HZI HELMHOLTZ Centre for Infection Research

Guidelines to ensure good scientific practice

Helmholtz Centre for Infection Research (HZI)

Implementation of the DFG Code of GWP of August 1st, 2019.

Version of 16.03.2022, replaces the previous guideline "Regulations for safeguarding good scientific practice at the HZI and procedures in cases of scientific misconduct" of 1st June 2018.

1 Preamble

Science depends on the principle of reproducible research and discovery to produce well-founded, organised and secure knowledge. Accordingly, the Helmholtz Centre for Infection Research (HZI) considers it a core task to ensure good scientific practice through appropriate guidelines and organisational frameworks. In this context, the HZI management, with the participation of its scientific advisory bodies, has implemented the "Guidelines for Ensuring Good Scientific Practice", which were put into effect by the DFG on August 1, 2019, and undertakes to comply with them. All HZI scientists will be informed about the guidelines upon joining the institute. HZI scientists[1] are obliged to adhere to them. Each scientist is responsible for ensuring that his or her own conduct complies with these standards of good scientific practice.

2 Subject matter and aims

These guidelines form the legal basis for ensuring good scientific practice at HZI, to which all employees are committed. The listed definitions and processes provide the framework for ensuring a trustworthy and reliable scientific conduct of all scientific staff. The HZI offers mandatory training and sets the guidelines for good scientific practice for all employees.

These guidelines define the central legal and ethical standards of good scientific practice and explain the procedure to be followed in case of non-compliance. The central role of the ombudsperson group is acknowledged. The framework conditions set by the HZI for scientific work as well as compliance with and communication of good scientific practice are also listed in these guidelines.

3 Research process and framework conditions

HZI is committed to the responsible conduct of scientists[1] within the framework of scientific autonomy and freedom of research. Every step in the research process is carried out according to established norms. This includes appropriate steps for ensuring good scientific practice, quality assurance and documentation.

At HZI, particular attention is drawn to compliance with the following points and rules *lege artis*[2]:

Research design

- Scientists should take into account rights and obligations arising from legal requirements as well as from contracts with third parties when identifying, planning and conducting a new research project, together with previous research results already achieved in the field. The identification of relevant and appropriate research questions requires careful investigation of previously published research. HZI provides the necessary framework for the planning of the proposed research and the identification of the current state-of-the-art of the research field (see section Framework). Methods

[1] By “scientists” is meant all employees working in science, i.e., also students with guest status, doctoral students, postdocs and guests

[2] i.e., conforming to standard scientific norms.

to avoid (unconscious) bias in the interpretation of findings, for example blinding of experimental studies, are to be employed wherever possible. Researchers should assess whether and, if so, to what extent gender and diversity may be significant for the research project (with regard to methods, work programme, objectives, etc.).

- Responsibilities and roles in a research project will be clearly defined, agreed upon, and documented together with all participants at the outset. If necessary, their roles and responsibilities may be adjusted during the course of the research project and any such adjustment documented accordingly.
- Agreements on rights of use[3] or rights of re-use[4] of the research data and/or research results will be made as soon as possible and carefully documented in a clear and transparent manner. HZI's external technology transfer partner, Ascenion GmbH, advises HZI staff in this regard. The scientific staff shall also regularly participate in online training courses.[5]
- Regulatory approvals and ethics votes required for research projects shall be obtained prior to the start of any research undertaken. HZI scientists are to be supported in this by experts at the Centre.

Research methods and documentation

- All research projects should be supported by scientifically sound methods and procedures. All methods used and data generated in the research process are to be documented in a comprehensible, verifiable and appraisable manner.[6] The specifics are regulated in the HZI research data guidelines[7] and in the regulations on the keeping of lab books at HZI.[8] Scientists are to provide complete and correct evidence of their own and others' preliminary work.
- As a core principle of good scientific practice, HZI is committed to the “FAIR principles” (Findable, Accessible, Interoperable, Reusable) when handling research data, results, software and images. In addition to the FAIR criteria for digital research data, persistent identifiers (PIDs), such as the DOI or the ORCID ID[9] for the unique identification of research results and researchers are helpful tools in quality control.
- Documentation and research results or the archiving of data should be protected as best as possible against manipulation and unauthorized access, including externally. HZI ensures that the necessary infrastructure is in place to enable archiving for an appropriate period of time.[10] If scientific findings are to be made publicly available, the

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3 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 a scientist will change research institutions and would like to continue using any data generated by him/her for (his/her own) research purposes.

