

## Open Notebook research

## Open notebook research?

*‘Open notebook science is the practice of making the entire primary record of a research project publicly available online as it is recorded. This involves placing the personal, or laboratory, notebook of the researcher online along with all raw and processed data, and any associated material, as this material is generated.’*  
- [https://en.wikipedia.org/wiki/Open\\_notebook\\_science](https://en.wikipedia.org/wiki/Open_notebook_science).

# Examples

- Caleb McDaniel
- Carl Boettiger
- Paper based notebook
- <https://notebook.andrewheiss.com/project/diss-ingos-in-autocracies/survey-completion-rates/>

# More than a blog?

- Documentation
- Data sharing
- Code sharing
- Help facilitate citizen science
- Can be integrated into existing research processes

# Disciplinary differences in approach

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- How do you work?
- Teams or individual projects?

## How open?

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- Consider what is useful for others
- The intention to be open could help improve your research practices

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- Reproducibility, citizen Science, collaboration tool?

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- Documentation
- Facilitate collaboration

## Pre-registration

*'Preregistration of an analysis plan is committing to analytic steps without advance knowledge of the research outcomes. That commitment is usually accomplished by posting the analysis plan to an independent registry such as <http://clinicaltrials.gov/> or <http://osf.io/>. The registry preserves the preregistration and makes it discoverable, sometimes after an embargo period. With preregistration, prediction is achieved because selection of tests is not influenced by the observed data, and all conducted tests are knowable. The analysis plan provides constraint to specify how the data will be used to confront the research questions.'* - <https://dx.doi.org/10.17605/OSF.IO/2DXU5>

# Preparing to share?

- Organization

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- Organization
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- Documentation
- File formats

# Documentation

## For your notebook

- What is your notebook for?

## For your teams

- Outline protocols
- Record progress
- Data Management Plan

## For other people

- Explain your research process
- Develop guidance on using your data or code

# Licensing

A license tells other people what they can do without having to ask you.

## Licensing publication

- Often defined by journal policies
- Your funder may require a particular license



## Licensing data

- Do you have copyright over your data?
- Use a standard license e.g. Creative Commons
- Community standards Pollar Commons

## Licensing software

- Choose an existing license
- Does your software reuse code?

# Version control

Use some type of version control system for your data, code and other documentation.

## Manual approaches

- Systems for file naming e.g. 2017-10-07-documentation

## Automated version control

- GitHub
- Open notebooks
- Electronic lab notebooks

# Attribution

- Make your material citable
- Cite software, code and data you use

# Dissemination

- Use a persistent identifier (DOI)
- Cite data, software and other materials in publication

## Open Science Framework

*The Open Science Framework is a project of the Centre for Open Science with funding from a wide range of funders. The Open Science Framework aims to make Open Science easier for researchers by providing a platform for hosting, documentation, data, notebooks and linking to a range of other tools.*

Setting up a notebook. . .