

## Guideline for ensuring Good Scientific Practice at the Leibniz Center for Tropical Marine Research (ZMT) GmbH

### Preamble

The employees of the Leibniz Centre for Tropical Marine Research (ZMT) GmbH are aware of their responsibility to ensure and communicate the rules of good scientific practice and to prevent scientific misconduct by means of appropriate procedures and measures. To this end, they regularly update their knowledge on the standards of good scientific practice. The following rules are intended as a ZMT-specific refinement and amendment of individual aspects specified in the corresponding “*Guidelines for Good Scientific Practice in the Leibniz Association*<sup>1</sup>”. Moreover, the ZMT guideline at hand involves the unrestricted submission to the Code of Conduct issued by the German Research Foundation (DFG) “*Guidelines for Safeguarding Good Research Practice*”, in its latest version, as a legally binding frame of reference. ZMT employees at all career levels and all ZMT members, such as visiting scientists and scholars, shall generally accept and follow all recommendations and regulations formulated herein by the Leibniz Association and the German Research Foundation. The following institute-specific rules address the following issues: 1) the rules of good scientific practice, 2) scientific misconduct, and 3) the procedures to be followed in the event of controversies, suspicions, and disputes regarding compliance with good scientific practice (decentral ombudsperson at the ZMT).

### 1. Rules of good scientific practice

The guidelines of the German Research Foundation, which are specified more precisely by the Leibniz Association, describe in detail the rules of good scientific practice. All ZMT employees are responsible for ensuring that these guidelines are observed. They form an integral part of teaching, training, advanced and continuing education of young scientists as well as of scientific and technical staff. In this context, not only theoretical knowledge and technical skills, but also a basic ethical attitude in scientific work shall be taught. The general recognition of the present Guidelines on Good Scientific Practice is confirmed by a signature, usually within the framework of the recruitment or guest contract. The communication of ethical responsibility in the research of people and society is additionally supported by an ethical clearance procedure established at the ZMT. The rules of good scientific practice include in particular the following issues:

#### 1.1. Working in compliance with the *lege artis* standard

Working in compliance with the *lege artis* standard means performing the work in accordance with the latest professional and discipline-specific standards and with the necessary qualifications and training. For new ZMT employees at all career levels, the ZMT Academy annually organises the ZMT Welcome Week, which also includes advanced training on good scientific practice, authorship and the prevention of plagiarism. In addition, the ZMT supports all employees in the continuous process of learning and

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<sup>1</sup> *Guidelines on Safeguarding Good Scientific Practice* of the Leibniz Association issued on 28 November 2019.

further training on good scientific practice, e.g. by the ombudspersons who pass on information gained in further training courses during the weekly Palaver.

### **1.2 The responsibility of authors of scientific publications**

The ZMT encourages its scientists to publish peer reviewed research results preferably according to the open access principle<sup>2</sup>.

Scientific authorship implies responsibility and accountability for publications. An author has made a significant contribution if they

- contributed substantially to the conception or design of the study,
- collected data or analysed results,
- contributed to the writing of the manuscript and

Each author has to critically review and approve the final manuscript. As a practical rule, each author named on the article should be able to present its content. Apart from the general guidelines mentioned above, there is no definition of whether or not a person can be included as co-author of an article. Furthermore, the meaning and importance of the role played by the last and first mentioned author may vary according to the discipline, country or institutional environment. For that reason, the question of authorship, i.e. who is to be included in what order, and the respective duties of the authors should be clarified at an early stage of the project, but no later than before starting the joint writing of an article. Planned manuscripts, for example, may be the subject of a cooperation agreement in large collaborative research projects. The lead author or first author supervises the entire writing process, arranges for agreement on co-authorship and involves ZMT partner institutions, if any.

Potential conflicts may arise with regard to the identification of the first author, co-authors and senior author, as there are different customs depending on the discipline or country. Possible options include alphabetical order, guidelines for involving each member of a working group, a research cruise, or political argumentations. The ZMT proposes that the first author shall be the lead author providing the greatest individual contribution to the content and the author of the first draft. Many journals also offer the possibility to name two lead or senior authors on an equal footing. Ideally, the journal will offer the possibility to list the individual contribution of each author.

### **1.3 Adequate support for young researchers**

The training and promotion of young scientists are central goals of the ZMT. Apart from methodological skills, the ZMT will teach young scientists a basic ethical attitude for scientific working, for responsible handling of results and for cooperating with other scientists.

The ZMT Doctoral Studies Regulation provides a binding description of the rights and obligations applicable to doctoral candidates and their supervisors working at the ZMT, as well as the framework for obtaining a scientific degree. Each junior researcher must have a primary reference person in the working group who also communicates the content of these guidelines on good scientific practice.

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<sup>2</sup> Open Access Policy of the Leibniz Center for Tropical Marine Research in accordance with the Leibniz Association's Open Access Policy 2016-2020.

#### **1.4 Cooperation and responsibility in management functions**

Any person who performs management tasks shall at all times be responsible for the conditions in the relevant organisational unit (e.g. working group). Originality and quality shall always take precedence over quantity as performance and evaluation criteria for promotions, recruitments, appointments and resource allocations. Management tasks, supervision, conflict resolution and quality assurance shall be clearly assigned and actually performed.

The head of a scientific unit shall create organisational structures in which the results achieved by specialised division of tasks can be mutually communicated, criticised and integrated into a common state of knowledge. An active communication, especially within a working group, and guaranteed mentoring relations are the most effective means to prevent the development of dishonest behaviour.

