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Open Science Training Handbook

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FOSTER - The Project (2014 - 2016)

‘Facilitate Open Science Training for European Research’

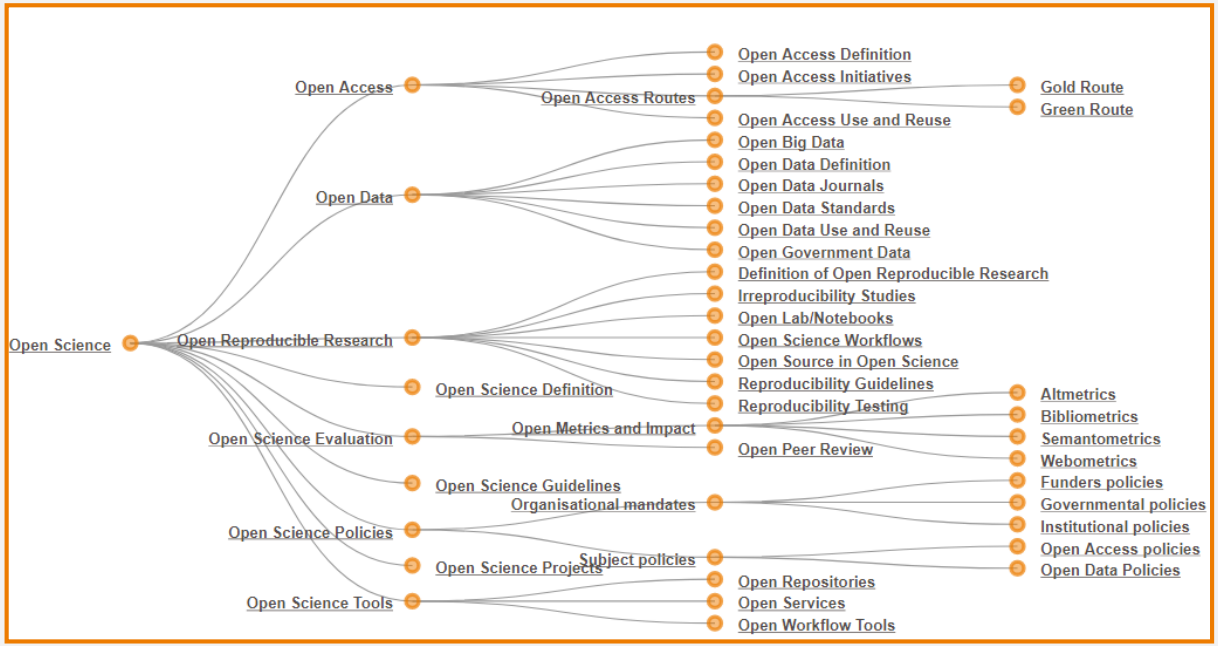
- Raise awareness about Open Science
- Facilitate Open Science training
  - F2f trainings
  - Online courses
- Creation of the FOSTER portal

Open Science Taxonomy

Definition

of Open Science

2000+ training materials, categorized in the FOSTER portal according to the taxonomy



Paper available at http://oro.open.ac.uk/44719/. Image available at http://oro.open.ac.uk/47806/

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What is Open Science?

