**How to write a paper/report/thesis**

Aims to set out some procedures to make publication of scientific work easier.

Publication is required for everyone at all stages of research, there are several different types of publication which very depending on audience and importance, but they all share essentially the same stages:

* Collection of data
* Planning of Manuscript
* Initial draft
* Collaborative improvements/editing
* Publication

Aside from the initial collection of data, the collaborative improvements and editing is often the most time consuming and complex stage. This tutorial aims to present some strategies to streamline the process.

**Problems of scientific writing**

1. Organisation

Many files are collected, the directory system can become quite a mess

**Solution: A standard directory structure**

1. Version control

It is good to keep previous versions to refer to, especially when making collaborative changes

**Solution: VCS, GitHub, GitHub Desktop**

1. Typesetting

It is hard to make a good-looking document. Various journals have different requirements (mostly LaTeX).

**Solution: LaTeX, Overleaf**

1. Citations

It is very important to cite the work of others where we have used it. However, citations can take a lot of time to get set up, to maintain and to typeset.

What if a Journal requires different citation formatting?

How can I speed up the download of citations?

**Solution: BibTeX, JabRef, DOIs**

1. Figure preparation

It is important that figures look professional. High level tools to work with figures are often expensive. Figures are stored as images and so lose the connection with the data, this makes them harder to edit and revise in the future.

**Solution: Python, Matplotlib, PDFs, Inkscape, GIMP**