The responsible cooperation in research projects includes the definition of clear roles and responsibilities of the scientists involved in the research project, as well as of the staff accompanying the research. These responsibilities must be transparent at all times during a research project. Project or cooperation partners should be informed about the progress and manuscripts resulting from the joint research project at each stage of the project, irrespective of their actual involvement in a particular step, regardless of whether or not they are potential (co-)authors of the manuscript in question.

#### **1.5 Documentation, backup and storage of data**

ZMT employees shall document all information relevant to the production of a research result as clearly as is required by, and appropriate, in the respective discipline to allow the result to be reviewed and assessed. As a general rule, they also document individual results which do not support the research hypothesis. Protocols and primary data are to be stored securely and, if possible, sustainably by preparing and storing data and associated metadata in such a way that they can be reused by others. For this purpose, the ZMT applies the principle of FAIR data. FAIR stands for Findable, Accessible, Interoperable and Reusable. The FAIR principles focus on both the data management itself and the infrastructures and services, such as central public repositories and the internal ZMT research database.

The original data must remain accessible to authorised staff on durable and secure media in the working group/infrastructure unit where they were created, in accordance with legal requirements, but at least for a period of ten years after their collection or after the publication of the scientific paper for which they form the basis. Original data are the property of the ZMT, unless other contractual arrangements have been agreed upon within the projects. Scientists may take copies with them, provided nothing to the contrary is stipulated by data protection laws. The scientific director and their representative have the right to inspect the original data at any time.

## 2. Scientific misconduct

The ZMT will respond to any suspected non-compliance with good scientific practice with the utmost attention and stringency.

### 2.1 Violations of good scientific practice

Examples for violations of good scientific practice shall include, without being limited to, the following:

- data fabrication (invention of data and/or results) and its publication;
- falsification (manipulation, suppression or modification of experimental conditions which are not appropriately reflected in the analysis);
- plagiarism (use of ideas, references, results or arguments and representations of others or of oneself, without indicating this appropriately);
- assumption or unjustified adoption of scientific authorship or co-authorship or using another person's name as co-author without their permission. (Individual contributions which, taken on their own, are not sufficient for rendering a contributor eligible for authorship, but should be mentioned within the acknowledgement, include, for example, merely technical support for data production, instruction of scientists in standard methods, providing access to sampling sites or research permissions, providing access to equipment or instruments, proofreading or translating the manuscript without performing any substantial work on the content, assumption of only organisational responsibility in respect of applications for third-party funding, management of the institution or organisational unit in which the publication was produced);
- non-disclosure with regard to conflicts of interest and parallel publications or applications;
- culpable obstruction of research activities performed by other scientists or attempts to compromise the scientific reputation of another person;
- sabotage of research activities;
- culpable deletion of original data and culpable violation of the documentation and storage obligation or culpable removal of sample material from the ZMT;
- other infringements of the principles of good scientific practice committed with intent or gross negligence.

### 2.2 Joint responsibility for misconduct

Scientists will have to assume joint responsibility for misconduct, in particular

- if they are involved in, or aware of, scientific misconduct of others;
- if they grossly neglect their duty of supervision;
- if they are involved as co-authors in publications which are subject to forgery.

### 3. The Ombudsperson at the Leibniz Center for Tropical Marine Research

The ZMT ombudsperson advises the ZMT scientists and mediates in conflicts related to good scientific practice. Conflicts shall be addressed openly as early as possible. In the ombuds procedure, an amicable solution shall initially be sought. The further procedure for investigating alleged scientific misconduct by the ZMT ombudsperson is based on the following rules:

**3.1** The scientists of the ZMT elect an ombudsperson as well as a representative as a first point of contact in case of discrepancies, suspicions, and disputes regarding compliance with good scientific practice (ZMT ombudsperson). The modalities of the election are specified in the election regulations.

**3.2** The ZMT ombudsperson's representative shall assume the role of the ZMT ombudsperson if the latter cannot act objectively in a given case due to a conflict of interest, or is prevented from attending due to absence. In addition, the representative shall assume the ZMT ombudsperson's role if the latter leaves the institute or resigns from his office prematurely for other reasons.

**3.3** The ZMT ombudsperson shall attend further training measures, for example those offered by the Leibniz Association, in order to support their work. Moreover, the ZMT ombudsperson shall be in contact with ombudspersons of other Leibniz Institutes as well as with other research facilities and universities in the region to exchange experience and thus ensure that their role is adequately fulfilled. The Confidentiality of the information must be maintained without fail.

**3.4** The ombudsperson of the ZMT will become active, if a scientist calls upon them. The ombudsperson can take action in justified cases, if being informed by third parties of a suspicion of scientific misconduct. Any approach to the ombudsperson will be treated confidentially.

**3.5** The ZMT ombudsperson conducts a preliminary examination. As a first stage, she or he will inform the scientists concerned and attempt to find a solution by means of mediation. If it seems necessary, a committee of inquiry may be convened. This committee consists of the chairperson of the Scientific Advisory Board, the scientific director of the ZMT, or another scientist without any direct working relationship to the persons affected by the procedure. The ZMT ombudsperson shall ensure that the committee of inquiry is not biased in the specific case and, if necessary, shall appoint alternative members for the committee of inquiry. For this purpose, members of other research institutions may be involved.

**3.6** If the ZMT ombudsperson decides in the course of a proceeding that the accusations require further investigation or that a non-biased committee of inquiry cannot be formed, the case shall be submitted to the ombudsperson of the Leibniz Association. Further measures to be taken by the Leibniz Association's central Ombuds Committee, appointing a committee of inquiry and concluding the procedure, are specified in sections 5-7 of the Guidelines for Good Scientific Practice in the Leibniz Association. Notwithstanding the foregoing, and particularly in the case of projects funded by the German Research Foundation (DFG), the option to contact the "German Research Ombudsman" at the DFG shall remain unaffected.

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