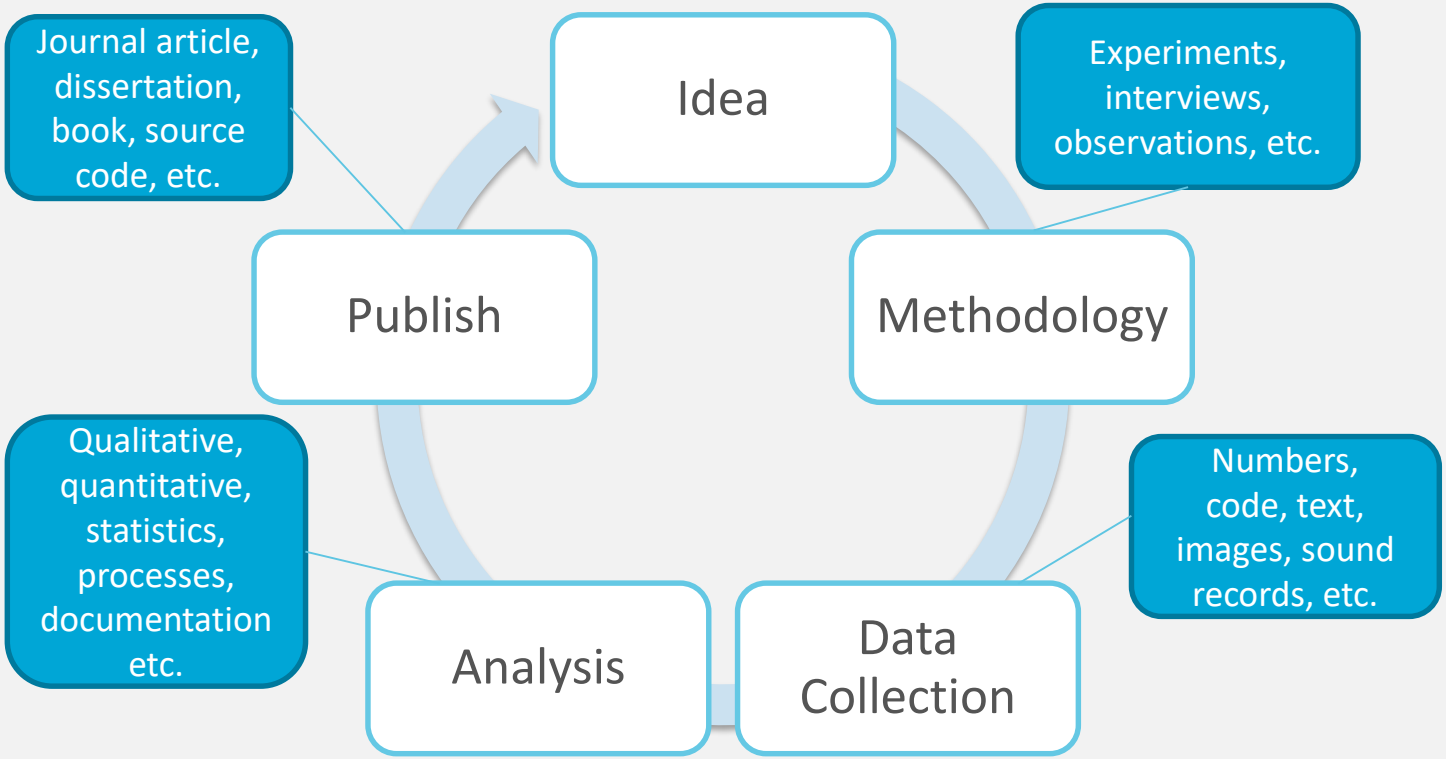
Open Science is the practice of science in such a way that others can collaborate and contribute, where research data, lab notes and other research processes are freely available, under terms that enable reuse, redistribution and reproduction of the research and its underlying data and methods.

[FOSTER, Open Science Definition: https://www.fosteropenscience.eu/foster-taxonomy/open-science-definition]

The movement to make scientific research, data and dissemination accessible to all levels of an inquiring society.

[FOSTER, Open Science Definition https://www.fosteropenscience.eu/taxonomy/term/7]

