Training Resources on Open Science

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Open Science: key issues and future prospects
EKT & OpenAIRE National Event
VISION

Building upon the solid foundation provided by the previous FOSTER project, support **individual researchers and research performing organisations** to move beyond simply being aware of them to being able to apply **Open Science (OS) approaches in their daily workflows**.
The adoption of Open Science approaches has been quite limited to date. General awareness of OS approaches has greatly improved among EU researchers... ... but there is still a lack of practical guidance and training to help researchers learn how to open up their research processes and results.
Spread the Seeds!
FOSTER Plus

In order to address this skills gap we will:

Organise specific training for researchers and academics focusing on key skills fostering the Open Science culture targeting all relevant stakeholders with a view to permitting them and their organisations to fully implement the practical OS aspects.

targeting three specific scientific disciplines - life sciences, social sciences and humanities.

Collaborate with initiatives and projects (RIs, OpenAIRE, EUDAT, FIT4RRI, etc.) on the co-creation of materials and events.
FOSTER Plus

FOSTER plus project is building upon previous FOSTER work and results...
2000+ Training materials, categorized in the FOSTER Portal
Open Science Taxonomy
Learning Objectives for Target Groups/Stakeholders

More than 100 face2face training events in 28 countries and 25 online courses, totalling more than 6300 participants

http://fosteropenscience.eu
The FOSTER Portal
The FOSTER Portal

Organized according with the Open Science Taxonomy

For each Topic the Portal presents the associated:

– Resources
– Events
– Courses
Learning Objectives

By choosing a topic by stakeholder, then the objectives, the course creator needs just to define the learning activities to be done by learners.
## Learning Objectives

- [https://goo.gl/XAk00v](https://goo.gl/XAk00v)

<table>
<thead>
<tr>
<th>TOPICS (following the Research Lifecycle)</th>
<th>CORE LEARNING ELEMENTS</th>
<th>LEARNING OBJECTIVES (as basis for a LEARNING PLAN)</th>
<th>STAKEHOLDER</th>
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</thead>
<tbody>
<tr>
<td><strong>Open Science</strong></td>
<td>Define the concept of Open Science</td>
<td>Define relevance of OS tools to Reproducibility/Integrity of Research</td>
<td>Graduate Students</td>
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<td></td>
<td></td>
<td>Identify OS tools for each step of the Research Lifecycle</td>
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<td>Apply OS concepts to your daily research processes</td>
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<td></td>
<td>Discuss OS &amp; Reproducibility role in Innovation &amp; Economic Growth</td>
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<tr>
<td><strong>Open Reproducible Research</strong></td>
<td>Define relevance to Reproducibility</td>
<td>Identify OS tools for each step of the Research Lifecycle</td>
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<tr>
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<td>Define relevance of OS tools to Reproducibility/Integrity of Research</td>
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<tr>
<td><strong>Justify Openness as a Reproducibility Tool</strong></td>
<td>Apply OS concepts to your daily research processes</td>
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<td>Discuss OS role in Peer-Review Process</td>
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<td></td>
<td></td>
<td>Discuss OS &amp; Reproducibility role in Innovation &amp; Economic Growth</td>
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<tr>
<td><strong>Open Research Data (ORD)</strong></td>
<td>Open Big Data</td>
<td>Define Open Big Data concept</td>
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<td>Identify services based on Open Big Data</td>
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<td><strong>Open Data Definition</strong></td>
<td>Open Data Definition</td>
<td>Define Open Data</td>
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<td>Demonstrate the advantages of Open Data</td>
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<td><strong>Open Data Journals</strong></td>
<td>Open Data Journals</td>
<td>Identify existing Open Data Journals</td>
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<td>Prepare a publication for an Open Data Journal</td>
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<td><strong>Open Data Standards</strong></td>
<td>Open Data Standards</td>
<td>Identify existing Open Data Standards</td>
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<td></td>
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<td>Use Identifiers for archiving &amp; citing research data</td>
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<tr>
<td><strong>Open Data use and reuse</strong></td>
<td>Open Data use and reuse</td>
<td>Understand of linked data</td>
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<td>Select &amp; Use licences (e.g., CC) for datasets</td>
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<td>Comply with Horizon2020 Open Research Data Pilot</td>
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FOSTER Training Content

Presentations
Guides
Publications
Videos
Training

More than 100 face2face training events in 28 countries and 25 online courses, totalling more than 6300 participants
Elearning courses

Self-learning or Moderated

https://www.fosteropenscience.eu/courses
How it Works now...