4 To enable the free re-use of scientific products, HZI members are recommended to use standardized, free licenses, e.g., Creative Commons - ideally, the freest CC license cc-by 4.0. The HZI and Helmholtz Association guidelines should be observed (see Helmholtz Open Access Guideline, HZI Research Data Guideline, and Model Guideline for Sustainable Research Software at the Helmholtz Centres).

5 e.g., HZI internal UWEB course "Patents, Inventions and Innovations: HZI Technology Transfer Training"

6 e.g., via data management plan/DMP.

7 HZI Research Data Guidelines and the institutional HZI Repository.

8 HZI Lab Book Regulation, "Regulation on the Maintenance of Lab Books at the HZI".

9 https://orcid.org - The HZI supports the use of the ORCID ID through membership in the ORCID DE consortium and the implementation of ORCIDs in its own systems (e.g., the HZI Repository).

10 The HZI provides the infrastructure required for archiving via decentralized server facilities, the management of laboratory books (print and digital), external research data repositories such as RADAR and the institutional HZI Repository

underlying research findings (usually primary data and data documentation) - depending on the respective field - are usually kept accessible and traceable for a period of ten years at least on the HZI campus or the particular location of the institute, i.e., the facility where they originated, or additionally in cross-site repositories. According to the GenTG, S3 research data and their S3 lab books must be kept for 30 years after the end of the project, regardless of their publication. In well-founded cases, shortened retention periods may be appropriate; any corresponding justifications are to be clearly described. The retention period begins with the date of granting public access.

- The HZI Library regulates lab book issue, administration and archiving of hardcopy, as well as advising on the use of an Electronic Lab Notebook system (ELN system).[11] Research data can be made accessible via suitable subject repositories or via general repositories, such as RADAR, Zenodo or GitHub. Files to be archived must be submitted to the computing centre and documented in the corresponding lab notebook or ELN system according to the rules in place at the HZI. Alternatively, special storage locations for archiving can be agreed upon as long as they are documented in the lab book or ELN system in accordance with the lab book rules.
- For the identification of suitable research data repositories, insofar as they are not already known and specified, the use of the "Registry of Research Data Repositories (re3data[12]) is recommended. The research data repository RADAR[13] licensed by the HZI, offers the possibility to securely deposit data for the review process with restricted access, to permanently archive data or to publish data with a DOI.
- The HZI repository[14] is suitable for the quality-assured dissemination of research results (publications). Publications should, if they do not appear in Gold Open Access, be posted here as a second publication in Green Open Access.[15]
- When establishing new methods, approaches and standards during the research project, scientists are to pay particular attention to quality assurance and traceability and ensure comprehensive documentation. In this context, replication is a component of quality assurance. All individual results obtained are to be documented, including those that do not support the working hypothesis (negative results). Selective analysis of results has to be avoided in this context. If there are concrete professional recommendations for the review and evaluation, the scientists carry out the documentation according to the respective requirements (e.g., HZI lab book regulations). If the documentation does not meet these requirements, the restrictions and the reasons for them are to be explained in a clear manner.

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11 HZI Laboratory Book Control: the ELN system offered by the HZI is secured against manipulation by time stamp and rights/access management. If other ELN systems are introduced, the computer centre and the HZI library must be consulted.