Open Science along the research lifecycle



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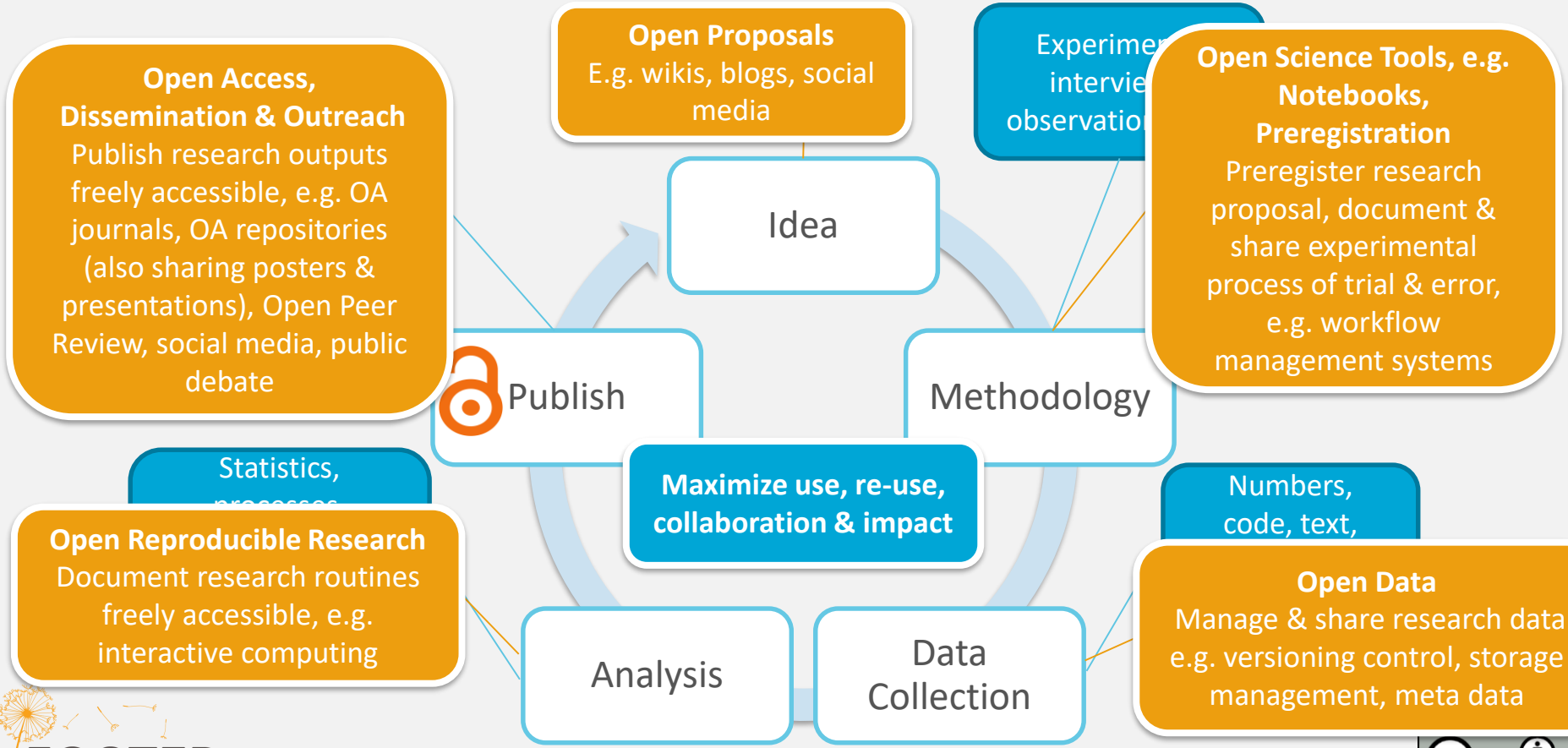
Opening up the research life cycle