Content is uploaded on the Portal and organized to fit the FOSTER Portal requisites.

Then the contents can be reused individually, on face-to-face courses or e-Learning courses.

The content from these new courses should be uploaded on the Portal!
Overview

Building on the partners’ experience and relevant results from the previous FOSTER project, we will:

● conduct a wide-ranging training programme, facilitating self-directed online learning using the Open Science Toolkit, blended and moderated e-learning courses through the FOSTER Portal, and a variety of face-to-face events;
● provide discipline/community specific training, addressing actual knowledge and skills gaps, and building capacity for the practical adoption of OS culture;
● work in collaboration with associated partners, Research Infrastructures and related projects such as EUDAT, OpenAIRE, FIT4RRI, OpenUP, LEARN, OpenMinted, …;
● support a trainers network by delivering train-the-trainer sessions and incentivizing OS ambassadors through gamification tools on the FOSTER portal;
● assign digital badges and certificates to reward learners and further foster the culture change.
General Objectives

Contribute to a real and lasting shift in the behavior of European researchers to ensure that OS becomes the norm in Horizon 2020 and beyond.

Provide high quality training materials and events, addressing the current skills and content gaps, both at community/discipline and institutional levels.

Reach all relevant stakeholders in the European Research Area (ERA), with a focus on researchers, in particular young scientists and students. They will be targeted directly and via intermediaries (e.g. research support staff including librarians, research administrators, lab technicians).
Specific Objectives

1. To support a culture change, whereby the practical aspects of Open Science are fully implemented and ultimately rewarded, by providing an advanced-level, outcome-oriented training programme based on courses and activities for which participants can attain digital badges.

2. To consolidate and sustain a training support network comprised of Open Science ambassadors from a range of research performing organisations and research infrastructures.

3. Strengthen the training capacity by addressing the current skills and content gaps, both at community/discipline and institutional levels, on the practical implementation of Open Science.
Specific Objectives

1. To support a culture change, whereby the practical aspects of Open Science are fully implemented and ultimately rewarded.
   - **50 face-to-face training events** will be organised, reaching over 1,500 participants being not only aware of OS but able to implement it in their daily workflows;
   - **20 e-learning courses**, reaching over 3,000 participants, will be conducted, from which a third (at least 7) will be moderated courses;
   - Training materials and events will focus on providing practical, outcome-orientated lessons to engage participants and assist them to adopt new practices;
   - **The FOSTER+ trainers network** will equip members with the materials needed to be effective OS ambassadors and encourage others to adopt new ways of working;
   - **Advocacy material and campaigns** will promote the uptake of Open Science and be distributed at least 100 events (including the above), through various social media channels and a newsletter reaching at least 4,000 participants and subscribers
Specific Objectives

2. To consolidate and sustain a training support network

- A consolidated and extended network of trainers will bring together at least 50 trainers which cover Open Science training topics from various perspectives, and involving at least three disciplinary communities (humanities, social sciences, and life sciences).
- **6 train the trainers events, including an Open Science Trainer Bootcamp**, reaching 150 participants will be organised; and in their follow-up training events they will assist in reaching out to 4,500 participants;
- **1 book sprint creating a living Open Science Training Handbook** engaging with at least 15-20 trainers, combined with a series of 7-10 topical video lectures reaching out to at least 300 participants (targeting trainers and early-career researchers).
3. **Strengthen the training capacity (...) both at community/discipline and institutional levels, on the practical implementation of Open Science**

- A **multi-module Open Science Toolkit** will be created that explains Open Science concepts and provides practical, outcome-oriented lessons to increase the uptake of OS in practice;
- A minimum of **20 e-learning courses** will be created comprising engaging, interactive content to support self- and blended learning;
- **150 new intermediate and advanced level training resources** will be created and deposited in the FOSTER Portal.
Project Structure & Management
Strategy and Workplan

Year 1 (May 2017 - April 2018) will focus on developing the OS Toolkit, update the FOSTER Portal to support moderated learning, badging and gaming, run the Open Science Bootcamp and initial face to face training.

