

## 8 Reproducible Research things

### Practical workshop to get people along the Reproducibility path

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#### DESCRIPTION

The idea that you can duplicate an experiment and get the same conclusion is the basis for all scientific discoveries. Reproducible research is data analysis that starts with the raw data and offers a transparent workflow to arrive at the same results and conclusions. However, often studies are not replicable due to lack of information on the process.

Therefore reproducibility in research is extremely important. Reproducibility directly impacts the credibility of a published study ensuring transparency and integrity of research outcomes.

Researchers genuinely want to make their research more reproducible, but sometimes don't know where to start or are not aware that best practice guidelines might exist. Often researchers don't have the available time to investigate unless there is a direct payoff. Therefore highlighting where methods on reproducible research can speed up everyday work and/or the benefits of automation can encourage attendees to get onboard.

We aim for the philosophy "Be better than you were yesterday". Reproducibility is a process, and we highlight there is no expectation to go from beginner to expert in a single workshop. Instead we offer ways to take the next step down the reproducibility path.

#### SCENARIOS

This workshop focuses on common scenarios such as losing a key member of your lab, misplacing a hard drive, or having your study reproduced or challenged by an external group. These scenarios are complemented with methods (reproducible 'things') that researchers can use to be prepared for these scenarios. The workshop methods are organized into Beginner, Intermediate and Advanced levels for users to make their research process more efficient and effective than yesterday. Resources to continue their learning post-workshop are also provided.

As this workshop would be applicable to any researcher or institute, we have released the workshop on Github written in markdown for use for others under a Creative Commons licence.

## **FURTHER INFORMATION**

Link to repository: <https://github.com/guereslib/Reproducible-Research-Things>

## **BIOGRAPHY**

Amanda Miotto is a Senior eResearch Analyst and Software Developer for Griffith University and QCIF. She started off in the field of Bioinformatics and learnt to appreciate the beauty of science before discovering the joys of coding. She is also heavily involved in Software Carpentry, Hacky Hours and ResBaz, and has developed on platforms around HPC and scientific portals.

Julie has worked in academic libraries for 23 years and is currently a Library Research Specialist at Griffith University. Julie is passionate about research data management practices and has just published her first co-authored journal article. Previously, Julie co-facilitated the Australian National Data Services 23 Things (research data) Health and Medical Data Community Group webinar series and is a current member of the Queensland University Libraries Office of Cooperation (QULOC) Research Support Working Party.