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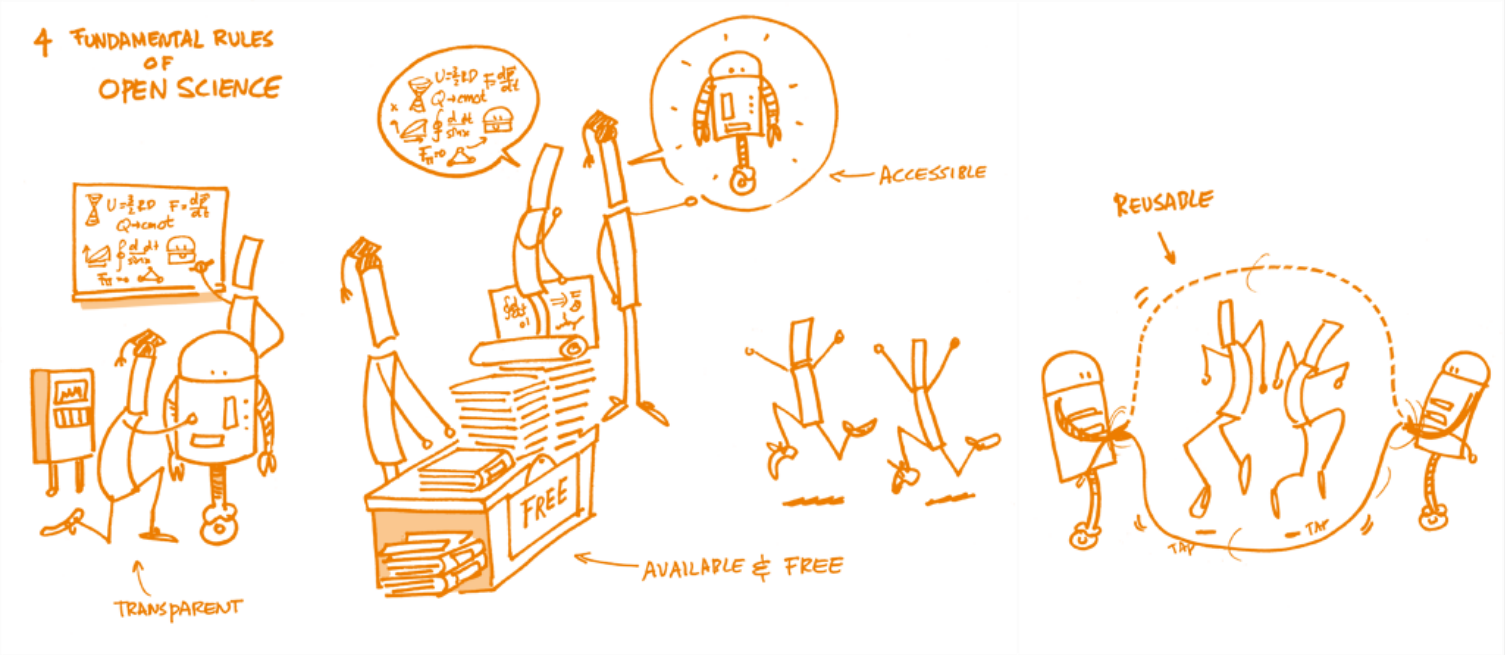

Open Science Training Handbook. https://book.fosteropenscience.eu/

Basic tools

- Digital Object Identifiers (DOIs)
- Rich meta data
- Long-term archiving e-infrastructure

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Benefits of Open Science

- Increasing efficiency of research
  - i.e. avoiding duplication of effort & reducing data collection costs
- Promoting scholarly rigor & quality of research
  - i.e. providing data available for peer review
- Enhancing visibility & scope for engagement
  - across research community
  - new possibilities for citizen science & public engagement
- Enabling researchers to ask & address new research questions
  - i.e. aggregate and re-analyse data from wide range of sources

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[Source: Open To All? Case studies of openness in Research
http://www.rin.ac.uk/system/files/attachments/NESTA-RIN_Open_Science_V01_0.pdf]

Benefits of Open Science

- Inducing collaboration & community-building for the sharing of knowledge and expertise
  - across institutional, national and disciplinary boundaries

[Source: Open To All? Case studies of openness in Research http://www.rin.ac.uk/system/files/attachments/NESTA-RIN_Open_Science_V01_0.pdf]

- Fostering inclusivity, participation & application of research
  - opportunities for society
- Increasing the economic & social impact of research
- Complying to funders' requirements
  - e.g. European Commission

[Report URL: https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf]

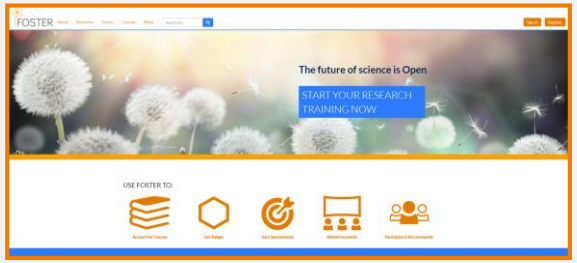
FOSTER Plus - The Project (2017 – 2019)

‘Fostering the practical implementation of Open Science’

