

D4.2 Toolkit for Training Sessions

WP4 - Training

EIFL



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SUMMARY

The FOSTER project aims to support different stakeholders, especially young researchers, in practicing open access, open data sharing and open science.

More specifically, the FOSTER objectives are to:

- Support different stakeholders, especially young researchers, in adopting open access in the context of the European Research Area (ERA) and in complying with the open access policies and rules of participation set out for Horizon 2020;
- Integrate open access principles and practice in the current research workflow by targeting the young researcher training environment;
- Strengthen the institutional training capacity to foster compliance with the open access policies of the ERA and Horizon 2020 (beyond the FOSTER project);
- Facilitate the adoption, reinforcement and implementation of open access policies from other European funders, in line with the European Commission's (EC) recommendation, in partnership with the PASTEUR4OA project (<http://pasteur4oa.eu>).

Our key target audiences are the following: academic staff (researchers) and students, institutions (administrator and librarians), research project managers and policy-makers.

They define the structure of this document, consisting of four major sections:

- Training sessions for academic staff (researchers) and students;
- Training sessions for institutions (administrators and librarians);
- Training sessions for research project managers and
- Training sessions for policy-makers and staff working in funding bodies.

This training kit provides a number of tested and proven guides for organizing training events. It summarizes good practice experiences in hosting FOSTER training sessions for different stakeholders and provides recommendations for those who would like to organize similar training events.

A list of FOSTER co-funded training programmes is available here:

<http://www.fosteropenscience.eu/events> and a list of FOSTER speakers is here:

<http://goo.gl/40hsYV>.

BEST PRACTICES

Based on the experiences from the first FOSTER call for training events on open access, open research data and open science (conducted in 2014), we have identified some best practices when organising training sessions, based on the target audience(s) and the type(s) of trainings.

Expert talks on open access, open research data, policy landscape and copyright and other legal issues are highly appreciated by all the stakeholders – and are considered a necessity, regardless of the audience level of knowledge.

In addition, **researchers and students** respond best to practical workshops and exercises that include group work conducted by experts or by peers. Information on how to incorporate open science in their daily workflows (including tools presentations) is popular as well.

Project managers, policy makers and funders seem to be more interested in panel sessions, where they can hear different views on the topics. They are less interested in practical workshops on research workflows.

Librarians and research administrators tend to attend all types of training sessions – depending on their interests and job descriptions.

Providing e-learning materials (good-quality recordings of the presentations from on-site events, practical exercises and follow-up courses) is essential as well as dissemination of the training materials for use and re-use.

TYPES OF TRAINING SESSIONS

We have identified six types of training sessions:

1. **Expert talk:** ‘ex cathedra’ talk by an external expert on the subject, preferably followed by Q&A.
2. **Talk by peers:** experience-based talk by a peer, preferably followed by Q&A.
3. **Panel session:** panel consisting of three or more experts, preferably with audience engagement.
4. **Workshop:** informal, hands-on session lead by an expert. Can be aimed at creation of tools/policies or just include practical exercises.
5. **Group work/Break-out sessions:** informal sessions where experts and/or peers share knowledge and/or experiences.
6. **E-learning:** using online educational technologies for learning and teaching (online courses, webinars, etc.).

Most of the events featured in this report are a combination of two or more types of training sessions listed above.

Audience	Expert talk	Talk by peers	Panel session	Workshop	Group work/Break-out sessions	E-learning
Students & Academic Staff	X	X	X	X	X	X
Administrators & Librarians	X	X	X	X	X	X
Research Project Managers	X	X	X		X	X
Policy makers & Funders	X	X	X			X

TRAINING TOPICS

Regardless of the level of expertise of the audience, general introductory talks about **open access, open research data** and **open science** are featured in almost all training sessions, and seem to be considered as an essential for a solid comprehension of the training programme. The same goes for **legal aspects, copyright and licensing** – although they seem to have a more ‘expert’ status and are usually featured further in the programme.

Research data management tools, workflows, plans, standards and policies are currently a hot topic amongst researchers and research administrators, and are therefore prominently featured as well.

Policies and mandates are a subject of interest to all the stakeholders – although the information most relevant for researchers and students is usually already presented in open access and open research data introductory talks.

Sessions about useful **tools** and how to incorporate open science in research **workflows** are, not surprisingly, most popular with audiences who conduct and/or assist the research processes.

Topics from D2.3. Content & learning objectives for all open science target groups:

TOPICS (following the Research Lifecycle)		CORE LEARNING ELEMENTS	LEARNING OBJECTIVES (as basis for a LEARNING PLAN)	STAKEHOLDER				
				Doctoral Students	Researchers	Research Project Managers	Knowledge Managers & Librarians	Funding Agencies
Open Science	Open Science Definition	Define the concept of Open Science	Define relevance of OS tools to Reproducibility/Integrity of Research	o	o	o	o	o
			Identify OS tools for each step of the Research Lifecycle	o	o	o	o	
			Apply OS concepts to your daily research processes	o	o			
			Discuss OS & Reproducibility role in Innovation &		o	o	o	o

	Open Reproducible Research		Economic Growth						
		Define relevance to Reproducibility	Identify OS tools for each step of the Research Lifecycle	o	o	o	o		
			Define relevance of OS tools to Reproducibility /Integrity of Research	o	o	o	o	o	
		Justify Openness as a Reproducibility Tool	Apply OS concepts to your daily research processes	o	o				
			Discuss OS role in Peer-Review Process	o	o				
			Discuss OS & Reproducibility role in Innovation & Economic Growth		o	o	o	o	
		Open Research Data (ORD)	Open Big Data	Define Open Big Data concept			o	o	o
				Identify services based on Open Big Data			o	o	o
			Open Data Definition	Define Open Data	o	o	o	o	o
	Demonstrate the advantages of Open Data			o	o	o	o	o	
	Open Data Journals		Identify existing Open Data Journals	o	o		o		
			Prepare a publication for an Open Data Journal	o	o				
	Open Data Standards		Identify existing Open	o	o	o	o	o	

			Data Standards					
			Use Identifiers for archiving & citing research data	o	o	o	o	
		Open Data use and reuse	Understand of linked data	o	o	o	o	o
			Select & Use licences (e.g. CC) for datasets	o	o	o	o	
			Comply with Horizon2020 Open Research Data Pilot		o	o	o	
		Open Access	Distinguish options for Open Access	Compare Cost/Benefits of Gold and Green Routes	o	o	o	o
	Choose relevant Route based on your context			o	o	o		
	Comply with Horizon2020 Open Access Mandate				o	o	o	
	Recognize the advantages of Open Access		Analyze the social impact of OA	o	o	o	o	o
			Estimate the effect of OA on visibility and impact of research results	o	o		o	
			Identify tools and e-infrastructure for OA	o	o	o	o	
	Reuse existing OA resources		Define the characteristics of an OA publication	o	o	o	o	
			Use different OA search portals	o	o	o		
			Interpret content	o	o	o	o	

	Open Science Tools		licences and copyright							
		Identify Open Science Tools	Identify and choose Open Science Tools for your discipline/project		0	0	0			
			Evaluate existing Open Science Tools		0	0	0			
		Select existing Open Services	Identify and choose existing Open Services related to Open Science	0	0	0	0	0		
			Evaluate existing Open Services	0	0	0	0	0		
		Select Open Workflow Tools	Identify and select Open Workflows Tools	0	0					
			Evaluate existing Open Workflows Tools	0	0					
		Promote outputs of OS projects	Apply lessons learnt for your discipline/project	0	0	0	0	0		
		Open Science Evaluation	Identify Altmetrics & Impact	Identify the suit of Altmetrics for future Research Evaluation	0	0	0	0	0	
				State Pro`s and Con`s of various Altmetrics measures	0	0	0	0		
	Interpret OS contribution to Research Evaluation Assessments (e.g. REF 2020)				0	0	0	0		
	Use of academic			0	0		0			

		Understand Altmetrics & Impact	networks scores						
			Discuss OS contribution to Research Evaluation Assessments (e.g. REF 2020)		o	o	o	o	
		Recognize Open Peer-Review Characteristics	Indicate the pros and cons of the Open Peer Review process	o	o		o		
			Critically compare Open vs Closed Peer-Review in your discipline	o	o		o		
	Open Science Guidelines	Identify Open Science Guidelines	Analyse existing OS Guidelines		o	o	o	o	
			Compare existing OS Guidelines				o	o	
		Apply Open Science Guidelines	Choose a OS Guideline that applies to your discipline/project		o		o		
			Identify the Guidelines requisites		o		o		
			Comply with Horizon2020 Open Access Mandate	o	o	o	o		
			Comply with Horizon2020 Open Research Data Pilot	o	o	o	o		
		Open Science Policies	Identify Open Science policies		o	o	o	o	
			Draft Open Science policies			o	o	o	

