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Concept for compliance with standards of good scientific practice at FLI



Leibniz Institute on Aging – Fritz Lipmann-Institute (FLI)

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Concept for ensuring compliance with standards of good scientific practice at Leibniz Institute on Aging – Fritz Lipmann Institute (FLI)

1. Introduction

In their urge to perceive “[...] whatever holds the world together in its inmost folds [...]”¹, scientists break new ground every day, acquire new knowledge and make discoveries etc. In order for these to be accepted in science and society, certain rules within science need to be complied with. It is only on this basis that science can thrive and contribute to the enrichment of our society.

Science has for many years formulated and established mechanisms for quality assurance and control which should also serve to build trust. For example, the German Research Foundation (DFG) writes in its guidelines on Safeguarding Good Scientific Practice 1998 (in the version 2013)²

“[...] Preliminary remark [...]”

“[...] Complete prevention of dishonesty is no more feasible in science than in other walks of life. Precautions can and have to be taken against this though. Governmental measures are not required for this. It is necessary though that not only every scientist, but above all science in its constituted institutions – universities, research institutions, scientific societies, scientific journals, funding institutions – are aware of the standards of good scientific practice and apply them in their daily activities.[...]”

“[...] Recommendation 3 [...]”

“[...] Members of a work group have to be able to rely on each other. Only on the basis of mutual trust are the conversations, discussions – and arguments – which are typical of lively, productive groups possible. For the individual researcher, his own work group is not only his institutional home, it is also the place where ideas are discussed and become hypotheses and theories, where surprising results are interpreted and classified in contexts.[...]”

Good scientific practice (GSP) is the essential requirement for sustainable success, trust and long-term recognition in science. Accordingly, the staff of the FLI and its predecessor institute have practiced GSP for more than 25 years and contributed to the good national and international reputation of this Leibniz Institution. With regard to GSP at FLI, June 2017 marked a clear break from this when for the first time a scientific member of staff, in this case the scientific director Prof. Dr. K. Lenhard Rudolph, was reprimanded in writing for grossly negligent scientific misconduct (statement by the Leibniz Association³). This statement is/was accompanied by the requirement that a report on how compliance with the standards of GSP will be ensured in future at FLI is presented to the Presidium of the Leibniz Association by 1 November 2017. The aforementioned case of a breach of GSP has prompted the FLI to force detailed planned improvements in data documentation, quality control and the technical mentoring and supervision of staff.

¹ von Goethe, J. W. (1808), Faust: A Tragedy. The First Part, Chapter 4.

² German Research Foundation (publisher) 1998, 2013, Safeguarding Good Scientific Practice. Memorandum, enlarged edition, p. 14 and 16.

³ https://www.leibniz-gemeinschaft.de/fileadmin/user_upload/downloads/Forschung/Stellungnahme_FLI.pdf, (retrieval date: 14.09.2017).

This concept for the development of the framework conditions for safeguarding GSP at FLI builds accordingly on the position developed and established since 1999, is guided by the latest experiences and developments elsewhere including at the Leibniz-Center for Medicine and Biosciences – Research Center Borstel⁴ and explains the measures introduced and initiated after June 2017.

2. Development of measures to safeguard GSP at FLI

Based on the DFG memorandum on Safeguarding Good Scientific Practice 1998, at the Institute of Molecular Biotechnology (IMB), the predecessor institute of the FLI, an ombudsman was appointed and GSP rules tailored for the institute were adopted. The work of the ombudsman at IMB / FLI was inspired by the topics “Integration of guidelines for GSP in training” and “Mediation” discussed at the 2nd Ombudsman Conference of the DFG in October 2006 and the topic “Ten years of ombudsman work in Germany” discussed at the 3rd Conference in October 2009. As a result of these conferences, the institute stepped up its efforts to increase the awareness of the institute's staff of the GSP rules.

Dr. Jürgen Sühnel acted as the ombudsman from 1999 to 2011, Dr. Matthias Görlach from 2011 to 2015 and Prof. Dr. Frank Große from January 2016. Due to illness, Prof. Große has been deputised by Dr. Görlach since May 2016. The ombudsmen have conducted many interviews with staff concerning assignments and possible ombuds work.

The ombudsman was always very helpful, constructive and supportive. In the first case a joint publication was achieved. In the second case the submission of a thesis could not be recommended and in the fifth case the faculty concerned was informed and the thesis, which had already been submitted, was not accepted by the faculty.

The ombuds work at FLI also includes communicating ombuds information clearly and transparently. To this end, in 2008 the ombuds information on the Institute website was transferred from the intranet to the public part of the website and an interview with the ombudsman was published in the institute and works council newspaper “FLipper” in May 2008. The ombudsman in office regularly informs of new developments and requirements in the area of GSP. For example, the ombudsman of the FLI informed the group leaders in April 2017 of the “*European Code of Conduct for Research Integrity*”⁵ with the request that they familiarise themselves with it and communicate it to their groups.

Since 2004 a well-established weekly institute seminar has taken place in which two scientists present their latest findings to the whole institute. The data presented is challenged, controls are assessed and suggestions are given.