Year 2 (May 2018 - April 2019) we will develop/support the FOSTER Trainer Network, run an intense training calendar, including moderated learning in the FOSTER Portal, release the Open Science training handbook.
More details
Stakeholders
Stakeholders

- Academic staff; young scientists; policy-makers; funding bodies
- SME’s
- National Contact Points
- Young Scientist associations and groups
Disciplines

- **GESIS (CESSDA) - Social Sciences**
  - New data protection regulation (tutorial)
  - Data reuse (tutorial)

- **CRG - Life Sciences**
  - Open Data and Method Management (course)
  - Reproducible data (course)

- **UGOE - DARIAH-EU) - Humanities**
  - Humanities Publishing (module)
  - Data Management (module)
Open Science Trainer Bootcamp

- Trainers with high multiplier potential
- Focus on researchers & intermediaries
- Multiple days
- Call to choose 20-30 participants (very soon !)
- Promote a network of “FOSTER plus” trainers
Open Science Toolkit

- Multi-module (Open science; responsible research & innovation; text and data mining; reproducible research; RDM; ...)
- Practical examples & use cases
- Disciplinary skins (CRG; GESIS; DARIAH)
- Other languages
Open Science Handbook
Open Science Training Handbook

- Methods, background information and examples of training outlines.
- Live document - updated during the project (based on writing plan)
- Include Video Lectures
- Collaboration with TIB - German National Library of Science and Technology
eLearning
eLearning Courses

- With a new Learning Management System (Moodle)
- eLearning or blended learning
- Materials available in open standards for reuse
- Open Licenses for the courses/contents
- 20 eLearning courses
Concept of Specializations/Learning Paths
Concept of Specializations/Learning Paths

- Creation of specific curriculum
  - compilation of specific courses and modules for a specific specialization
- Recommendation of learning paths / courses
More on FOSTER plus

- Badging (rewards)
- Gamification
- Update of Content Map
- Update of Learning Objectives
- Update of FOSTER Portal
- Disciplinary views (contents, courses, ... )
- Learning Analytics
Associated Partners

Communities that support FOSTER help to create the network!
Participation in Events

- Check the list of events on FOSTER Portal
- 50 training events for academic staff
- 8 workshops for policy-makers and funding bodies
FOSTER Network & Directory

Update of Directory of Speakers and Trainers
Webinars with OpenAIRE

Series of webinars integrated with OpenAIRE

Check more at: https://www.fosteropenscience.eu/events
## Project Partners

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<thead>
<tr>
<th>Institution</th>
<th>Code</th>
<th>Country</th>
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<tbody>
<tr>
<td>UNIVERSIDADE DO MINHO</td>
<td>UMINHO</td>
<td>Portugal</td>
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<tr>
<td>GEORG-AUGUST-UNIVERSITAT GOTTINGENSTIFTUNG ÖFFENTLICHEN RECHTS</td>
<td>UGOE</td>
<td>Germany</td>
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<tr>
<td>THE OPEN UNIVERSITY</td>
<td>OU</td>
<td>United Kingdom</td>
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<tr>
<td>STICHTING EIFL.NET</td>
<td>EIFL</td>
<td>Netherlands</td>
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<td>THE UNIVERSITY OF EDINBURGH</td>
<td>UEDIN</td>
<td>United Kingdom</td>
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<td>UNIVERSITY OF GLASGOW</td>
<td>UGLA</td>
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<tr>
<td>DANMARKS TEKNISKE UNIVERSITET</td>
<td>DTU</td>
<td>Denmark</td>
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<td>STICHTING LIBER</td>
<td>LIBER</td>
<td>Netherlands</td>
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<td>AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS</td>
<td>CSIC</td>
<td>Spain</td>
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<tr>
<td>GESIS - LEIBNIZ INSTITUT FUR SOZIALWISSENSCHAFTEN e.V.</td>
<td>GESIS</td>
<td>Germany</td>
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<tr>
<td>FUNDACIO CENTRE DE REGULACIO GENOMICA</td>
<td>CRG</td>
<td>Spain</td>
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Thanks!

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