		Comply with Horizon2020	Identify the requirements of Horizon2020 Open Access Mandate		o	o	o	o
			Comply with Horizon2020 Open Access Mandate	o	o	o	o	
			Comply with Horizon2020 Open Research Data Pilot	o	o	o	o	
		Monitor Horizon2020 compliance	Define metrics and tools to monitor compliance			o	o	o
			Report level of compliance			o	o	o
		Research Data Management	RDM Plans	Define RDM Plans	Indicate characteristics of the RDM Plans	o	o	o
Appraise the characteristics of a RDM plan to your discipline/project	o				o	o	o	
Prepare a RDM Plan	Create a RDM Plan			o	o	o	o	
	Apply the RDM Plan to your discipline/project			o	o			
RDM Policies	Understand RDM Policies		Identify RDM Policies		o	o	o	o
			Comply with RDM Policies		o	o	o	
RDM Services	Identify RDM services		Identify relevant RDM Services		o	o	o	
			Categorize RDM Services		o	o	o	
	Use RDM services		Integrate RDM services in your		o	o		

			discipline/project/workflow							
			Evaluate & Compare RDM services		o	o	o			
	RDM Standards	Describe existing RDM Standards		Identify existing RDM Standards	o	o	o	o		
				Analyse RDM standards requisites	o	o	o	o		
		Implement existing RDM Standards		Promote RDM Standards in your discipline/project	o	o	o	o		
				Apply existing RDM Standards	o	o				
	RDM Tools	Identify existing RDM Tools		Identify existing RDM Tools	o	o	o	o		
				Compare RDM Tools	o	o	o	o		
		Use RDM Tools		Select relevant RDM Tools	o	o	o	o		
				Evaluate the use of RDM Tools	o	o	o	o		
	Legal Issues	Intellectual Property Rights	Definition of copyright		Define copyright in Open Data, Open Access, Open Science content		o	o	o	
					Define IPR-OS complementarities & conflicts		o	o	o	o
Authors & Publisher rights				Define copyright agreement limits	o	o	o	o	o	
				Amend a copyright agreement	o	o	o	o	o	
			Retain Copyright to a publication	o	o		o			
			Apply Green OA to your	o	o	o	o			

			discipline/project/workflow					
	Law	Identify local copyright laws	Understand copyright laws relevant to your discipline		o	o	o	o
	Licences	Choose appropriate Licences	Differentiate level of access rights	o	o	o	o	
			State types of licences	o	o	o	o	o
		Apply your licence	Apply licence and apply to your content	o	o		o	
Ethics	Ethics	Define ethical limits	Define Open Data limitations to clinical data, patient privacy, national security, IPR	o	o	o	o	o
		Operate within ethical limits	Relate to Responsible Research and Innovation (RRI)	o	o	o	o	o
			Comply with Horizon2020 Open Access Mandate	o	o	o	o	
			Comply with Horizon2020 Open Research Data Pilot	o	o	o	o	

TRAINING SESSIONS FOR ACADEMIC STAFF (RESEARCHERS) AND STUDENTS

We recommend to start with drafting your learning objectives that cover the needs of your target audience. Learning objectives may be expressed as brief statements describing what students/learners should know or be able to do by the end of a defined instructional period. After defining the learning objectives for your context, associate at least one learning activity to each specific learning objective.

Learning objectives for academic staff (researchers) and students (from D2.3. Content & learning objectives for all open science target groups):

TOPICS (following the Research Lifecycle)		CORE LEARNING ELEMENTS	LEARNING OBJECTIVES (as basis for a LEARNING PLAN)
Open Science	Open Science Definition	Define the concept of Open Science	Define relevance of OS tools to Reproducibility/Integrity of Research
			Identify OS tools for each step of the Research Lifecycle
			Apply OS concepts to your daily research processes
			Discuss OS & Reproducibility role in Innovation & Economic Growth
	Open Reproducible Research	Define relevance to Reproducibility	Identify OS tools for each step of the Research Lifecycle
			Define relevance of OS tools to Reproducibility/Integrity of Research
		Justify Openness as a Reproducibility Tool	Apply OS concepts to your daily research processes
			Discuss OS role in Peer-Review Process
			Discuss OS & Reproducibility role in Innovation & Economic Growth
		Open Data Definition	Define Open Data
			Demonstrate the advantages of Open Data
		Open Data Journals	Identify existing Open Data Journals
			Prepare a publication for an Open Data Journal
		Open Data Standards	Identify existing Open Data Standards
			Use Identifiers for archiving & citing research data
		Open Data use and reuse	Understand of linked data
			Select & Use licences (e.g. CC) for datasets
Comply with Horizon2020 Open Research Data Pilot			
Open Access	Distinguish options for Open Access	Compare Cost/Benefits of Gold and Green Routes	

			Choose relevant Route based on your context
			Comply with Horizon2020 Open Access Mandate
		Recognize the advantages of Open Access	Analyze the social impact of OA
			Estimate the effect of OA on visibility and impact of research results
			Identify tools and e-infrastructure for OA
		Reuse existing OA resources	Define the characteristics of an OA publication
	Use different OA search portals		
	Interpret content licences and copyright		
	Open Science Tools	Identify Open Science Tools	Identify and choose Open Science Tools for your discipline/project
			Evaluate existing Open Science Tools
		Select existing Open Services	Identify and choose existing Open Services related to Open Science
			Evaluate existing Open Services
Select Open Workflow Tools		Identify and select Open Workflows Tools	
Promote outputs of OS projects	Evaluate existing Open Workflows Tools		
Open Science Evaluation	Identify Altmetrics & Impact	Apply lessons learnt for your discipline/project	
		Identify the suit of Altmetrics for future Research Evaluation	
		State Pro`s and Con`s of various Altmetrics measures	
	Understand Altmetrics & Impact	Interpret OS contribution to Research Evaluation Assessments (e.g. REF 2020)	
		Use of academic networks scores	
	Recognize Open Peer-Review Characteristics	Discuss OS contribution to Research Evaluation Assessments (e.g. REF 2020)	
Indicate the pros and cons of the Open Peer Review process			
Open Science Guidelines	Identify Open Science Guidelines	Critically compare Open vs Closed Peer-Review in your discipline	
		Analyse existing OS Guidelines	
	Apply Open Science Guidelines	Choose a OS Guideline that applies to your discipline/project	
		Identify the Guidelines requisites	

Research Data Management			Comply with Horizon2020 Open Access Mandate
			Comply with Horizon2020 Open Research Data Pilot
	Open Science Policies	Identify Open Science policies	Identify the different types of OS policies
		Comply with Horizon2020	Identify the requirements of Horizon2020 Open Access Mandate
			Comply with Horizon2020 Open Research Data Pilot
	RDM Plans	Define RDM Plans	Indicate characteristics of the RDM Plans
			Appraise the characteristics of a RDM plan to your discipline/project
		Prepare a RDM Plan	Create a RDM Plan
			Apply the RDM Plan to your discipline/project
	RDM Policies	Understand RDM Policies	Identify RDM Policies
			Comply with RDM Policies
	RDM Services	Identify RDM services	Identify relevant RDM Services
			Categorize RDM Services
		Use RDM services	Integrate RDM services in your discipline/project/workflow
RDM Standards	Describe existing RDM Standards	Identify existing RDM Standards	
		Analyse RDM standards requisites	
	Implement existing RDM Standards	Promote RDM Standards in your discipline/project	
		Apply existing RDM Standards	
RDM Tools	Identify existing RDM Tools	Identify existing RDM Tools	
		Compare RDM Tools	
	Use RDM Tools	Select relevant RDM Tools	
		Evaluate the use of RDM Tools	
Legal Issues	Definition of copyright	Define copyright in Open Data, Open Access, Open Science content	
		Define IPR-OS complementarities & conflicts	
	Authors & Publisher rights	Define copyright agreement limits	
		Amend a copyright agreement	
		Retain Copyright to a publication	

			Apply Green OA to your discipline/project/workflow
	Law	Identify local copyright laws	Understand copyright laws relevant to your discipline
	Licences	Choose appropriate Licences	Differentiate level of access rights
			State types of licences
	Apply your licence	Apply licence and apply to your content	
	Ethics	Ethics	Define ethical limits
Operate within ethical limits			Relate to Responsible Research and Innovation (RRI)
			Comply with Horizon2020 Open Access Mandate
			Comply with Horizon2020 Open Research Data Pilot

Below we share some good practice examples in embedding these learning objectives in the training courses.

