

# Evaluation results: Rules of Good Scientific Practice (January 24, 2020)

## Course details

Instructor: Henrik Hartmann

More information is provided on the webpage: <https://www.bgc-jena.mpg.de/domains/imprs-gbgc.de/index.php/Courses/GoodScientificPractice2020>

5 out of 8 participants filled in the survey by February 12, 2020

## Survey results

**To which extend has the course improved/clarified your general notion of good scientific conduct?**

1. It was good to have certain points reiterated, especially the need to store and accurately record all data as this is easily overlooked. However, I believe that by this point, many scientists should already have a sound idea of what constitutes good scientific practice.
2. /
3. To a rather broad extend. Some details were especially interesting (because new to me), such as the scientific ombudsperson of the institute.
4. To a great extend. General quires I had were answered, and most ways of misconduct deliberate or not were carefully discussed.
5. The course gave a good and general overview about good scientific practice. It did not add much to my previous knowledge, yet it was an illustrative refresher.

**Are you aware how the concept of good scientific practice applies to your particular situation (e.g. with respect to your field of studies and your career stage)? How has the seminar contributed to this understanding? Do you have any ideas for further improvement in this respect?**

1. It was good to have it highlighted that researchers at the beginning of their careers can be exploited with respect to publications, especially as this course is aimed at such researchers. Any other hints/tips would be welcome at this point!
2. /
3. Since I am at this institute I publish my code in gitlab, so that all colleagues are able to reproduce my results. I think more information about such very concrete measures could be beneficial.
4. Yes. In this early stage of my carrier i was unaware of the importance of small things that could actually be a bad scientific practice, for instance i wasn't aware of the rules regarding the storage of data that has been used for a study. So in this way

common errors which would lead to unhealthy situation were discussed I think this is really important especially in the early stages.

5. Yes. The course was taught in a interesting and enjoyable way.

#### **Which parts of the course were especially good (and why)?**

1. It was taught with enthusiasm which made it interesting. I found the statistics from the survey of scientists conducting bad scientific practice particularly interesting as it enforces the importance of being critical when reading about the work of others.
2. Some good examples were presented to show problems caused by bad designs of experiments, which was useful to learn.
3. I really enjoyed having Henrik Hartmann as a teacher because he seemed to have a lot of experience and was enthusiastic about the topic.
4. Each case of misconduct were discussed with help of real-life stories in this way participation was ensured so now it is easier to remember the possible flaws that can happen. I liked this kind of an approach. There was an exercise based on a real instance of misconduct, which gave a better realization of how things can go wrong.
5. That there was enough room for questions/discussions and that the content was presented in an interesting way. The part about reviews and writing your own paper was also interesting.

#### **Which parts of the course were not so good / not so fitting / not well enough presented?**

1. Although the case study with the drought induction in the Amazon was interesting, I did not find that it contributed much to the topic and, as I do not have an ecology based background, the concepts we were examining were difficult for me to critically evaluate.
2. /
3. Personally, I missed even some more practical examples. I would have enjoyed, if the case studies would have been a bit more out of the "grey zone" so where it wouldn't have been so obvious, that scientific misconduct has happened.
4. The part on misconducts when science is presented to the general public could be discussed more. Though it might not be very relevant in the initial stage of carrier it would be very needed in the future and to have a course then about scientific practices is less likely. I feel if there are legal laws that enforce good scientific practice, then they could be discussed as well.
5. The example of 'bad science' (tree study) seemed to be a little bit too obvious. And the other example (medicine example) was a little bit out-dated and not really relevant for us in our field. I would suggest do use more recent studies and more controversial ones, e.g. the study by Crowther's lab in Science about the global tree planting potential. It would also help if the participants can read the paper in advance to be more familiar with the study and to discuss the aspects of it in more detail within the course.

#### **Do you have other suggestions for a future seminar on good scientific practice?**

1. I would suggest a case study in an ethically grey area to provoke thoughtful debate. A case that could be used for this is polywater where some scientists thought they had found a new form of water which eventually turned out to simply be contaminated water but, before this revelation, caused panic in the media and led to many resources being used simply for the slow production of contaminated water. There was

even a publication in a respected journal by a respected scientist that incorrectly assigned an already assigned and well-known peak to this "new" water.

2. It will be more interesting if giving some methodological and statistical issues to learn.
3. One suggestion would be to put stronger emphasis also on Open Access publishing and also how open scientific workflow in the future can/will improve the trustworthiness in science.
4. Time distribution between the topics can be taken care of so that there wouldn't be a need to rush out at the end.
5. The part about web of science was interesting, yet, everyone is supposed to have a meeting with Kirsten about web of science anyway. So to me, this was a little bit redundant. Instead, a session about e.g. open access would be probably of more interest/relevance within the scope of this course.