual results that do not support the research hypothesis. A selection of results must be avoided in this context. If concrete professional recommendations exist for the review and evaluation, the scientifically active employees carry out the documentation according to the respective requirements. If the documentation does not meet these requirements, the restrictions and the reasons for them are explained in a comprehensible manner. Documentation and research results must not be manipulated; they must be protected against manipulation as best as possible.

Clarifications:

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

Guideline 13: Establishing public access to research results

As a matter of principle, scientific staff contribute all results to the scientific discourse. In individual cases, however, there may be reasons not to make results publicly available (in the narrower sense in the form of publications, but also in the broader sense via other communication channels); this decision may not depend on third parties. Industrial cooperations are subject to cooperation agreements. Scientists are responsible for deciding whether, how and where to make their results publicly available, taking into account the customs of the discipline concerned. Once a decision has been made to make results publicly available, scientific employees describe them completely and comprehensibly. This also includes, as far as possible and reasonable, making available the research data, materials and information on which the results are based, the methods applied and the software used, and providing a comprehensive description of the work processes. Self-programmed software will be made publicly available, including the source code.

Scientifically active employees must provide complete and correct evidence of their own and others' preliminary work.

Selected scientific research results should be made available not only to a scientific audience, but also to the general public. In doing so, the rules of good scientific practice are to be observed in the same way as for scientific publications. This also applies to communication via social media.

Clarifications:

For reasons of traceability, connectivity of research, and reusability, whenever possible, scientific collaborators deposit the research data and materials of central importance on which the publication is based - following the FAIR principles ("Findable, Accessible, Interoperable, Re-Usable") - accessible in recognized archives and repositories. Further requirements of the funding bodies for the respective project funding are taken into account. Restrictions may arise in the context of patent applications with regard to public accessibility. If research software developed in-house is to be made available to third parties, it will be provided with an appropriate license.

In keeping with the idea of "quality before quantity", scientific staff avoid publishing an unreasonably small number of publications. They limit the repetition of the contents of their publications as authors to the extent necessary for the understanding of the context; the citation of results that have already been made publicly available is to be preferred.

Guideline 14: Authorship

An author is a person who has made a genuine, traceable 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 share responsibility for the publication, unless explicitly stated otherwise.

Authors take care and, as far as possible, work towards ensuring that their research contributions are marked by the publishers or infrastructure providers in such a way that they can be correctly cited by users.

Each author is responsible for submitting the publication to his/her OU management prior to publication.

Clarifications:

The contribution of each author must be made to the scientific content of the publication. When a contribution is genuine and comprehensible, it must be examined separately in each individual case and depends on the subject area concerned. A comprehensible, genuine contribution exists in particular if a scientifically active employee has contributed in a scientifically relevant way to

- the development and design of the research project or
- the development, collection, acquisition, provision of the data, software, sources, or
- the analysis/evaluation or interpretation of the data, sources and the conclusions drawn therefrom, or
- substantial generation of the manuscript.

If a contribution is not sufficient to justify authorship, such support may be appropriately acknowledged in footnotes, in the preface, or in the acknowledgments. An honorary authorship in which no such contribution has been made is not permissible. A leadership function does not in itself justify co-authorship.

Scientifically active employees agree at the earliest possible time on who is to become the author of the research results. The agreement on the order of authors is reached in good time, as a rule at the latest when the manuscript is being formulated, on the basis of comprehensible criteria taking into account the conventions of each discipline. Without sufficient reason, the required consent to publication of results may not be withheld. Refusals to publish must be justified by verifiable criticism of data, methods or results. In the event of suspected obstructive refusal of consent, the co-authors may contact one of the ombudspersons. The ombudsperson will examine the objections. In case of publication, the publication permission must be disclosed by the ombudsperson.

Guideline 15: Publication body

Authors choose the publication medium carefully, taking into account its quality and visibility in the respective field of discourse. The scientific quality of a contribution does not depend on the publication medium in which it is made publicly available. Publication in so-called predictive journals and similar publication organs should be avoided. Scientific staff members who assume the function of editors should carefully consider the publication organs for which they assume this task.

Clarifications:

In addition to the standard publications in books and journals, also specialist repositories, data and software repositories, and blogs, in particular, are taken into consideration. A new or unknown publication is checked for its seriousness. An essential criterion for the selection decision is whether the publication body has established its own guidelines for good scientific practice.