12 https://www.re3data.org

13 https://www.radar-service.eu (licensed by the HZI or the HZI library)

14 https://repository.helmholtz-hzi.de

15 The HZI library advises working groups on options and possible embargo periods to be discontinued. https://helmholtz-hzi.bibliotheca-open.de/Journals/OpenAccess

Publications and authorship

- As a matter of principle, all research results should be published in a permanently accessible and reusable form in the interest of scientific discourse.[16] In particular, this includes the underlying research data, information about any materials, equipment, methods and software used. Autonomous software should be made publicly available by disclosing the source code (FAIR principle "reusable"[17]). Restrictions may arise in the context of patent applications with regard to public accessibility. If specially developed research software is to be made available to third parties, it should be provided with an appropriate license.
- In special cases, there may be restrictions on public access; this relates to compliance with personal rights, security aspects, contracts with third parties, and patent applications. Withholding of research results may also occur in research projects with potential dual use. The Commission for Ethics in Research (KEF) of the HZI advises on the ethically sound handling of these data:[18]
- In general, scientists involved in the research project decide on their own responsibility and under the framework conditions specific to the research area whether, when, how and where the results are published; this decision must not depend on third parties. In this context, inappropriate repeated smaller publications of a larger research project should be avoided.[19]
- In keeping with the idea of "quality before quantity", scientists should avoid unreasonably small publications. They should limit repetition of the contents of any publications as (co-)authors to the extent necessary for explaining their background. They should cite results that have already been made publicly available, unless the discipline-specific norms allow this to be waived in exceptional cases. The origins of data, organisms, materials and software used in the research process are to be disclosed and any subsequent use documented; original sources are to be cited.
- Once a decision has been made to make results publicly available, scientists should describe them fully and clearly. 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. Autonomous software will be made publicly available along with the source code.
- An author is a person who has made a verifiable, scientifically recognizable, genuine contribution to the contents of the publication, where this depends on the subject area concerned. If a contribution is not sufficient to justify authorship, this support should be appropriately acknowledged in footnotes, the preface, or the acknowledgement.
- Honorary authorship where no such contribution has been made is not deemed permissible. A managerial or supervisory position does not, in itself, justify co-authorship.

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[16] The HZI is committed to complying with the Helmholtz Association's Open Access Policy. In addition, the regulations listed in the HZI Research Data Guidelines apply.

[17] When using research software, the HZI is committed to the guidelines of the Helmholtz Association on sustainable research software (Model Guideline on Sustainable Research Software at the Helmholtz Centres).

[18] Statutes of the Commission on Ethics in Research of HZI

[19] HZI Publication Guidelines

- A verifiable, authentic contribution is deemed to exist, in particular where a scientist has participated in a scientifically relevant way in: (1) the development and conception of the research project; or (2) the development, collection, procurement, and provision of data, software, and sources; or (3) the analysis/evaluation or interpretation of the data, sources and in the conclusions drawn from these; or (4) in the writing of the manuscript.
- Before writing the publication, the parties involved should agree on a prospective list of authors, especially with regard to first and last authorships.[20]
- Scientists must consent to authorship. Timely agreement on author sequence should be reached, at the latest when the manuscript is drafted, based on intelligible criteria, according to the conventions of each discipline. Necessary consent to publication may not be withheld without due reason. Denial of consent requires verifiable criticism of data, methods, or results.
- All authors are responsible for the publication and agreeing to the final version before submission.[21]
- A publication outlet should be selected by contributors with regard to its visibility[22] and quality[23] in the respective research field and taking into account the free subsequent usefulness of the publication. The scientific quality of a contribution does not depend on the publication medium in which it is made available.[24] In addition to publications in books and journals, specialist repositories, data and software repositories, as well as blogs are also to be considered. A new or unknown publication outlet should be evaluated with regard to its trustworthiness. The HZI library provides support in this process. An essential criterion for the selection decision is whether the publication outlet has established its own guidelines for good scientific practice. If discrepancies or errors become apparent after publication, these are to be amended and, if necessary, a correction or retraction is be requested from the respective publisher/provider.[25]
- Authors are obliged to index their published research contributions in such a way that they can be cited correctly and that any previous work by others has been fully acknowledged.