Activities

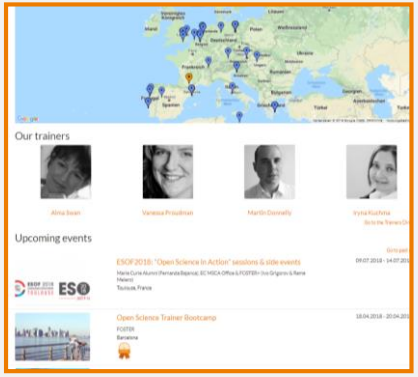
- Train researchers in Open Science with focus on practical implementation (f2f & online)
- Strengthen the training capacity

FOSTER Plus resources



www.fosteropenscience.eu

Events calendar



Focus: practical implementation & discipline specific content

New courses

www.fosteropenscience.eu/toolkit

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Open Science training capacity

→ ‘train the trainer’ approach

Open Science

Trainer Bootcamp

3 day workshop for new Open Science trainers

& multiplier effect

Open Science

Training Handbook

resource to support Open Science trainer community

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The Open Science Training Handbook

- Idea: bring experienced Open Science trainers together to write a book
- Organisation of Book Sprint in February 2018, Germany

- August 2017: Call for applications (39 applications)

- Selection based on:
  - Open Science expertise, training experience, scientific background & motivation
  - balance of gender, region, disciplines & expertise

14 experts invited as authors

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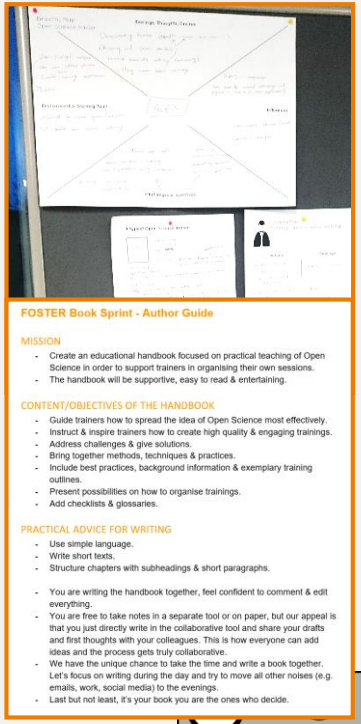
The Open Science Training Handbook

- Guide on how to forward knowledge on Open Science

- Book Sprint format
  - ensured a finished book in only a few days
  - FOSTER provided writing environment (room, food, tools, moderation, author guide, methods etc.)



FOSTER Book Sprint - Author Guide

MISSION

- Create an educational handbook focused on practical teaching of Open Science in order to support trainers in organising their own sessions.
- The handbook will be supportive, easy to read & entertaining.

CONTENT/OBJECTIVES OF THE HANDBOOK

- Guide trainers how to spread the idea of Open Science most effectively.
- Instruct & inspire trainers how to create high quality & engaging trainings.
- Address challenges & give solutions.
- Bring together methods, techniques & practices.
- Include best practices, background information & exemplary training outlines.
- Present possibilities on how to organise trainings.
- Add checklists & glossaries.

PRACTICAL ADVICE FOR WRITING

- Use simple language.
- Write short texts.
- Structure chapters with subheadings & short paragraphs.

- You are writing the handbook together, feel confident to comment & edit everything.
- You are free to take notes in a separate tool or on paper, but our appeal is that you just directly write in the collaborative tool and share your drafts and first thoughts with your colleagues. This is how everyone can add ideas and the process gets truly collaborative.
- We have the unique chance to take the time and write a book together. Let's focus on writing during the day and try to move all other noises (e.g. emails, work, social media) to the evenings.
- Last but not least, it's your book you are the ones who decide.