TRAINING FOR POSTGRADUATE STUDENTS AND EARLY CAREER RESEARCHERS

The 2014 International Open Access Week (<http://www.openaccessweek.org/>) theme “Generation Open” highlighted the importance of students and early career researchers as advocates for change in the short-term, through institutional and governmental open access policy, and as the future of the Academy upon whom the ultimate success of the open access movement depends. The theme also explores how changes in scholarly publishing affect scholars and researchers at different stages of their careers.

Over 50% of FOSTER co-funded events in 2014 targeted researchers/students (29% of events – PhD students and 25% - researchers/students). Three good practices examples are provided below highlighting experiences from Belgium, Greece and the UK.

EXAMPLE 1: A ONE-DAY BOO(S)TCAMP OPEN SCIENCE FOCUSING ON YOUNG RESEARCHERS

KU Leuven (Belgium) developed a programme for a one-day “Boo(s)tcamp Open Science focusing on young researchers”.

More information and presentations are available here:

<http://www.fosteropenscience.eu/event/boostcamp-open-science>

The day launched with a crash course on the ideas and principles of open access and open research data for newbies (“Learn to speak Open”), followed by a Q&A panel of regional funders

with open access mandates and representatives of the European Commission (“Ask the Funders”). Then the floor is given to open science testimonials from different disciplines – the Life Sciences, STEM and Humanities (“Meet the Experts”) with practical tips on how to open up your research and give it a boost.

Session 1 : Introduction & general information

- Open Access & (Open) Data Policy KU Leuven
- Practical guidelines in opening up publications and data
- How to comply with an open access mandate
- Asking an amendment on publisher agreements
- Visibility on the Net: Register for ORCID ID/Research ID

Session 2 Bootcamp Learn to speak Open: What, Why, How in Open Science

- The Benefits of Openness
- The Practice of Openness

Session 3

Open Publishing: Open Peer Review & Altmetrics & Inside Tips to get published

Session 4

Open “because you have to”: Ask the Funders – a panel discussion and Q&A with funders mandating Open Access to publications

Session 5

Open “because you want to”: Open science in practice – Meet the experts (open research data sharing, digital humanities, etc.).

EXAMPLE 2: DISCOVERING OPEN PRACTICES FOR PGR AND EARLY CAREER RESEARCHERS

“Discovering Open Practices for PGR and Early Career Researchers”, jointly hosted by the London School of Economics and Political Science, King’s College London and Queen Mary University of London (the UK), was a one-day training for PhD and early career researchers. It covered the benefits of practicing open research early in an academic career including open access to research, data sharing, research data management and impact metrics.

More information about this event and presentations are available here:

<http://www.fosteropenscience.eu/event/foster-discovering-open-practices-pgr-and-early-career-researchers-0>

The event included keynote speakers in the morning, followed by three practical afternoon workshops. The day closed with talks from three student open advocates, who shares their experiences of open research.

Session 1: The Open Agenda in 2014

In the morning session, participants heard from [expert speakers](#) in the field of Open Access advocacy and academic practice: setting the scene, giving an overview of developments and offering a “state of the nation” on open practices for academic research.

- Taking control of the publishing system you will inherit
- Network enabled research
- Open Access, the Humanities, and Early Career Researchers

Session 2: Workshops

The afternoon session were made up of three practical workshops on a range of topics including open access publishing, data sharing, impact, blogging and metrics. The practical sessions introduced researchers to the librarians and support staff in their institution, offering a hands-on introduction to the services currently available to them for optimizing their research visibility and impact. The afternoon showed the practical steps, which complement quality research. Clear guidance on open access policies from funders such as [Research Councils UK](#), [Wellcome Trust](#) and the [European Commission Horizon 2020](#) have been provided.

Workshop One – Open Access

This session covered the practicalities and benefits of making your research available Open Access. It included:

- How to find open access material, and assess it
- Checking and understanding funder and publisher open access policies
- A demonstration of research profiles and open access repository of each institution

The session was delivered through a series of short exercises where participants were encouraged to be hands-on and share their thoughts. It ended with participants sketching a personal plan to make their research available open access, incorporating aspects of what they have learnt which work for them.

Workshop Two – Research Data Management

This session covered Research Data Management (RDM) as a pathway to sharing data. Beginning with an introduction to RDM it allowed participants to discuss concerns on sharing data. We focussed on three areas:

- Legal and ethical (data protection, informed consent)
- Intellectual Property and licencing (ownership, conditions for data use or re-use)
- Data documentation (providing context and meaning)

The session was delivered through short presentations and exercises encouraging reflection on the topic. Tools facilitating data sharing were introduced. It ended with a demonstration of a way to share and preserve research data through UK Data Service’s online data repository, ReShare.

Workshop Three - Impact and Analytics

This session covered Impact and Analytics, and online tools available for research.

We looked at the following areas:

- Established and emerging metrics
- Building an online profile for research
- Using social media for research

Session 3: New Generation of Advocates

The closing panel of advocates presented their own experiences of Open Science as students and ECRs, followed by opening up the floor for peer to peer comment and open discussion.

- The Open Advantage for Early Career Researchers
- Open Access and the Humanities
- Panel and closing remarks

EXAMPLE 3: OS3: OPEN SCHOLARSHIP SUMMER SEMINAR

“OS3: Open Scholarship Summer Seminar” was hosted by the Library & Information Center, University of Patras (Greece). The event brought together Greek postgraduate students and junior researchers (biomedical and applied sciences, as well as humanities) to introduce them to the challenges and opportunities of the open scholarship agenda in different perspectives of scholarly research activity (open access, open educational resources, open research data, open knowledge).

More information, presentations and video recordings are available here:

<http://www.fosteropenscience.eu/event/os3-open-scholarship-summer-seminar-0>.

During the event, participants worked together in small groups to develop projects aimed at “opening” their research in various levels. Training topics included the following:

- The fundamentals of the Scholarly Communication lifecycle;
- Open knowledge and open education: introducing paradigm shifts;
- Getting published in the right way: literature review, information search & retrieval, writing & editing, peer review & quality control processes, reputation & metrics, open access: basic concepts & publishing models;
- Open data: why, where & how
- Tools and standards: open standards, open source software, scientific and research networks & social media, cloud/sharing technologies, crowd-sourcing, data repositories etc.
- Digital preservation, long term access and reusability of research results
- Copyright issues

At the end of the workshop participants have been introduced to all aspects of open science, understood the legal aspects concerning the presentation of their scientific results, evaluated

and planned the best ways to disseminate their results and use all available tools to share their outputs in the open access framework.

EXAMPLE 4: TRAINING SESSIONS FOR RESEARCHERS: WHAT DO RESEARCHERS NEED TO KNOW?

Royal Holloway, University of London (UK), designed a training session for researchers that provided an overview of current developments in open access, open data, research data management and the funders' policies regarding research publications.

More information and presentations are here: <http://www.fosteropenscience.eu/event/open-access-ref2020-and-research-data-management-what-do-researchers-need-know>.

The presenters focused on the most important components and explored the adaptation of best practices required by research staff to ensure compliance with funder policies.

The event programme:

- HEFCE's Policy for open access in the REF2020
- Research Data Management: Policies and Best Practices
- Open Access Services at Royal Holloway
- Research Data Management Services at Royal Holloway

TRAIN THE TRAINERS PROGRAMMES

Two FOSTER co-funded projects in 2014 specifically addressed train-the-trainers: Open Access Ambassador training programme hosted by the Max Planck Society (Germany) and Training the trainers for Open Access and Open Science project hosted by Centrum Cyfrowe (Digital Center), Polska Foundation (Poland). This training approach provides a good platform to roll out FOSTER training initiative to a large number of stakeholders. Below is more information about these two initiatives.

EXAMPLE 1: OPEN ACCESS AMBASSADOR TRAINING PROGRAMME

The Open Access Ambassador Training Programme was organised by the Max Planck Society in Germany.

