



MGK Integrated Research Training Group

Rules and Requirements to maintain standards of good scientific practice

These guidelines refer to recommendations by the “Deutsche Forschungsgemeinschaft (DFG)”

Honesty is the fundamental principle in Science

Honesty towards oneself and others is the fundamental principle of scientific work in all institutions and disciplines worldwide. Honesty is the ethical norm of every scientific practice no matter how different the respective disciplines are technically and thematically. The self-government of science is responsible for maintaining the rules of good scientific practice.

Basic Principles of good scientific practice

Scientists and their coworkers are obliged to follow the basic principles of scientific practice and to behave in an exemplary manner. They are also obliged to teach and train students and junior staff in the principles of good scientific practice, which especially applies to senior lecturers and professors. According to the recommendation of the DFG (letter from August, 3rd 1999), the basic rules are:

General principles of scientific work:

- Working “lege artis”
- Documentation of results and securing primary data sets
- Consequent critics and doubt of own results
- Strict honesty concerning contributions of partners, competitors and predecessors
- The responsible supervision of students and junior staff/coworkers
- Cooperation and responsibility of performance in research groups
- Scientific publications

Violation against the rules of good scientific practice

The following facts are regarded to be a violation against the rules of good scientific practice and, possibly, a scientific fraud or an incitement to scientific

fraud:

- Invention, forgery and suppression of data
- Plagiarism
- Scientific misconduct
- Obtain authorships in publications by false pretences
- Exclusion from legitimate authorships
- Missing or insufficient scientific discussion in research groups
- Insufficient supervision of doctoral students
- Loss or insufficient documentation of original data
- Missing teaching and training of research assistants/coworkers in the principles of good scientific practice
- Defamation of the principles of good scientific practice
- Breach of confidence acting as an expert (member of an advisory committee) or as a senior scientist/group leader (professor)

Responsibility towards the realization of good scientific practice

Every scientist is responsible for his own behavior in the context of his/her scientific work. Every leader of a research group is responsible for the realization of the principles of good scientific practice in his/her group and for the overall compliance with the rules. Therefore, an animated communication is needed within a research group, especially, the free and open discussion of scientific results and data e.g. in regular group meetings.

The leaders of scientific research groups have the responsibility to guarantee that every member of the group is familiar with the principles of good scientific practice and, moreover, to provide the basic requirements for constantly acting according to the rules. They have to make sure that every single member of the group is willing to discuss his/her hypotheses, theories and scientific data openly in order to obtain a critical evaluation. The leadership of a research group requires presence and control. In cases, where these major aspects cannot be guaranteed all the time, delegation of duties is necessary.

Doctoral/PhD students

Concerning the supervision of doctoral or PhD students, it is recommended that a written description or sketch including a detailed plan and the aims of the project is developed before starting the practical work.

Obligation to documentation

Primary data sets having served as the basis for publications or a thesis should be kept safe and in solid files for at least ten years in the respective research group. Every scientist is responsible for the safekeeping and is obliged to prove the appropriate documentation of his/her work by providing carefully written protocols. Furthermore, the documentation of experiments including numeric calculations has to be done in every single detail, so that another scientist/supervisor can repeat the experiments or understand them easily at any time. The reproducibility of scientific experiments is regarded to be a basic test. Protocol and lab books/files have to be solid and have to contain numbered

sheets. It is not allowed to remove sheets. Everything has to be kept carefully and safe. The loss or removal of original data from the lab is thought to be a violation against the scientific conscientiousness and justifies primary suspicion of dishonest or grossly negligent behavior. In case of a move to another lab/institution, the data sets produced by a scientist, in principle, remain in the lab/institution of origin. However, exceptions from this rule are possible according to prior written and signed agreements between members of the labs/institutions involved.

Publications, authorship

Authors of scientific publications are jointly responsible for the respective contents of the manuscripts. Therefore, a so-called "authorship by honor" is excluded. In publications, especially in those bearing completely new scientific findings, methods and results have to be described in full detail, so that every scientist can easily follow and understand them. Previous work (from oneself or others) has to be indicated thoroughly and cited correctly. Furthermore, previous findings have to be repeated and described as such as being necessary for fully understanding the respective context. Authorship of a scientific original paper can only be granted to those who have contributed substantially to the conception of the study or experiments, to the production, analysis or interpretation of data or to the writing of the manuscript. Common agreement is needed before publication, which implies that all authors are responsible.

Additional information on "Good scientific practice" can be downloaded from the websites of the Universities of Marburg and Giessen.

Info Uni Marburg

http://www.uni-marburg.de/forschung-en/guidelines/index_html?set_language=en

Info Uni Giessen

<http://www.uni-giessen.de/cms/fbz/zentren/ggl/curriculum/rules-for-dissertation>