Confidentiality and neutrality in assessments and consultations

- Honest conduct underpins the legitimacy of the peer review process.
- Those who, in particular, review submitted manuscripts, grant applications, dismiss individuals are obliged to maintain strict confidentiality in this regard. They must fully

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20 When publishing research results, it is recommended to represent the roles within the publication, e.g., via CRediT/Contributor Roles Taxonomy.

21 Without sufficient reason, the required consent to the publication of results may not be withheld.

22 Visibility means accessibility/searchability, i.e., the publication outlet should be indexed in Pubmed or Scopus so that publications therein can be readily retrieved via search engines or databases.

23 To ensure publishing in high quality publication outlets and to detect predatory journals and conferences in time, the publishing workflow at the HZI has been optimized and corresponding information pages "Avoid Predatory Publishers" (Intranet) and "Your Publishing Procedure" (https://helmholtz-hzi.bibliotheca-open.de/Journals/OpenAccess/Your-OpenAccess-Publishing-approach) have been created and the advisory service of the HZI library has been expanded.

24 It should be noted, however, that the integrity/credibility of research might be questioned if research is published in a predatory journal or if publications are cited by predatory journals.

25 Predatory publishers/journals often ignore requests for retraction/corrigendum or demand an additional "retraction fee". In such cases, the legal department should be contacted.

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

- The confidentiality of third-party content to which the reviewer or committee member gains access precludes disclosure to third parties and personal use. Scientists should immediately report any conflicts of interest or biases that could be warranted with regard to the research project being reviewed or the person or subject of the consultation to the responsible office.

Boundary conditions of good scientific practice

- Personnel selection at the HZI follows clearly defined rules with special attention to equality, inclusion and diversity.[26]
- Teaching the basics of good science starts at the earliest possible stage in academic teaching and scientific training. Scientists at all career levels regularly update their state of knowledge on standards of good scientific practice and the current state of research. At HZI this is achieved through appropriate training, online formats, and clear task assignments as a structural framework to enable the communication of and adherence to good scientific practice.[27]
- Heads of units are responsible for a setup that ensures that the tasks of management, supervision, conflict resolution and quality assurance are delegated and implemented. In addition, it should be ensured that students and doctoral candidates receive appropriate supervision. There should be a primary reference person within the unit who communicates the principles of scientific practice at the HZI.[28] Overall, every scientist has the responsibility to implement the basic values and norms of scientific work in his/her actions and to support them.
- Abuse of power and exploitation of dependent relationships are prevented by the following organisational measures, both at the level of the individual scientific units and at the level of the management of the scientific institutes within HZI, although the list is not exhaustive: Ombudsperson Group, Works Council, Mediator Group, Equal Opportunity Officers, Confidential Representatives, and Supervisory Board.
- The HZI management is responsible for carrying out the risk assessment of mental stress and implementing the derived occupational health and safety measures and involves the works council in relevant processes. All executives with personnel responsibility are responsible for the prevention and reduction of mental stress as part of duty of care towards their employees.[29]
- In addition to intensive scientific training, a structured curriculum at the HZI offers doctoral students in particular the opportunity to expand interdisciplinary qualifications

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[26] Throughout the entire personnel selection process, the HZI will ensure that the Equal Opportunity Officer and the Representative of Severely Disabled Employees are involved. The process follows the principles of the company agreement on internal job advertisements.

[27] As offered by the HZI Graduate School, interactive UWEB course "Library Services for your Scientific Work & Good Scientific Practice"; consulting on the part of Ascenion GmbH; and support services of the HZI library through extensive link collections, materials and individual consultations.

[28] The safeguarding of tasks and duties is laid down within the HZI's Company Agreement on the Employment of Research Assistants and PhD Fellows - Doctoral Student Regulations.