The training programme and presentations are here:

<http://oambassadors.mpg.de/programm/> and an overview of the training event is provided here: <http://oambassadors.mpg.de/856/>.

The aims of the Open Access Ambassador training programme were the following:

- to disseminate and multiply the principles of open access and open data among young scientists;

- to integrate open access principles as a standard process in the research work-flow of early career researchers at the Max Planck Society; and
- to create a real change and a sustainable transition towards open access in the long term.

Open Access Ambassadors (PhD students) of each Max-Planck-Institute (about 80 Ambassadors in total) become open access multipliers and are responsible for open access and related topics within their own institute. Each Open Access Ambassador should give one or two workshops or lectures per year about open access and open data principles tailored to the particular needs of their institutes. They directly support young researchers and help them to integrate open access practices in their daily work-flow as well as they act as open access experts and contacts. In return, they get an optimal training via a two-day FOSTER training-the-trainers workshop.

EXAMPLE 2: TRAINING THE TRAINERS FOR OPEN ACCESS AND OPEN SCIENCE

Training the trainers for Open Access and Open Science is the project hosted by Centrum Cyfrowe (Digital Center), Polska Foundation.

More information about the initiative is here:

<http://www.fosteropenscience.eu/event/training-trainers-open-access-oa-and-open-science-0>.

The project started with a two-day training for ten future trainers from different academic centres and research institution. Each trained person afterwards conducts a one-day workshop for at least 12 researchers in their home institutions (altogether at least ten workshops for approximately 120 researchers, students, librarians).

The project addresses the need of the Polish open access community for more trainers, able in particular to reach different regions and academic centres. Training the trainers also strengthens the institutional training capacity of open access advocates.

DISCIPLINE SPECIFIC TRAINING

EXAMPLE 1: OPEN WORKFLOWS FOR SOCIAL SCIENTISTS

Stichting VU-VUmc (VU University Amsterdam, Faculty of Economics and Business Administration, the Netherlands) hosted a two-day workshop for quantitative social scientists on open workflows.

More information and presentations are here:

<http://www.fosteropenscience.eu/event/workshop-open-workflows>.

The workshop was organized in two main blocks. Firstly, basic concepts such as open science, transparency and reproducibility were presented. These ideas were made operative through the concept of the workflow, as the vehicle to embody these principles in daily practice.

The second, major, part of the workshop included a hands-on overview of specific tools that have been designed with open science principles in mind and that hence provide the ingredients of a well-thought open workflow. This was delivered alternating presentation time with demo time, allowing participants to get a real taste of what using the tools implies and see live their advantages (the participants are advised to bring their laptops).

The goal of the second part was not to get to every detail of each tool and package, but to give a gentle introduction, to provide further material and to place them in the appropriate context. Important emphasis was put on how they contribute to building a coherent open workflow and how they relate to other tools. The main areas included the following:

- Version control and Automation: git and make (lecture notes are available here: <http://darribas.org/WooWii/notes/02-git.html>);
- Typesetting: LaTeX, Markdown and pandoc (lecture notes: <http://darribas.org/WooWii/notes/03-typesetting.html>)
- Statistical analysis: R statistical platform (lecture notes: <http://darribas.org/WooWii/notes/04-r.html>)
- Online publishing: Open repositories (most notably: Github), creating HTML5 slides (and of course pdf slides) with just using Markdown and RStudio, post your research as a webpage (lecture notes are here: http://darribas.org/WooWii/notes/05-online_pub.html).

Assignments and a final paper is available here: <http://darribas.org/WooWii/download.html>.

At the end of the workshop, participants were able to reproduce a paper of their own and make it available in an open form applying the concepts and tools introduced.

EXAMPLE 2: OPEN HUMANITIES (THATCAMP)

Göttingen Centre for Digital Humanities, Georg-August Universität Göttingen (Germany), hosted a series of Open Humanities training sessions, during THATCamp Göttingen – a pre-conference event of the 50th Convention of German Historians, Historikertag (one of Europe's largest humanities conferences).

More information is here: <http://www.fosteropenscience.eu/event/open-humanities-humanities-and-technology-camp-thatcamp>

In addition to self-organised 'barcamp' sessions, the Open Humanities training sessions covered the following topics:

- Open Humanities (open access, open data, open standards and open attitude);
- Open History (a specific session dedicated to openness for historians);
- Open Humanities Data (data sharing, licensing, linked data technologies and the semantic web) and
- Open Access for Digital Arts and Humanities in Europe (Open Access repositories and innovative types of publication platforms for the arts and humanities).

The outcomes of the event were made available via Open Edition's publication platform for academic blogs Hypotheses.org, including embedded video of the training sessions. This blog is the first stepping stone towards creating an Open Humanities training package which could be offered as a contribution to DARIAH, the Digital Research Infrastructure for the Arts and Humanities.

TRAINING SESSIONS FOR INSTITUTIONS (RESEARCH ADMINISTRATORS AND LIBRARIANS)

We recommend to start with drafting your learning objectives that cover the needs of your target audience. Learning objectives may be expressed as brief statements describing what students/learners should know or be able to do by the end of a defined instructional period. After defining the learning objectives for your context, associate at least one learning activity to each specific learning objective.

Learning objectives for research administrators and librarians (from D2.3. Content & learning objectives for all open science target groups):

TOPICS (following the Research Lifecycle)		CORE LEARNING ELEMENTS	LEARNING OBJECTIVES (as basis for a LEARNING PLAN)
Open Science	Open Science Definition	Define the concept of Open Science	Define relevance of OS tools to Reproducibility/Integrity of Research
			Identify OS tools for each step of the Research Lifecycle
			Discuss OS & Reproducibility role in Innovation & Economic Growth
	Open Reproducible Research	Define relevance to Reproducibility	Identify OS tools for each step of the Research Lifecycle
			Define relevance of OS tools to Reproducibility/Integrity of Research
			Discuss OS & Reproducibility role in Innovation & Economic Growth
	Open Research Data (ORD)	Open Big Data	Define Open Big Data concept
			Identify services based on Open Big Data
		Open Data Definition	Define Open Data
			Demonstrate the advantages of Open Data
		Open Data Journals	Identify existing Open Data Journals
			Open Data Standards
		Open Data use and reuse	
			Open Data use and reuse
	Open Data use and reuse	Select & Use licences (e.g. CC) for datasets	
Open Access		Distinguish options for Open Access	Comply with Horizon2020 Open Research Data Pilot
	Compare Cost/Benefits of Gold and Green Routes		
Open Access	Distinguish options for Open Access	Comply with Horizon2020 Open Access Mandate	
		Analyze the social impact of OA	

		Recognize the advantages of Open Access	Estimate the effect of OA on visibility and impact of research results
			Identify tools and e-infrastructure for OA
		Reuse existing OA resources	Define the characteristics of an OA publication
			Interpret content licences and copyright
Open Science Tools	Identify Open Science Tools		Identify and choose Open Science Tools for your discipline/project
			Evaluate existing Open Science Tools
	Select existing Open Services		Identify and choose existing Open Services related to Open Science
			Evaluate existing Open Services
Promote outputs of OS projects		Apply lessons learnt for your discipline/project	
Open Science Evaluation	Identify Altmetrics & Impact		Identify the suit of Altmetrics for future Research Evaluation
			State Pro`s and Con`s of various Altmetrics measures
			Interpret OS contribution to Research Evaluation Assessments (e.g. REF 2020)
	Understand Altmetrics & Impact		Use of academic networks scores
			Discuss OS contribution to Research Evaluation Assessments (e.g. REF 2020)
Recognize Open Peer-Review Characteristics		Indicate the pros and cons of the Open Peer Review process	
		Critically compare Open vs Closed Peer-Review in your discipline	
Open Science Guidelines	Identify Open Science Guidelines		Analyse existing OS Guidelines
			Compare existing OS Guidelines
	Apply Open Science Guidelines		Choose a OS Guideline that applies to your discipline/project
			Identify the Guidelines requisites
			Comply with Horizon2020 Open Access Mandate
		Comply with Horizon2020 Open Research Data Pilot	
Open Science Policies	Identify Open Science policies		Identify the different types of OS policies
	Draft Open Science policies		Formulate an OS policy to your discipline/project
	Comply with Horizon2020		Identify the requirements of Horizon2020 Open Access Mandate