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BY

The Open Science Training Handbook

- Authors brought
  - time, knowledge, experience, writing skills, motivation & endurance with them

- Within five days: a book of 200 pages was written

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The Open Science Training Handbook

Roadmap

- **Writing** the OSTH - Feb. 2018
- **Pre-release** available for comments & suggestions – Feb. 2018
- Discussing & including suggestions by community - March 2018
- Moving the OSTH to Github
- Finalizing everything for version 1.0
- **Release of OSTH 1.0 as Gitbook** - April 2018

- Now:
  - Living handbook open for contributions
  - Complementing the OSTH with webinars

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OSTH - Structure

- Introduction
- Open Science Basics
  - Open Concepts & Principles
  - Open Research Data & Materials
  - Open Research Software & Open Source
  - Reproducible Research & Data Analysis
  - Open Access to Published Research Results
  - Open Licensing & File Formats
  - Collaborative Platforms
  - Open Peer Review, Metrics & Evaluation
  - Open Science Policies
  - Citizen Science
  - Open Education Resources
  - Open Advocacy
- On Learning & Training
- Organizational Aspects
- Examples & Practical Guidance
- Glossary
- References
- About the Authors & Facilitators

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Open Science Basics

- What is it?
- Rationale
- Learning objectives
- Key components: Knowledge & skills
- Questions, obstacles, & common misconceptions
- Learning outcomes
- Further reading

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On Learning and Training

- Training vs. teaching
- Strategies
- Expectations
- Target audiences
- Motivations
- Practical Guidance
- Designing a course
- Advice for before, during and after the training
- Further reading

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Organizational aspects

- Training format
- Audience, guest speakers, and partners
- Venue
- Timing
- Budget
- Equipment & media
- Marketing & advertising strategy
- Registration
- Communication
- Catering

- Code of conduct
- Certification of attendance
- Signs
- Social Media & notes
- Event closure
  - Venue
  - Debrief
  - Evaluation
  - Dissemination
- Check list

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Examples & Practical Guidance

- Example training structures
- Types of exercises
- 24 example exercises:
  - Format, time needed
  - Topic
  - Learning objectives
  - Exercise description
  - Materials and tools needed
  - Level of prior knowledge needed
  - Things to bear in mind
  - How to adapt for other purposes

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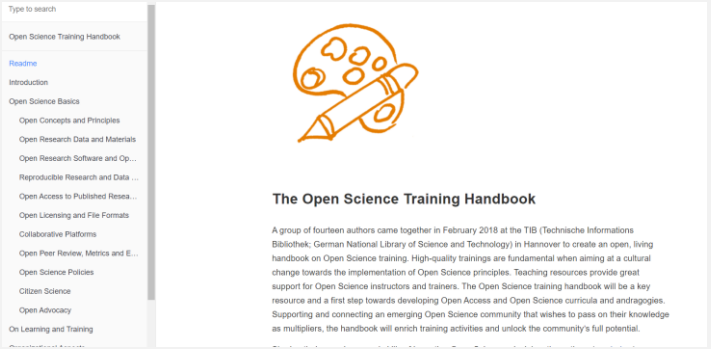
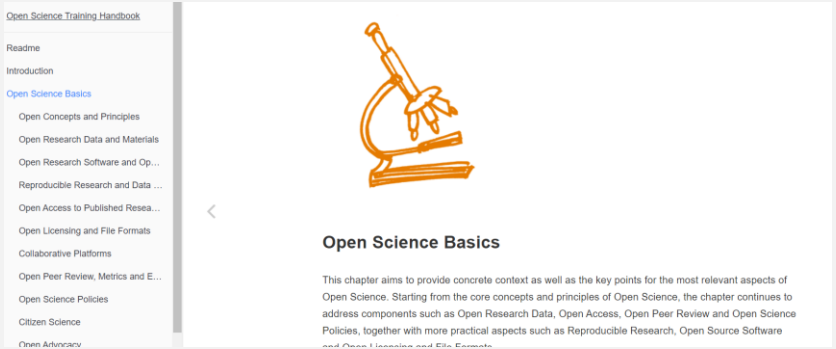
Open Science Training Handbook

- Now available as GitBook
- CC 0 license to enable simple re-use





book.fosteropenscience.eu

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Contibute and cite the OSTH

- Comment or contribute directly via Github/Gitbook
- We'd love to hear from you if you are considering a translation!

- Please consider citing the handbook refering to
  - https://book.fosteropenscience.eu/, the most friendly way to read the book (also available as PDF, ePub and Mobi), to comment and to suggest changes, or
  - https://doi.org/10.5281/zenodo.1212496, a citable DOI for an archived dump of the book

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Thanks!

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