Guideline 16: Confidentiality and neutrality in peer review and consultation

Honest conduct is the basis of the legitimacy of a judgment process. Scientifically active employees who, in particular, assess submitted manuscripts, funding applications or the expulsion of persons, are obliged to maintain strict confidentiality in this respect. They shall disclose all facts that could give rise to concerns of bias. The obligation to maintain confidentiality and to disclose facts that could give rise to concerns of bias also applies to members of scientific advisory and decision-making bodies.

Clarifications:

The confidentiality of third-party content to which the reviewer or committee member has access precludes disclosure to third parties or use by the reviewer or committee member. Scientifically active employees shall immediately report, to the responsible office, any conflicts of interest or biases that could be justified with regard to the research project being reviewed or the person or subject of the consultation.

Guideline 17: Archiving

Research staff members shall adequately safeguard research data or research results that have been made publicly accessible, as well as the underlying central materials and, if applicable, the research software used, in accordance with the standards of the discipline concerned, and shall retain them for a period of at least 10 years. In the event that there are comprehensible reasons for not retaining certain data, the scientifically active employees shall present these reasons. HZB ensures that the necessary infrastructure is in place to enable archiving.

Clarifications:

When scientific findings are made publicly available, the underlying research data (usually raw data and associated metadata) are kept accessible and traceable for a period of ten years at HZB or at the institution where they originated, or in multi-site repositories. The retention period begins with the date of public access.

In addition, the further regulations of the HZB must be observed.

4 Non-compliance with good scientific practice, procedures

Guideline 18: Definition of scientific misconduct

Scientific misconduct occurs when false information is deliberately or grossly negligently provided in a scientific context, the intellectual property of others is infringed, or their research activities are impaired.

***Clarifications*:**

Scientific misconduct occurs particularly in the event of:

a) False declarations

- Fabrication and/or falsification of data,
- Deletion of primary data,
- Manipulation of representations,
- False declarations involving advertisements, proposal applications, publications, etc.

b) Infringement of intellectual property of others through

- unauthorized exploitation under presumption of authorship (plagiarism),
- the presumption or unfounded assumption of scientific authorship, acceptance of honorary authorship,
- Exploitation of others' unpublished scientific ideas or research approaches (theft of ideas), especially as a reviewer,
- Publishing or making available data without the consent of the authorized person(s),
- claiming the authorship of another without the latter's consent.

c) Interference with the research activities of others by

- deliberate damage, destruction or manipulation of scientific test arrangements, data or software,
- the deliberately false or misleading expert evaluation of
- research activity,
- the preparation of favorable expert opinions,
- deliberate or grossly negligent damage to scientific reputation

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- deliberate or grossly negligent damage to scientific reputation.

Joint responsibility in cases of scientific misconduct may result, among other things, from

- active participation in the misconduct of others,
- contributing knowledge of falsification by others,
- co-authorship of publications containing falsification, or
- gross neglect of the duty of supervision.

Guideline 19: Whistleblowers and those affected by allegations

The responsible bodies at HZB (usually ombudspersons, management and investigation commissions), which investigate a suspicion of scientific misconduct, are committed to protecting both the whistleblower and the person affected by the allegations in an appropriate manner. The investigation of allegations of scientific misconduct shall be conducted expressly with due regard for confidentiality and the fundamental principle of the presumption of innocence. The whistleblower's report must be made in good faith. Deliberately false or wanton allegations may themselves constitute scientific misconduct. Neither the whistleblower nor the person affected by the allegations should suffer any disadvantages for his/her own scientific or professional advancement as a result of the report.

Clarifications:

If possible, the notification should not lead to delays during the qualification of the whistleblower, especially in the case of young scientists. The preparation of theses and dissertations should not be disadvantaged; this also applies to working conditions and possible contract extensions.

The investigating body shall take into account the basic principle of presumption of innocence vis-à-vis the person concerned at every stage of the proceedings within the framework of a case-by-case consideration. As a matter of principle, the person affected by the allegations should not suffer any unreasonable disadvantages from the examination of the suspicion 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 cannot verify the facts him- or herself, or if there is uncertainty in the interpretation of the guidelines for good scientific practice with regard to an observed event, the whistleblower should contact a local ombudsperson, the central ombudsperson of the HGF or the committee "German Research Ombudsman" to clarify the suspicion.