Research Data Management			Comply with Horizon2020 Open Access Mandate
			Comply with Horizon2020 Open Research Data Pilot
		Monitor Horizon2020 compliance	Define metrics and tools to monitor compliance
			Report level of compliance
	RDM Plans	Define RDM Plans	Indicate characteristics of the RDM Plans
			Appraise the characteristics of a RDM plan to your discipline/project
		Prepare a RDM Plan	Create a RDM Plan
	RDM Policies	Understand RDM Policies	Identify RDM Policies
			Comply with RDM Policies
	RDM Services	Identify RDM services	Identify relevant RDM Services
Categorize RDM Services			
Evaluate & Compare RDM services			
RDM Standards	Describe existing RDM Standards	Identify existing RDM Standards	
		Analyse RDM standards requisites	
	Implement existing RDM Standards	Promote RDM Standards in your discipline/project	
RDM Tools	Identify existing RDM Tools	Identify existing RDM Tools	
		Compare RDM Tools	
	Use RDM Tools	Select relevant RDM Tools	
		Evaluate the use of RDM Tools	
Legal Issues	Intellectual Property Rights	Definition of copyright	Define copyright in Open Data, Open Access, Open Science content
			Define IPR-OS complementarities & conflicts
		Authors & Publisher rights	Define copyright agreement limits
			Amend a copyright agreement
	Retain Copyright to a publication		
		Apply Green OA to your discipline/project/workflow	
	Law	Identify local copyright laws	Understand copyright laws relevant to your discipline
	Licences	Choose appropriate Licences	Differentiate level of access rights
			State types of licences
		Apply your licence	Apply licence and apply to your content

Ethics	Ethics	Define ethical limits	Define Open Data limitations to clinical data, patient privacy, national security, IPR
		Operate within ethical limits	Relate to Responsible Research and Innovation (RRI)
			Comply with Horizon2020 Open Access Mandate
			Comply with Horizon2020 Open Research Data Pilot

Below we share some good practice examples in embedding these learning objectives in the training courses.

EXAMPLE 1: OPEN ACCESS SEMINAR FOR RESEARCH ADMINISTRATORS

Aarhus University Library (Denmark) designed a training programme for the Open Access Seminar for Research Administrators. The overall objective was to give a broader and more nuanced insight into open access policies development, implementation and compliance.

More information and presentations are here: <http://www.fosteropenscience.eu/event/open-access-oa-seminar-research-administrators-0>

In spring 2014, the Ministry of Higher Education and Science of Denmark established a National Steering Committee supporting open access with representatives from universities. The National Steering Committee has formulated a National Strategy for Open Access. The vision is to create free access for all citizens, researchers and companies to all research articles from Danish research institutions financed by public authorities and/or private foundations.

There are different attitudes towards open access among research administrators. They are aware of the increasing demands for open access from funding bodies including Horizon 2020 and the European Research Council (ERC). However they still have various concerns, which needed to address:

- Will it be too time consuming for researchers to comply with funders' open access policies?
- Will people cite the right version of the article?
- Are open access journals inferior in quality etc.?

The programme of the event (presentations and discussions):

- Open access in Denmark – new politics and demands
- EC policies, Horizon 2020 and ERC, possibilities and challenges
- University perspective – what does it take to handle the new challenges at institutional level

- Workshop for librarians working with open access: Winning Horizon 2020 with open science

EXAMPLE 2: OPEN SCIENCE: ENGAGING FINLANDS DOCTORAL SCHOOLS

This event was organised by the University of Helsinki for the administration staff dealing with doctoral training to learn more about open science, to present comments to the ministry on improvements to the existing open science services and possibly create ideas for new ones.

More information is here: <http://www.fosteropenscience.eu/event/open-science-engaging-finlands-doctoral-schools> and presentations are available here: <https://wiki.helsinki.fi/display/OAviikko/Open+Access%21+20.10.2014>.

Open science literacy can offer future post-graduates an essential advantage of building a strong research profile, becoming more competitive at national and EU proposal funding, and have the capacity to bridge the gap between academia and the public on most societal challenges. “Open Science: Engaging Finland's Doctoral Schools” event has been designed as an informal session that fosters the dialogue between ministry representatives, open science advocates and practitioners and doctoral school administrators in the Scandinavian region. The session was forward looking, and examined strategic benefits and barriers for introducing open science standard graduate training alongside research excellence training.

The programme of the event:

- Open access publishing, citations and editorial policies
- Altmetrics and visibility
- Winning Horizon 2020 with Open Science
- Publications, Open availability and Research Funding
- Open science and research policy
- Trends in Open Access Publishing
- Discussion

EXAMPLE 3: INSTITUTIONAL TRAINING ON OPEN ACCESS, OPEN RESEARCH DATA AND OPEN SCIENCE

The FOSTER consortium together with the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences designed a general training programme on open access, open research data and open science.

More information and presentations are here: <http://www.fosteropenscience.eu/event/autumn-training-school-development-and-promotion-open-access-oa-scientific-information-and>

On the agenda:

- Key aspects and approaches of open access, open research data and open science
- Open science for ubiquitous sharing, dissemination and impact

- Business models for open access
- Copyright and licensing in open access projects
- Open research data
- Policy framework and roadmap for open access, open data and open science
- EC policy and recommendations for open access to scientific information and its preservation
- Horizon 2020 mandate on Open Access to publications
- Horizon 2020 Open Research Data Pilot
- OpenAIRE and its services for Horizon 2020 compliance

EXAMPLE 4: TRAINING FOR LIBRARIANS: ROLE OF LIBRARIANS IN OPENING UP RESEARCH DATA

The Faculty of Social Sciences, University of Ljubljana, designed a training programme for librarians on open research data in social sciences and humanities.

More information and presentations are here:

<https://www.fosteropenscience.eu/event/research-data-management-and-open-data-1>

The training programme covered the following areas:

- Data Librarian Experience
- Introduction to Research Data Management
- The Role of Librarians in the Categorisation and Classification of Scientific Data Publications
- Development of Research Data Policy and RDM Planning in Slovenia
- Data Users and Data Depositors (hands on session)
- Open Access in European Union research activities

The aim of such a workshop was to enable research librarians in liaison role with researchers and project managers on research data management issues:

- Providing information and support to researchers who are involved in national or international research projects and are potential data depositors;
- Providing advice on where and how deposit research data and encourage researchers to make their data available and open;
- Assisting researchers with research data management.

TRAINING SESSIONS FOR RESEARCH PROJECT MANAGERS

We recommend to start with drafting your learning objectives that cover the needs of your target audience. Learning objectives may be expressed as brief statements describing what students/learners should know or be able to do by the end of a defined instructional period. After defining the learning objectives for your context, associate at least one learning activity to each specific learning objective.

Learning objectives for research project managers (from D2.3. Content & learning objectives for all open science target groups)

TOPICS (following the Research Lifecycle)		CORE LEARNING ELEMENTS	LEARNING OBJECTIVES (as basis for a LEARNING PLAN)
Open Science	Open Science Definition	Define the concept of Open Science	Define relevance of OS tools to Reproducibility/Integrity of Research
			Identify OS tools for each step of the Research Lifecycle
			Discuss OS & Reproducibility role in Innovation & Economic Growth
	Open Reproducible Research	Define relevance to Reproducibility	Identify OS tools for each step of the Research Lifecycle
			Define relevance of OS tools to Reproducibility/Integrity of Research
			Discuss OS & Reproducibility role in Innovation & Economic Growth
	Open Research Data (ORD)	Open Big Data	Define Open Big Data concept
			Identify services based on Open Big Data
		Open Data Definition	Define Open Data
			Demonstrate the advantages of Open Data
		Open Data Standards	Identify existing Open Data Standards
			Use Identifiers for archiving & citing research data
		Open Data use and reuse	Understand of linked data
	Select & Use licences (e.g. CC) for datasets		
	Comply with Horizon2020 Open Research Data Pilot		
Open Access	Distinguish options for Open Access	Compare Cost/Benefits of Gold and Green Routes	
		Choose relevant Route based on your context	
		Comply with Horizon2020 Open Access Mandate	
		Analyze the social impact of OA	