The *Leibniz Graduate School on Aging (LGSA)* established in 2005 is a key element for safeguarding GSP at FLI. PhD students are selected and admitted following a standard procedure with an interview by a committee consisting of three group leaders. The mentoring of the PhD student is primarily the responsibility of the group leader who sets the topic. A thesis committee consisting of the mentoring and two further group leaders, one of whom should be external, is set up for every PhD student. The thesis com-

⁴ Research Center Borstel (publisher), Good Scientific Practice – The Borstel Model, 2015, DOI 10.4126/FRL01-006399232), retrieval date: 14.09.2017).

⁵ <http://www.leibniz-fli.de/fileadmin/media/downloads/ALLEA-European-Code-of-Conduct-for-Research-Integrity-2017-1.pdf>, (retrieval date: 14.09.2017).

mittee meets at least annually, monitors and assesses the progress of the thesis and is available to give consultation to the PhD student (LGSA rules⁶). Since 2010 the LGSA has organised training courses for all PhD students on lab record keeping, presentation and GSP, which have been mandatory since 2013.

Since 2007 the FLI rules concerning GSP have been handed out when new staff are employed and they have been a part of the contract of employment since 2011.

Since 2010 GSP courses have been provided annually at FLI by external trainers. To date a total of 80 PhD students and 11 postdocs have attended these courses. The courses are organised by employees of the Institut für systematische Medizin- und Organisationsethik (Institute of Systemic Medical and Organisational Ethics) in Berlin. The institute was founded by Dr. Gerlinde Sponholz and Dr. Helmut Baitsch,⁷ who both made an important contribution to the drafting of the DFG memorandum on “safeguarding good scientific practice”. Ms. Sponholz developed together with the Ombudsman for Science the curriculum of GSP courses and led the first course at FLI in 2010. The trainer for all other courses was and is Dr. Michael Gommel. Dr. Gommel is a biologist and system organisational consultant and since 2009 has taught GSP in several European countries.

⁶ <http://lgsa.leibniz-fli.de/about-us/lgsa-procedures/>, (retrieval date: 14.09.2017).

⁷ <http://www.imo-ethik.de/philosophy.html>, (retrieval date: 14.09.2017).

3. Ongoing measures to further improve GSP compliance at FLI

Education and training in the area of GSP compliance are dynamic processes. Improvements, adjustments, new ideas concerning the framework for GSP at FLI are discussed constantly. Some of the current projects were initiated in 2016. In particular the scientific misconduct of Prof. Rudolph has contributed to thinking of ways of increasing the awareness of all staff of GSP. The topic was discussed intensively at an extraordinary staff meeting on 17.08.2017. At the annual closed meeting of all scientific staff of the FLI (05.09.2017, Luisenthal), keynote speech on GSP was included in the extensive programme. The speech was given by Dr. Felicitas Riedel. She is a lawyer and mediator and since 2011 has led the Office of Ombudspersons and the Standing Committee for the Investigation of Matters of Scientific Misconduct of Philipps-Universität Marburg.

(1) Mandatory GSP courses for group leaders and postdocs

The obligatory attendance of GSP courses will be extended to group leaders and postdocs.

All group leaders of the FLI will be given training for GSP examination that has already been planned to take place on 22./23.1.2018 by external experts on the subject (Ms. Sponholz, and Mr. Gommel).

Newly recruited group leaders and postdocs have to attend an appropriate course at the earliest possible date. Long-time group leaders and postdocs have to renew this qualification after five years. The attendance will be documented in the personnel file and is now part of the duties and responsibilities assigned in writing to group leaders.

(2) Institute-wide introduction of an Electronic Lab Notebook, research data management

Currently only few Electronic Lab Notebooks (ELNs⁸) are used. The IT service of the FLI is preparing an invitation to tender for an ELN. In the implementation stage, the training of all members of a group including the technical assistants will play a key role so that the ELN is of the greatest possible benefit and becomes the essential tool for the complete documentation of data. The aim is to implement the ELN as mandatory for all staff. As a further complementary measure, a task force has been set up to develop and implement a concept for primary data management. The aim is to transfer primary data to a read-only archive to simplify the systematic documentation and safeguarding of results.

(3) Guideline Quality Control

A *Guideline quality control* of experimental work in the laboratories and facilities has been developed.

(4) Rules for archiving of publication-relevant data

The archiving of publication-relevant data was previously organised individually by the work groups. The implementation of a central archiving system is in progress. Currently the publication-relevant data for

⁸ Electronic Lab Notebook (ELN)

central archiving are provided electronically (like on a USB-stick or by the FLIshare). Please see separate *Rules for archiving publication-relevant data* for details. It is included in the *Form for publications* and described as well in the *Rules for publishing research articles*.

(5) Computer-aided GSP check of FLI publications

The institute is evaluating a computer-aided check of publications for data integrity by an external company. The aim is to check manuscripts independently by electronic means for image manipulations, plagiarism and soundness of statistical data. To check for soundness of statistical data, the archived original data will be used. It is included in the *Form for publications* and described as well in the *Rules for publishing research articles*.

(6) Expert-based review of all dissertations for GSP compliance

A scientific FLI member of staff who has previously edited the grammar of dissertations was given the task of also reviewing these for compliance with GSP rules. For this purpose a guideline will be established in January 2018.