[29] Company agreement on the risk assessment of psychological strain.

and improve interdisciplinary knowledge that prepares them for the job market. In addition, the HZI enables all its employees to take part in a wide range of training measures to best prepare themselves for the ever-changing work challenges.[30]

- The assessment of scientists' achievements at HZI follows the systematic evaluation of performance within the framework of an annual appraisal interview with the supervisor. A special focus is placed on the scientific contribution, the participation in collaborations, cooperation within the team as well as the commitment to teaching or supervision of young scientists, public relations, knowledge and technology transfer; contributions in the interest of society as a whole may also be acknowledged. In the case of senior scientists, activities in committees and special commitment to the institute are also recognized. Selected quantitative parameters such as standardized impact factors, citation frequencies, number of publications, third-party funding and patent applications are included in the assessment of senior scientists in a balanced ratio. In the case of doctoral candidates, performance is to be evaluated in annual thesis committees. In addition to scientific performance, other aspects may 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 considered manner. Where indicated voluntarily, individual characteristics in CVs - in addition to the categories of the General Equal Treatment Act - are also included in the assessment. High-quality science is based on discipline-specific criteria. The scientific attitude of the researcher, such as openness to knowledge and willingness to take risks, is also taken into account. Appropriate consideration is to be given to personal, family or health-related absences or the resulting extension of training or qualification periods, alternative career paths or comparable circumstances.

4 Non-compliance with Good Scientific Practice

Preamble

- The ombudspersons and members of the investigating committee reviewing suspected scientific misconduct shall use appropriate means to safeguard both the whistleblower and those accused.

Definition

- Scientific misconduct includes misrepresentation, false statements, and infringement of intellectual property or interfering with the research activities of others.
- Misrepresentation in this context means: inventing, deleting, or falsifying data, e.g., by selectively choosing or rejecting results without disclosing them; manipulating data, charts, or figures; and providing inaccurate information in application letters or grant proposals, multiple publications of data or text without appropriate disclosure.
- Intellectual property infringement in this context means: the unauthorized exploitation of scientific findings, research approaches or hypotheses while assuming authorship or the unauthorized adoption or other use of passages without adequate evidence of authorship (plagiarism); the exploitation of other people's ideas, especially as reviewers (theft of ideas); and the unfounded assumption of scientific authorship or co-

[30] HZI Guidelines for Strategic Personnel Development

authorship, as well as the unauthorized making of data accessible to third parties prior to their publication.

- In addition, scientific misconduct also results from having co-authorship of publications that are obviously falsified, or from gross neglect of supervisory duties. Scientific misconduct manifests itself, for example, in the failure to detect or prosecute sabotage or interference with research activities; the unfounded refusal to consent to a publication; or the damaging, destroying, or tampering with experimental setups, equipment, records, hardware, software, chemicals, or other supplies needed by another to conduct an experiment. This list is not exhaustive.
- Co-responsibility for misconduct may result from, among other things, active participation in the misconduct of others, joint knowledge of falsification by others, co-authorship of publications containing falsification, gross neglect of supervisory duties.
- The whistleblower's report must be made in good faith. Deliberately false or malicious allegations may themselves constitute scientific misconduct.

Contact persons

- In the event of suspicious circumstances, a contact person should be available, including those who, on the one hand, occupy a leading position and, on the other, can act independently and confidentially in this task. For this purpose, the HZI has established an ombudsperson group (trust group).

5 Ombudsperson group

Election

- All members of the scientific departments and units employed at the HZI may be elected to the ombudsperson group, provided they have completed a scientific degree. Ombudspersons may not be a member of a central management body of the HZI (e.g., Scientific or Administrative Director, Programme Board, and Directorate) during the course of their office. The term of office of each ombudsperson is limited to two terms.
- All scientific staff members of the HZI are eligible to vote.
- A call for nominations shall be made to all eligible voters at least three months prior to voting. At least five votes are required for nomination for election. The list of nominees must be announced four weeks before the election date.
- The election is to be conducted every four years by the HZI Council of Scientists. Based on the results of the election, an ombudsperson group consisting of five persons shall be established and, if possible, successors appointed to avoid vacancies when temporary contracts expire or members of the ombudsperson group retire.

Spokesperson

- The ombudsperson group shall elect a spokesperson from among its members, usually for a period of at least 12 months. The ombudsperson group also appoints an experienced scientist with national and international reputation as deputy spokesperson. The position of the spokesperson and the deputy spokesperson may change within the term of office of the ombudsperson group. The spokesperson and her or his deputy assume primarily coordinating tasks and internal and external

communication in matters of good scientific practice and in relation to the work of the ombudsperson group. She or he is the primary contact person for the HZI management.