		Recognize the advantages of Open Access	Identify tools and e-infrastructure for OA
		Reuse existing OA resources	Define the characteristics of an OA publication
			Use different OA search portals
			Interpret content licences and copyright
	Open Science Tools	Identify Open Science Tools	Identify and choose Open Science Tools for your discipline/project
		Select existing Open Services	Evaluate existing Open Science Tools
			Identify and choose existing Open Services related to Open Science
		Promote outputs of OS projects	Evaluate existing Open Services
	Open Science Evaluation	Identify Altmetrics & Impact	Apply lessons learnt for your discipline/project
			Identify the suit of Altmetrics for future Research Evaluation
			State Pro`s and Con`s of various Altmetrics measures
			Interpret OS contribution to Research Evaluation Assessments (e.g. REF 2020)
	Open Science Guidelines	Identify Open Science Guidelines	Discuss OS contribution to Research Evaluation Assessments (e.g. REF 2020)
			Analyse existing OS Guidelines
			Comply with Horizon2020 Open Access Mandate
	Open Science Policies	Identify Open Science policies	Comply with Horizon2020 Open Research Data Pilot
			Identify the different types of OS policies
Draft Open Science policies		Formulate an OS policy to your discipline/project	
Comply with Horizon2020		Identify the requirements of Horizon2020 Open Access Mandate	
		Comply with Horizon2020 Open Access Mandate	
		Comply with Horizon2020 Open Research Data Pilot	
Monitor Horizon2020 compliance		Define metrics and tools to monitor compliance	
	Report level of compliance		
⌚	RDM Plans	Define RDM Plans	Indicate characteristics of the RDM Plans

			Appraise the characteristics of a RDM plan to your discipline/project	
		Prepare a RDM Plan	Create a RDM Plan	
	RDM Policies	Understand RDM Policies	Identify RDM Policies	
			Comply with RDM Policies	
	RDM Services	Identify RDM services	Identify relevant RDM Services	
			Categorize RDM Services	
		Use RDM services	Integrate RDM services in your discipline/project/workflow	
			Evaluate & Compare RDM services	
	RDM Standards	Describe existing RDM Standards	Identify existing RDM Standards	
			Analyse RDM standards requisites	
		Implement existing RDM Standards	Promote RDM Standards in your discipline/project	
	RDM Tools	Identify existing RDM Tools	Identify existing RDM Tools	
			Compare RDM Tools	
		Use RDM Tools	Select relevant RDM Tools	
			Evaluate the use of RDM Tools	
	Legal Issues	Intellectual Property Rights	Definition of copyright	Define copyright in Open Data, Open Access, Open Science content
Define IPR-OS complementarities & conflicts				
Authors & Publisher rights			Define copyright agreement limits	
			Amend a copyright agreement	
Law		Identify local copyright laws	Apply Green OA to your discipline/project/workflow	
			Understand copyright laws relevant to your discipline	
Licences		Choose appropriate Licences	Differentiate level of access rights	
	State types of licences			
Ethics	Ethics	Define ethical limits	Define Open Data limitations to clinical data, patient privacy, national security, IPR	
		Operate within ethical limits	Relate to Responsible Research and Innovation (RRI)	
			Comply with Horizon2020 Open Access Mandate	
			Comply with Horizon2020 Open Research Data Pilot	

EXAMPLE 1: OPENAIRE WEBINARS FOR RESEARCH PROJECT MANAGERS

FOSTER addresses the training needs of research project managers via a series of webinars co-hosted with the [OpenAIRE](#) project.

More information, presentations and recording are available here:

<http://www.fosteropenscience.eu/event/openaire-webinars-during-oa-week-2014>.

The webinars covered the following topics:

- The **Horizon 2020 Open Access to Publications Mandate**: Are you supposed to deposit? What to deposit? Where to deposit? When to deposit?
- The **Horizon 2020 Open Research Data Pilot**: Who should participate and how to comply
- The **OpenAIRE portal** www.openaire.eu: how to find and add publications, data and project information; how to use it as a project management tool and how to find information about open access and open research data.
- **ZENODO** (www.zenodo.org): a simple and innovative service that enables researchers, scientists, EU projects and institutions to share and showcase multidisciplinary research results (data and publications) that are not part of existing institutional or subject-based repositories.

Each webinar lasted for one hour and included a presentation and a Q&A session.

TRAINING SESSIONS FOR POLICY MAKERS AND STAFF WORKING IN FUNDING BODIES

We recommend to start with drafting your learning objectives that cover the needs of your target audience. Learning objectives may be expressed as brief statements describing what students/learners should know or be able to do by the end of a defined instructional period. After defining the learning objectives for your context, associate at least one learning activity to each specific learning objective.

Learning objectives for policy makers and staff working in funding bodies (from D2.3. Content & learning objectives for all open science target groups)

TOPICS (following the Research Lifecycle)	CORE LEARNING ELEMENTS	LEARNING OBJECTIVES (as basis for a LEARNING PLAN)	STAKEHOLDER					
			Doctoral Students	Resea- rchers	Research Project Managers	Knowled- ge Managers & Librarian s	Fundin- g Agencie s	
Open Science	Open Science Definition	Define relevance of OS tools to Reproducibility/Integrity of Research	o	o	o	o	o	
		Discuss OS & Reproducibility role in Innovation & Economic Growth		o	o	o	o	
		Define relevance of OS tools to Reproducibility/Integrity of Research	o	o	o	o	o	
		Discuss OS & Reproducibility role in Innovation & Economic Growth		o	o	o	o	
	Open Research Data (ORD)	Open Big Data	Define Open Big Data concept			o	o	o
			Identify services based on Open Big Data			o	o	o
		Open Data Definition	Define Open Data	o	o	o	o	o
			Demonstrate the advantages of Open Data	o	o	o	o	o
		Open Data Standards	Identify existing Open Data Standards	o	o	o	o	o
		Open Data use and reuse	Understand of linked data	o	o	o	o	o

Open Access	Distinguish options for Open Access	Compare Cost/Benefits of Gold and Green Routes	o	o	o	o	o
	Recognize the advantages of Open Access	Analyze the social impact of OA	o	o	o	o	o
	Select existing Open Services	Identify and choose existing Open Services related to Open Science	o	o	o	o	o
		Evaluate existing Open Services	o	o	o	o	o
	Promote outputs of OS projects	Apply lessons learnt for your discipline/project	o	o	o	o	o
Open Science Evaluation	Identify Altmetrics & Impact	Identify the suit of Altmetrics for future Research Evaluation	o	o	o	o	o
		Interpret OS contribution to Research Evaluation Assessments (e.g. REF 2020)		o	o	o	o
		Discuss OS contribution to Research Evaluation Assessments (e.g. REF 2020)		o	o	o	o
Open Science Guidelines	Identify Open Science Guidelines	Analyse existing OS Guidelines		o	o	o	o
		Compare existing OS Guidelines				o	o
Open Science Policies	Identify Open Science policies	Identify the different types of OS policies		o	o	o	o
	Draft Open Science policies	Formulate an OS policy to your discipline/project			o	o	o
	Comply with Horizon2020	Identify the requirements of Horizon2020 Open Access Mandate		o	o	o	o

		Monitor Horizon2020 compliance	Define metrics and tools to monitor compliance			0	0	0	
			Report level of compliance			0	0	0	
Research Data Management	RDM Plans	Define RDM Plans	Indicate characteristics of the RDM Plans	0	0	0	0	0	
	RDM Policies	Understand RDM Policies	Identify RDM Policies		0	0	0	0	
	Intellectual Property Rights			Define IPR-OS complementarities & conflicts		0	0	0	0
		Authors & Publisher rights		Define copyright agreement limits	0	0	0	0	0
				Amend a copyright agreement	0	0	0	0	0
	Law	Identify local copyright laws		Understand copyright laws relevant to your discipline		0	0	0	0
			State types of licences	0	0	0	0	0	
Ethics	Ethics	Define ethical limits	Define Open Data limitations to clinical data, patient privacy, national security, IPR	0	0	0	0	0	
		Operate within ethical limits	Relate to Responsible Research and Innovation (RRI)	0	0	0	0	0	

EXAMPLE 1: TRAINING PROGRAMME FOR STAFF FUNDING BODIES AND H2020 EC PROJECT OFFICERS

The FOSTER consortium designed a half-day training programme for the staff working in funding bodies and ran the first series of training for the H2020 EC project officers “Open access requirements to publications and research data in Horizon 2020” in June 2014.

