Added notes on Good Scientific Practice (GSP)

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Abstract

This are added notes to the Seminar on Good Scientific Practice (GSP). The notes contain the main questions/issues and the links to relevant regulations, to related interesting webpages and videos which we disuss in the seminar. The notes are not to be intended selfconsistent or self explaining, they are only useful in combination with the attendence of the seminar.

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1 Introduction

What is it about?

Why do we discuss it?

Whom does it concern?

Does it refer to myself?

Who looks at me regarding GSP?

Video:
General aspects by Nora Glaubrecht

Link:
Bylaws of Universität Hamburg

Link:
Doctoral degree regulations of the MIN Faculty of Universität Hamburg

Are other regulations relevant too?
DFG, EU,..., Max Planck, Helmholtz, Leibnitz, Fraunhofer, scientific journals,..

Link:
DFG memorandum "Safeguarding Good Scientific Practice"

Link:
MPI procedures and regulations

Link:
Helmholtz GSP

Link:
Rules to Ensure Good Scientific Practice at DESY and Procedures in Case of Scientific Misconduct

Link:
Leibniz GSP and Ombudspersons

Link:
Fraunhofer Ombudsperson and scientific integrity

Link (exemplary):
Authorial Integrity in Scientific Publication
by SIAM Society of Industrial and Applied Mathematics (scientific journals)

Video: Prominent cases in science and society by Nora Glaubrecht

Link (exemplary): Vroniplag wiki

Link: Prominent cases in academia

Link: Schoen scandal

Message:
It is a wide field, it is important to have an idea about the key questions and issues!

2 Misconduct

What do the various statements say? What are the keywords?

Links:
Amsterdam Agenda
Global Research Council statement
Montreal statement
Singapore statement

ALLEA, The European Code of Conduct for Research Integrity
ENRIO European Network of Research Integrity Offices
WCRIF World Congress on Research Integrity Foundation

What do we mean by honesty and integrity?
Having **high scientific standards**, high standards in doing the job and the **determination not to lower the standards**.

Appearence and reasons of misconduct?

Forms of missconduct:
severe misconduct (intentionally, repeatetly,..)
questionable research practice (being aware of ..)
sloppiness (naivity,...)
in contrary to
honest research errors

Try to classify cases
i.e.
Article of Dias et al, Nature (2023)
vs
Article of Hai-Hu Wen et al, Nature (2023)

Message:
To know about it in more detail is the first step to avoid and combat it!

3 Authorship

Types of publications?
books (general), books (specific), journals (peer reviewed), journals (general), proceedings, other publications

The most important publication medium in your field?

The most important journals/media in your field?

The most important conferences in your field?
Why is this important?

The most important workshops in your field? Why is this important?

- Link (exemplary): SIAM papers: guidelines and rules for scientific papers
  by SIAM Society of Industrial and Applied Mathematics
- Link (exemplary): SIAM journals instructions for the authors
  by SIAM Society of Industrial and Applied Mathematics
- Video: Publishing in SIAM Journals: What and How
  by SIAM Society of Industrial and Applied Mathematics
- Video: I hate impact factors
  by Martin Chalfie, Nobel prize 2008, chemistry
- Video: About published rubbish
  by Paul Nurse, Nobel prize 2001, physiology and medicine
- Link: mathematical paper generator
- Link: Beall's list of potential predatory journals and publishers
- Link: Predatory reports (anonymous)

Peer review process

What can we expect from an author [Autorship1, Autorship2]? What should the authors have in mind?

How would you see this issue of (seemingly) contradictory results [SuperconductivityYes, SuperconductivityNo]?

What is text recycling?
from the Text Recycling Research Project [Textrecycling1, Textrecycling2]

Use of AI in publications?
Example: SIAM Editorial Policy – Artificial Intelligence
"Eigenanteilserklärung Dissertation"

Message:
Be prepared, you will enter a discussion on this issue earlier than expected! And you will meet it very often!

4 Data handling

What is data?