Person of trust (ombudsperson)

- The primary contact person in cases of suspicion can be any member of the ombudsperson group. This member is the person of trust in the case and checks the plausibility and significance of any allegations made. The members of the ombudsperson group are listed on the intranet for all employees of the centre. The deputy of the ombudsperson in a case of alleged misconduct is primarily the spokesperson of the ombudsperson's group and secondarily the deputy spokesperson of the ombudsperson's group.
- The ombudsperson may involve one or more other members of the ombudsperson group for all tasks and consultations, while maintaining confidentiality - or hand them over completely to them in the event of conflict of interest or another serious reason. These person(s) can represent the ombudsperson appropriately in all tasks. In this case, the person of trust assumes a coordinating function and is to be informed promptly and fully by the members involved.
- In the event of a conflict of interest, the office of the members of the ombudsperson group concerned is suspended.
- The HZI management supports the ombudsperson group in its work and releases the ombudsperson from his duties in order to maintain good scientific practice at the Centre and enables him to attend further training courses.

Tasks and responsibilies of the ombudsperson

- The ombudsperson or his/her deputy advises those who approach him/her with a concern of the kind mentioned under point 3 and informs the management of the HZI after the corresponding conclusion of a possible procedure.
- The person of trust or his/her deputy considers the allegations from the point of view of plausibility with regard to concreteness and significance, possible motives and with regard to any possibility of their being exonerated. In doing so, they are bound to confidentiality and to the basic principle of the presumption of innocence.

6 Procedure

Review by person of trust (ombudsperson)

- The protection of the whistleblower (informant and whistleblower) must be taken into account in every case by maintaining confidentiality and preserving the presumption of innocence.
- The whistleblower must have objective evidence that standards of good scientific practice may have been violated. If the whistleblower cannot check the facts himself or herself, or if there are uncertainties in the interpretation of the guidelines for good scientific practice with regard to an observed event, the whistleblower should contact a trusted person of the HZI Ombudsperson Group, the central ombudsperson of the Helmholtz Association or the "Ombudsperson for Science" committee to clarify the suspicion.

- The ombudsperson group of the HZI decides on its own whether it will also review such reports where the whistleblower does not give his or her name (anonymous report). An anonymous report can only be reviewed in a procedure if the whistleblower provides the ombudsperson group of the HZI with reliable and sufficiently concrete evidence.
- If the whistleblower is known by name, the HZI Ombudsperson Group will treat the name confidentially and not disclose it to third parties without appropriate consent. The only exception is if there is a legal obligation to do so or if the person affected by the allegations cannot otherwise defend himself or herself properly because the identity of the whistleblower is key. Before the name of the whistleblower is disclosed, he or she shall be informed immediately; the whistleblower may decide whether to withdraw the report if name disclosure is foreseeable.
- The person(s) affected by the suspicion of misconduct will be informed or questioned by the person of trust in the course of an interview in order to verify the suspicion.
- The person(s) affected by the allegations and the whistleblower(s) will be given the opportunity to comment at each stage of the procedure.
- However, whistleblowers and wrongly accused persons must not suffer any disadvantage with regard to their own scientific or professional career.
- If possible, the report should not lead to delays during the whistleblower's professional qualification - especially in the case of young scientists - and the preparation of theses and doctorates should not be disadvantaged; this also applies to working conditions and possible contract extensions.
- After consultation with the whistleblower, the ombudsperson will forward any relevant information to the entire ombudsperson group, while maintaining confidentiality. The ombudsperson then asks the management to appoint members for further proceedings as an investigative commission.
- The confidentiality of the procedure is restricted if the whistleblower makes the suspicion public. The investigating body 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 unreasonable.