For an overview and presentations, see

https://www.fosteropenscience.eu/project/index.php?option=com_content&view=article&id=35:presentations&catid=9:download&Itemid=107

The training programme included the following sessions:

- Introduction: Open access in the ERA and Horizon 2020 – political and legal context
- Introduction to open access, open data and open science

- Horizon 2020 mandate on open access to publications (Article 29.2 of GA)
- Horizon 2020 Open Research Data Pilot (Article 29.3 of GA)
- OpenAIRE infrastructure and services for compliance and monitoring
- Q&A, discussion, and closing

USEFUL TIPS FOR THE TRAINING EVENT ORGANIZERS

LEARNING MODALITIES

The learning approaches can be different, depending on the stakeholder and the objectives of the initiative: face to face learning, blended learning or e-Learning approaches.

Each of these approaches has advantages and disadvantages but with the FOSTER infrastructure (content and learning portal at <http://www.fosteropenscience.eu/>), you can easily create a blended learning course combining the use of the learning portal with your face-to-face training sessions.

If you want to reach a wider audience, you can develop e-Learning courses and choose different levels of engagement with the learners (a trainer approach, a moderator approach or simply an autonomous self-learning course without any communication). It is important to keep in mind, that if you communicate more you will need less content, and vice versa if you communicate less, the more content you need.

Your e-Learning strategy should be based on the fundamentals of andragogy (the pedagogy of adults). You can also consider different learning styles¹ and modalities based on the stakeholders and different teaching methods².

LEARNING OBJECTIVES

Do not forget to focus your learning activity on predefined learning objectives that cover the needs of the learners. Learning objectives may be expressed as brief statements describing what students/learners should know or be able to do by the end of a defined instructional period. Examples of learning objectives per stakeholder are provided in the text of this report.

¹ <http://teach.com/what/teachers-teach/learning-styles>

² <http://teach.com/what/teachers-teach/teaching-methods>

PRACTICAL GUIDELINES FOR ORGANISING TRAINING EVENTS

FOSTER consortium developed guidelines for the organisers of the training events. The aim of these guidelines is to obtain quality trainings with a FOSTER look and feel. Trainers can use the training material and exercises found on the FOSTER portal (<http://www.fosteropenscience.eu/>) or create new training material and share it on FOSTER portal.

Try to be consistent in your style.

RECOMMENDATIONS:

- The offered videos should not be longer than 10 minutes.

Research taught us that the engagement drops after 6 minutes. If a longer video is necessary try to keep the student's attention by posing a rhetorical question;

- The recommended way recording a FOSTER presentation is a talking head with presentation slides;
- Try filming in an informal setting.

AUDIO:

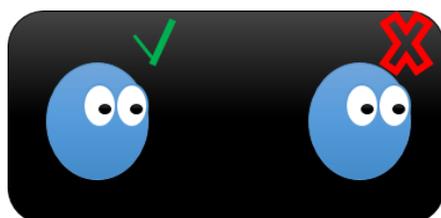
- Beware that your audio is one of the most important parts of your video production. So make sure it is free from disturbing clicks and pops and other undesired background noises;
- Use a good quality microphone (table or with a stand) or a lavalier microphone on your clothes. Make sure there is no possibility of contact noises with the table or clothing;
- Record preferably in a "silent room"; try to avoid air-conditioning units or other noisy apparatus;
- Make a test recording and adjust accordingly.

(SET)DRESSING:

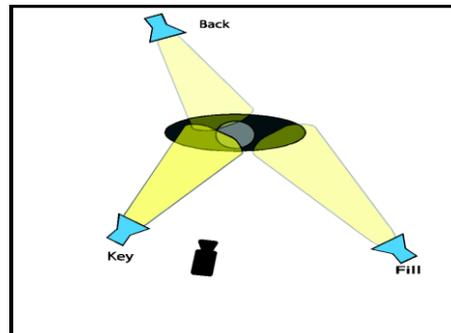
- Clothing should not be creating interference (moiré effect) so avoid small stripes (fishbone) or tartan like small squares in your clothing;
- When recording with green (or blue) key do not wear clothing resembling the green (or blue);
- Avoid using (shiny) accessories.

COMPOSITION AND LIGHTNING

- Keep in mind the 'Rule of Thirds' (http://en.wikipedia.org/wiki/Rule_of_thirds)
- If you sit on one-third make sure you look into the frame NOT out of it;



- Do not sit too close to the background (wall), allow light to wrap around you;
- Avoid mixed light, daylight and artificial light. Try to sit opposite to a window or aside from it but not in front of a window;
- If possible use a three way lighting, one main light (Key light), one to lift shadows (Fill light) and one light from the back to set you free from your background (Back light). Lights should be as high as possible on tripods and make sure the tripods are out of the picture.



LOCATION:

- Studio – eligible for introduction video's
- Lecture hall – eligible for live colleges
- Lab – eligible for demo clips for interpretation of tests
- Outdoors – eligible for showing cases or examples

VIDEO FORMATS:

- Mp4, mpeg format, H264 HD 1080P, YouTube HD, Vimeo HD

PRESENTATION:

- If you want, you can use the FOSTER template (available in the training kit attached)



- Do not use too much text on a slide: when using the FOSTER template you will notice the limitation;
- Illustrate your slides (but not too much)

- When uploading the slides, use an open document format

COPYRIGHT ISSUES AND CREATIVE COMMONS LICENSES

Education material in open access is free online and available for everyone, which is why it is very important that you use documents and footage without copyright infringement. You can use other people's photos, videos as long as you do it legally.

When you are using documents and footage from other institutes or persons, be sure you are allowed to use it and if so, make sure that others can reuse your materials as well.

Copyright laws can vary greatly per country. While in a lot of jurisdictions reuse of materials for educational purposes are to a certain extent exempted from copyright³, this is not always the case. In general, copyright laws can cause a lot of confusion and insecurity – especially amongst non-experts, and even when the eventual purpose is non-commercial. To avoid this confusion and insecurity when creating training materials, and to make sure that FOSTER materials can be shared and reused as widely as possible, FOSTER advocates the use of Open Content licenses, more specially the Creative Commons licenses⁴. Using openly licensed materials when creating training materials removes doubt about possible copyright infringements, and by licensing the final materials under an open license, the materials can be reused and even remixed by others, with the original authors still being credited.

WHAT ARE CREATIVE COMMONS LICENSES?

In summary: all Creative Commons licenses are based on the necessity of attribution (BY). To this, several other conditions can be added, such as non-commercial (NC: not allowing the materials to be reused in a commercial context); no derivatives (ND: not allowing remixes or adaptations), share alike (SA: sharing and remixing only possible under an identical license as the original). These conditions can be combined into six licenses, ranked from very open (CC BY and CC BY-SA) to very restrictive (CC BY-NC-SA and CC BY-NC-ND). Additionally, CC has also developed a Public Domain Mark (PD: for materials that are already in the public domain) and a Public Domain Dedication (CC0: when the author wants to dedicate her work to the public domain). Creative Commons licenses work on three levels: they have a 'human readable' deeds page, a legal code and a machine readable level (this allows search engines to look for CC licensed content).

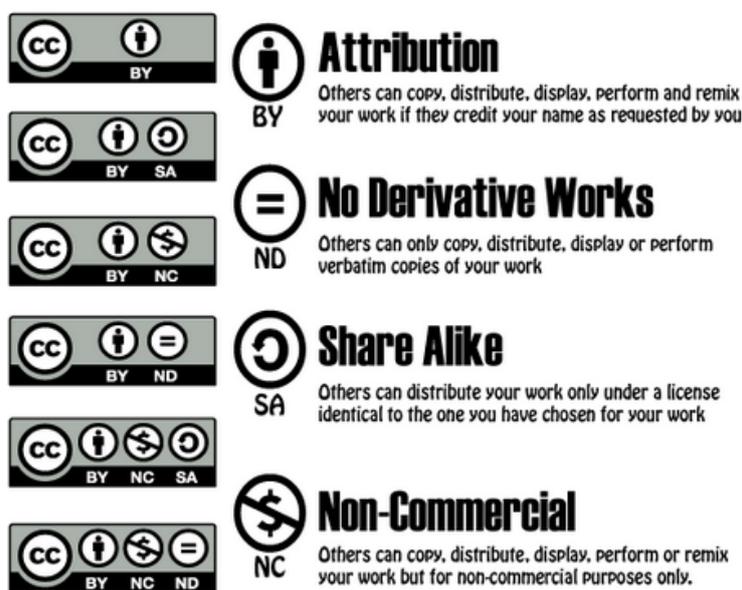
! A license can only be applied by the copyright holder: it is the responsibility of the creator of the training material (and the organiser of the event) that the materials are properly licensed.