The HZB also evaluates reports where the whistleblower does not give his or her name (anonymous report). However, an anonymous report can only be reviewed in a procedure if the whistleblower presents sufficiently concrete and verifiable facts to the office investigating the suspicion. If the whistleblower is known by name, the investigating body shall treat the name confidentially and shall not disclose it to third parties without appropriate consent. Exceptions are granted only if there is a legal obligation to do so or if the person affected by the allegations cannot otherwise defend him/herself properly, because the identity of the whistleblower is exceptionally important for this. Before the name of the whistleblower is disclosed, he/she will be informed thereof immediately; the whistleblower can then decide whether or not to withdraw the complaint - if the name is likely to be disclosed. The confidentiality of the proceedings is restricted if the whistleblower makes the suspicion public. The investigating agency decides on a case-by-case basis how to deal with a breach of confidentiality by the whistleblower.

The whistleblower must also be protected in the case of unproven scientific misconduct, unless it can be proven that the report of the allegations was made against one's better knowledge.

Guideline 20: Procedures in cases of suspected scientific misconduct

It is part of scientific ethics not to silently tolerate scientific misconduct by others. If misconduct is suspected, the originator should be contacted and clarification, if applicable, should be sought. In the following, a procedure is defined for the case whereby a suspicion or accusation of scientific misconduct cannot be clarified in a direct conversation. A start of the procedure as soon as possible and a speedy execution is to be ensured. The person affected by the allegations as well as the whistleblower shall be given the opportunity to make a statement in each phase of the procedure.

Clarifications:

a) If an employee of the HZB has decided to submit a suspicious activity report, an ombudsperson should be contacted as a contact person. This can be an ombudsperson at HZB. The ombudspersons of the respective scientifically involved institutions as well as the independent committee "German Research Ombudsman" or the central ombudsperson of the HGF are also available as contact persons.

b) The ombudsperson shall take such steps as he or she deems appropriate to clarify the facts in a timely manner. She is to be supported in this by the heads of the OU or the heads of the working groups.

c) If the suspicions prove to be well-founded or if the ombudsperson is unable to clarify the facts or reach an agreement among the parties involved, the ombudsperson shall inform the management. The latter shall decide on the further course of action.

d) In the event that further clarification of the facts is necessary, the management may appoint an investigative commission. The commission shall be chaired by an independent

person. This person should not be a member of the Helmholtz Association. Furthermore, the commission should include a representative of the management, at least one representative of the responsible HZB department and at least one other independent person who supports the commission with his or her professional expertise. A deputy is appointed for each member of the commission. The commission can call in the ombudspersons for consultation.

e) Any bias on the part of a member of the committee of inquiry may be asserted at any time by the member him/herself, by the person concerned or by other parties involved. In the event of bias, the member shall be excluded from the proceedings; the committee of inquiry shall decide on this.

f) The Investigation Committee shall deliberate in closed oral proceedings. The person providing the information shall be given the opportunity to comment. The person concerned may inspect all documents and request information at any time. The protection of the person providing the information is to be ensured at all times by means of suitable measures, e.g. blackening out of text passages. The person concerned must be given the opportunity to make a statement at every stage of the proceedings; he/she may call in a person of his/her confidence as an advisor. The hearing of further persons is permissible.

g) The investigating committee shall examine in free assessment of evidence whether scientific misconduct has occurred. The investigating committee shall submit a written final report to management. Management shall draw the necessary conclusions from this.

h) If a member of the management is affected by suspicion of misconduct, the chairperson of the Scientific Advisory Board shall be informed instead of the management, who shall involve the chairperson and the deputy chairperson of the Supervisory Board if necessary.

Guideline 21: Consequences of scientific misconduct

If scientific misconduct is to be regarded as proven, the management or the chairperson of the Supervisory Board shall decide on the necessity of further measures after due consideration.

Clarifications:

Depending on the circumstances of the individual case and in particular the seriousness of the misconduct found, sanctions from a wide variety of fields of law are possible, if necessary also cumulatively, for example:

- revocation of scientific publications
- academic consequences, such as the withdrawal of an academic degree by the institutions responsible for this, which are included in the proceedings,
- information of the public / cooperation partners
- consequences under labor law, such as warning, dismissal or termination of contract

- consequences under civil law such as ban from the premises, claims for restitution or damages (scholarships, third-party funds)
- consequences under criminal law

The results of the proceedings are communicated to the institutions concerned and, if necessary, to third parties with a justified interest in the outcome of the proceedings.

5 Implementation of the guidelines

These rules enter into force on November 8, 2021 after being taken note of by the Supervisory Board and replace the rules for good scientific practice of the HZB dated January 25, 2016.

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