Procedure of the investigation commission

Investigation Commission

- The ombudsperson or his or her deputy from the ombudsperson's group shall participate in the proceedings to be conducted by the investigative commission in an advisory capacity.
- The investigative commission shall consist of at least three impartial persons or their substitutes in the event that they are unable to attend or are deemed to be in any way impartial. The members should have subject-related competence. One member and his deputy should be fully qualified lawyers.
- The investigative commission is entitled to take all steps on its own initiative at any time to clarify the facts of the case. To this end, it may obtain all necessary information and statements and, if necessary also involve members of the affected units.

- The person(s) concerned shall support the investigative commission in its work. Deliberations are not open to the public.
- The investigative commission will examine the extent to which scientific misconduct has occurred by means of independent evidence.
- The investigating commission will ensure that the entire procedure is carried out as promptly as possible and will take the necessary steps to complete each stage of the procedure within a reasonable period.

Preliminary proceedings

- The person(s) affected by the suspicion of misconduct will be informed, stating any incriminating facts or evidence, and will be given an opportunity to comment before the investigating commission within a reasonable period (usually within two weeks).
- After receiving a representation from the person concerned, the investigative commission will make a decision within two weeks as to whether the preliminary proceedings are to be terminated because the suspicion could not be substantiated to a sufficient degree.

Investigation procedure

- If there is sufficient suspicion, the case passes on to formal investigation proceedings. In the investigation procedure, the person(s) concerned is/are again given the opportunity to comment in an appropriate manner; in the case of an oral hearing, they may call in a trusted person to assist them.
- If the investigating commission considers misconduct to be unproven, it shall propose that the proceedings be discontinued. If the informant does not agree with the discontinuation of the proceedings, he/she should be heard again upon request within two weeks and the investigating commission shall reconsider its decision on the merits of the case.
- If, on the other hand, misconduct appears to be proven, it shall deliberate on recommendations for further action. In particular, it shall assess whether the misconduct is negligent, grossly negligent or intentional and what possible consequences the scientific misconduct may have for the person concerned.
- If the suspicions are confirmed, the investigating commission prepares a report, on the basis of which the person of trust or his or her deputy advises those persons who are or were involved in the case. In particular, it advises junior scientists and students who have been involved in scientific misconduct through no fault of their own with regard to safeguarding their personal and scientific integrity.

Informing HZI management

- The person of trust or his/her deputy informs the HZI management about the outcome of the proceedings on the basis of the report of the investigating commission. The management decides within four weeks on further consequences, if necessary also on a renewed referral of the proceedings via the person of trust or his/her deputy to the investigating commission.

Consequences of the proceedings

- The consequences for the person(s) concerned may include civil or criminal proceedings in addition to employment or service law, which are to be initiated by the HZI management.
- If, following the discovery of scientific misconduct, the withdrawal of an academic degree is considered as a measure, the relevant authorities will be consulted.
- After completion of the investigation (preliminary or main proceedings), the result will be communicated to the affected scientific organisations and, if necessary, to third parties who have a justified interest in the decision.

Confidentiality

- During the ongoing proceedings, all persons involved are obliged to maintain strict confidentiality with regard to all information concerning the case.
- Files of the formal investigation must be kept for 30 years.
- The persons concerned have the right to be informed by the confidential counsellor or his or her deputy about the duration of the retention period.

Procedure in case of non-resolution of the HZI

- If the HZI-internal ombudsperson group is not able deliver a resolution or clarification of the case of suspected misconduct, or if it requires appropriate consultations, the central ombudsperson of the Helmholtz Association may be consulted.
- This can be considered in particular in the case of personal bias within the ombudsperson group, participation of several centres of the Helmholtz Association or if the management level (management, heads of the organisational units) is affected. The whistleblower must agree to this transfer of proceedings.
- If this mediation also fails, the DFG's "Ombudsperson for Science" committee can be called in. The HZI Ombudsperson Group advises the persons involved that the central ombudsperson of the Helmholtz Association and the DFG's "Ombudsperson for Science" committee can also be contacted directly by the whistleblower or the person affected by the allegations, or anonymously, and arranges contact if necessary. However, several ombudsperson offices should not be involved in parallel.

Prof. Dr. Dirk Heinz

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