FOSTER recommends the CC BY license for FOSTER training materials, allowing others to reuse and remix the materials as widely as possible.

For a detailed explanation on how Creative Commons and other Open Content licenses work, see: http://meta.wikimedia.org/wiki/Open_Content_-_A_Practical_Guide_to_Using_Creative_Commons_Licences/Guide

³ <http://www.wipo.int/copyright/en/limitations/>

⁴ www.creativecommons.org



HOW TO FIND OPEN CONTENT MATERIALS FOR YOUR PRESENTATION?

A lot of content aggregators such as Google Images, Flickr, Europeana and Vimeo allow to filter for openly licensed materials (usually through the ‘advanced search’ option), while Wikimedia as a rule only displays openly licensed or public domain images.

On the Creative Commons website, you can also look for materials using Creative Commons’ own aggregator, CC Search⁵.

HOW TO ATTRIBUTE OPENLY LICENSED CONTENT?

A little common sense goes a long way: With the information provided someone should be able to

- Find the original item and
- Know which license is applicable

To attribute works that you reuse under a Creative Commons license you generally must at least include

1. The title
2. Name of author and
3. The specific license the work is under

⁵ <http://search.creativecommons.org/>

Preferably you also link back to the original source and to the license deeds.

This is an example of an ideal attribution:



[Ryan Chouest – Offshore workboat](#) by [gcaptain.com](#) [CC BY](#)

[A pretty good attribution can also be:](#)



[Photo](#) by [Wikipedia](#) / [CC BY SA](#)

HOW TO LICENSE MY OWN CONTENT?

When creating content, keep in mind that (re)users should be able to cite you correctly. So make sure that you mention the license (with a link to the deeds) in the metadata of your work. When you create a presentation or a movie clip, include logo of the license you choose at the beginning and/or end of your work (preferably also with a link).

Creative Commons licenses can be added to materials by the copyright holder. The easiest way to do this is to go to the Creative Commons License chooser⁶ and pick the license you want, copy the link and the logo and add it to the training material.

Keep in mind that you can only license materials if you own the copyright. If you reuse other materials in your work, make sure that you are allowed to do so, and indicate clearly their license and origin.

PORTRAIT RIGHT

If applicable in your country, make sure to have permission to distribute audio-visual materials featuring your audience and speakers.

Portrait right is the right

- To control the use of one's image and;
- If the portrait was taken by order of the photographed person, you do not have permission to use the picture;
- If not the picture may be used except when reasonable interest is damaged;
- If in doubt ask written permission!

TRAINING EVALUATION FORM

Do not forget to ask your training events participants to give their feedback answering the following questions:

- What did you hope to get out of this event?
- Overall how satisfied were you? (Please circle one):
 - Very satisfied 1 2 3 4 5 Very dissatisfied
- How relevant was the material in your opinion? (Please circle one)
 - Highly relevant 1 2 3 4 5 Not at all relevant
- Which aspects of the event did you feel were most valuable?
- Which aspects of the event did you feel could be improved?
- Please give any additional comments you wish to make
- Which of these groups is your role is closest to? (Please circle any appropriate)
 - Researcher
 - Postgrad student
 - Research officer
 - Funder
 - Library
 - EC project manager

This survey can be conducted on-site during or after the event, or through a web form (such as Google Forms)

⁶ <https://creativecommons.org/choose/>

CRITERIA FOR DESCRIBING, REVIEWING AND EVALUATING COURSES AND RESOURCES – A CHECKLIST

We recommend using [InformAll \(formerly RIDLs\) criteria](#) for describing, reviewing and evaluating practice in information literacy training (listed below). They enable practitioners to design, review and assess courses and resources.

Part A: criteria for describing and reviewing your course or resource

Preamble

Have you defined clear aims, objectives and learning outcomes for the course/resource?	Y/N
1.1 Learners: who is it aimed at? Name of course/resource:	
1.1.1. What career stage(s) is the course/resource addressed at? <ul style="list-style-type: none"> ● Researchers ● Postgraduate students ● Institutional decision makers and staff ● Librarians and repository managers ● Funders (decision makers and staff) ● Project managers 	
1.1.2. What disciplinary area(s) is the course/resource addressed at?	
1.2 Need	
1.2.1. Have you undertaken an assessment of learners' needs?	Y/N
1.2.2. Does the course/resource fit the broader professional needs of the learners?	Y/N/NA
1.2.3. Does the course/resource fit with your institutional and/or departmental policy and practice on researcher development?	Y/N
1.2.4. Does the course/resource relate to expectations or requirements from relevant professional bodies?	Y/N
1.2.5. Can the course/resource be transferred or adapted to suit other needs or contexts from the one for which it was designed?	Y/N
1.2.6. Is the course/resource accessible, particularly for learners with special needs or disabilities such as visual impairment?	Y/N
1.3 Demand	
1.3.1. Is the course/resource a response to demand from learners?	Y/N
1.3.2. Is participation by learners in previous similar training activities a factor in helping you determine demand?	Y/N
1.3.3. Is the course a response to an institutional request/ policy?	Y/N
1.3.4. Is the course a result of your own perception of a need?	Y/N
1.4 Meeting requirements	
1.4.1. Does the course/resource or resource take into account of:	
<ul style="list-style-type: none"> ● Current level of skill 	Y/N

<ul style="list-style-type: none"> • Years of experience 	Y/N
<ul style="list-style-type: none"> • Disciplinary areas 	Y/N
1.4.2. Are there any prerequisites in terms of what learners need to know already in order to derive the most benefit from the course?	Y/N

2.1. Areas of open access, open research data, open science covered

What area(s) does the course/resource cover? <ul style="list-style-type: none"> • Open access • Open research data • Open science • Policy development and implementation • Research data management • Copyright and IPR • Impact and metrics • Funder compliance 	
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2.2 Learning outcomes

Have you communicated the aims, objectives and learning outcomes from the course/resource?	Y/N
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2.3 Use of FOSTER training portal/training materials

2.3.1. In the course have you used FOSTER portal and training materials?	Y/N
2.3.2. If yes, have you adapted FOSTER training materials to suit your training needs?	Y/N

3.1 Approach

What is the format of the course/resource? <ul style="list-style-type: none"> ○ Classroom-based courses (lecture or workshop) ○ Individual tuition ○ Online courses ○ Training material (printed or digital) ○ Other 	
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3.2 Training providers

3.2.1. Who designs and delivers the course/resource? <ul style="list-style-type: none"> • Library • Faculty • Graduate school • IS department • Other (please specify) 	
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3.2.2. Do the trainers all have the relevant level of skills and qualification?	Y/N
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3.3 Support, dissemination and promotion

3.3.1. Is there sufficient support required to run the course or manage the resource in terms of:	
• Personnel	Y/N
• Facilities	Y/N
• Finance	Y/N
3.3.2. Is the course/resource well-advertised?	Y/N
3.3.3. If the resource is online, is it available outside the institution?	Y/N/not applicable
3.3.4. Has it been deposited in online facilities such as FOSTER portal?	Y/N/not applicable
3.3.5. Is the resource free to use outside the institution?	Y/N/not applicable

Part B: criteria for evaluating your course or resource

4.1 Numbers

How many learners have taken part in the course or used the resource?	
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4.2 Feedback

Did participants give feedback on:	
• Whether learning objectives met	Y/N/didn't ask
• Quality of course/resource	Y/N/didn't ask
• Originality of course/resource	Y/N/didn't ask
• Attractiveness of course/resource	Y/N/didn't ask

5.1 Impact on knowledge and skills

Have you evaluated changes in learners' knowledge, skills and competencies resulting from the course/resource?

5.2 Behaviour and attitudes

Have you evaluated improvements that may be attributable to the course/resource in terms of:	
• Attitudes	

<ul style="list-style-type: none"> ● Confidence ● Behaviour ● Performance and practice 	
5.3 High-level impact	
5.3.1. Have you evaluated the broader impact of the course/resource in terms of: <ul style="list-style-type: none"> ● Extent to which recipients have become better learners and/or researchers ● Ways in which the institution has benefitted 	
5.3.2. Has there been any feedback from the departments in which the recipients study/work?	Y/N
5.4 Challenges/barriers	
Have you encountered any challenges and/or barriers (including lack of resources) when implementing the course/resource?	Y/N
5.5 Steps taken	
Have you taken any steps to improve the course/resource as a result to any of the evaluation, as covered by the previous questions?	Y/N