Legal issues related to data?

paper by Kuschel and Dolling [DataLegalIssues]

Link: New Center for Sustainable Research Data Management at UHH

Link: Handling of research data DFG

Important questions to be clarified:

- Do you have access to all the data relevant for your research question?
- Who else has access to the data relevant for your research question?
- Do you know if you will have access also after leaving the project/finishing the thesis/leaving the UHH?
- Do you know details about the backup procedure?

In case of problems
you, your group, your department, your faculty, the President of UHH
will be asked for clarification

Reproducibility [Repro1, Repro2, Repro3]:
Nature portfolio: Six factors affecting reproducibility in life science research and how to handle them

Computer codes

Data 'ownership' links:
DFG: Handling of Research Data
forschungsdaten.info
Forschung und Lehre 2/2028: Umgang mit Forschungsdaten

Message:
To know and - if necessary - to discuss the rules and practices in your research environment is crucial and avoids many (canonical) conflicts!

5 Supervision and conflicts

What is a Phd?

What to do, and what not to do?

A short look to the MIN UHH PhD regulations

- Video: Don't write what you don't understand
  by Oliver Smithies, Nobel Laureate 2007, physiology and medicine
- Video: How to choose a good PhD student
  by Paul Nurse, Nobel prize 2001, physiology and medicine
- Video: How to choose a PhD supervisor
  by Paul Nurse, Nobel prize 2001, physiology and medicine
- Video: PhD advice
  by Paul Nurse, Nobel prize 2001, physiology and medicine
- How to fail a PhD
- Video: What is a good postdoc application?
  by Martin Chalfie, Nobel prize 2008, chemistry
- Video: What is a postdoc?
  by The Jackson Laboratory, USA

Transition from PhD to Postdoc: what changes?

Postdoc mentoring: what is important?

Message:
Reflect and decide what is important for your research and your personal career! How does this fit with your actual situation?

Whom to contact/involve in case of problems?

- Supervisor
- Co-supervisor(s) (if the case)
- Head of supervision panel (if the case)
- MINGZ supervision support
- Ombuds office (in the role as counselor)
- Hamburg Reseach Academy HRA
- Head of the Subject Doctoral Committee
  (Bio, Chem, Geo, Inf, Math, Phys)
- Members of the Subject Doctoral Committee
- Head of the Faculty Doctoral Committee
- Members of the Faculty Doctoral Committee
- Head of Department (Biology, Chemistry, Geociences, Informatics, Mathematics, Physics)
- Dean of the Faculty (MIN)
- Vice Dean of the Faculty (MIN), Research, Study Programs, Young researcher

Message:
A conflict - especially in your PhD period - costs you time, patience, staying power,...

Message:
Most of the conflicts originate in the fact that things were not discussed and clarified in advance. Insofar many conflicts are avoidable.

6 Academic freedom

What could be indicators of academic freedom?

Video: The Academic Freedom Index explained (5:49)
by the Global Public Policy Institute (GPPi)

Is academic freedom necessary for scientific excellence? Why/why not? How is academic freedom different from the freedom of opinion/expression?

Video: The Code of Academic Freedom at the University of Hamburg (8:21)
by Kristina Allgoewer

Video: Controversial Cases (2:57)
by Kristina Allgoewer

Do students have the right to protest?

Do scientists have the right to publish in a field they are not experts in?

Should potentially harmful research be restricted?

Further links:

Code of Academic Freedom : University : Universität Hamburg

Zivilklausel : Fakultät für Mathematik, Informatik und Naturwissenschaften : Universität Hamburg

Scholars at Risk — Protecting scholars and the freedom to think, question, and share ideas

Assessing Academic Freedom Worldwide - GPPi ⇒ Dataset V-Dem

Message:

Academia needs freedom to produce new knowledge.
Academics must be able to rely on the university to protect their academic freedom.
Academics must endure criticism as essential element of academia.
Criticism needs to be accepted as long as its actual goal is not to compromise personal integrity or other legal interests.

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[4] Bylaws for Safeguarding Good Scientific Practice and Avoiding Scientific Misconduct at Universität Hamburg, Official Nore, August 6th, 2014

[5] World Conferences on Reserarch Integrity Foundation