Open Science Guide

By Vadim Bogatyr (09/2022)

I've compiled this document to make it easier for you to engage in OS practices, find information about OS and implement OS tools. Hope it helps and let's make science accessible together!

Part I: What can YOU do?

Working on a project:

- Do due diligence and ensure reproducibility of your data
- Present your data at conferences
- Use Free Open-Source Software (FOSS) to be more inclusive to people behind the paywall of the license fee

Publishing a paper:

- Share early results as pre-prints
- Make you data available in public repositories
- Post your scripts, algorithms and analysis
- Publish in Open Access journals
- If you have published a Closed Access paper, contact VU Open Science to make it available using Taverne Amendment

Science Communication

- Engage in science communication
- Write about your science project/poster/paper online (Twitter, Linkedin, Instagram)
- Use analogies and non-gatekeeping language when talking to people without scientific background or from another field
- Invest some time in creating beautiful and informative visualizations
- Un-disappoint your parents and finally make them understand what are you doing in the basement for 4 years

Teaching OS values

- If you are a reviewer, ask the authors to publish their raw data and scripts; talk about it as a requirement for a good scientific work, not an extra thing to do
- If you are a PI, talk to your PhDs/Postdocs about the Open Science practices and importance of ensuring the accessibility of their research; when working on their first paper encourage them to post pre-print, analysis scripts and datasets online
- If you are a PhD/Postdoc, teach these practices to your BSc/MSc students about this and show them on your own example (i.e. publish their thesis data and analysis script together)

Part II: Links

FOSS programs and tools:

- Analysis: Matlab -> Python - Anaconda, system for scientific computing; Spyder, integrated development environment; Jupiter Notebook - block-base web development environment
- Plotting: Origin Lab -> SciDAVis, Veusz, matplotlib and seaborn for Python

- Image analysis: Fiji Is Just ImageJ
- Vector graphics: Inkscape
- Literature: Mendeley -> Zotero - better functionality overall; get free storage on pCloud using WebDAV; easy migration manual

Extensive scientific FOSS guide

Public data repositories:

DataverseNL - Online storage, sharing and registration of research data, during the research period and after its completion

DANS KNAW- Dutch national centre of expertise and repository for research data, intended for researchers, research institutions, research funders, data professionals and other archives, to help with (background information about) the sustainable storage and sharing of data

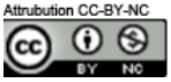
Open access journals:

DOAJ - Directory of open access journals with information about APFs, copyright, ownership, etc.

bioarXiv and copyright:

bioaRxiv submission guide – including info on the option to submit bioRxiv preprint directly to some journals

Pre-print policies of publishers

○	No reuse/adaptation without permission 	Anyone who wishes to share, reuse, remix, or adapt this material must obtain permission from the corresponding author.
○	Attribution CC-BY-NC-ND 	Anyone can share this material, provided it remains unaltered in any way, this is not done for commercial purposes, and the original authors are credited and cited.
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○	**CC0 (non-Gov't)**	The paper is placed in the public domain and no longer restricted by copyright. Anyone can legally share, reuse, mix, or adapt this material for any purpose without crediting the original authors.
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Science communication:

Organization:

SciComm - Science communication community that helps connect with other communicators and organizes events

Events:

National Science Communication day - a new NWO event (Dutch); 10th of October 2022; Den Haag

Public Communication in Science and Technology 2023 - 11-14th of April 2023; Rotterdam

Pint of Science - Yearly SciComm festival that takes places in bars all over the world (Twitter: @pintofsciencenl)

Falling Walls - Worldwide research pitching competition
Open Science Festival - National Open Science Festival; probably September 2023; Amsterdam

Podcast:
Road to Open Science Podcast - What is Open Science and what can it do for research? The new Road to Open Science podcast follows the path to open science through the perspective of researchers. It covers various aspects, from practicalities to policies and philosophies.

Educational platform:
The FOSTER portal is an e-learning platform that brings together the best training resources addressed to those who need to know more about Open Science, or need to develop strategies and skills for implementing Open Science practices in their daily workflows. Here you will find a growing collection of training materials. Many different users - from early-career researchers, to data managers, librarians, research administrators, and graduate schools - can benefit from the portal. In order to meet their needs, the existing materials will be extended from basic to more advanced-level resources. In addition, discipline-specific resources will be created.