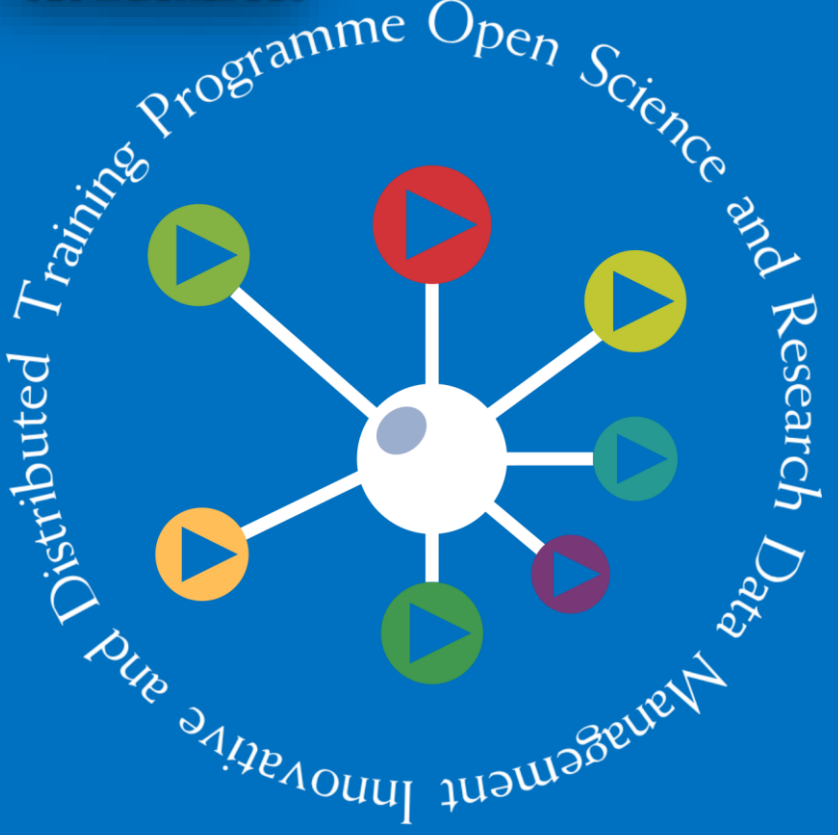
National Institute for Research & Development in Informatics – ICI Bucharest



IO1: RDM&OS Training Methodological Toolkit

O1/A1: Needs Analysis - ICI Bucharest

Eng. Lidia Bajenaru, PhD

Agenda

- Introduction
- Identified needs on target groups:
  - Early Career Researchers (ESR)
  - Researchers (mid and seniors)
  - For all users (general needs)

Open Science

"movement which aims to make scientific research, data and dissemination accessible to all levels of an inquiring society"

Sonja Bezjak, April Clyburne-Sherin, Philipp Conzett, Pedro Fernandes, Edit Görögh, Kerstin Helbig, … Lambert Heller. (2018). Open Science Training Handbook (Version 1.0). Zenodo. http://doi.org/10.5281/zenodo.1212496 - https://book.fosteropenscience.eu/en/book.pdf

Dimensions of Open Science

- The future of scholarly publishing
- FAIR data
- The European Open Science Cloud (EOSC)
- Education and skills
- Rewards and incentives
- Next-generation metrics
- Research integrity

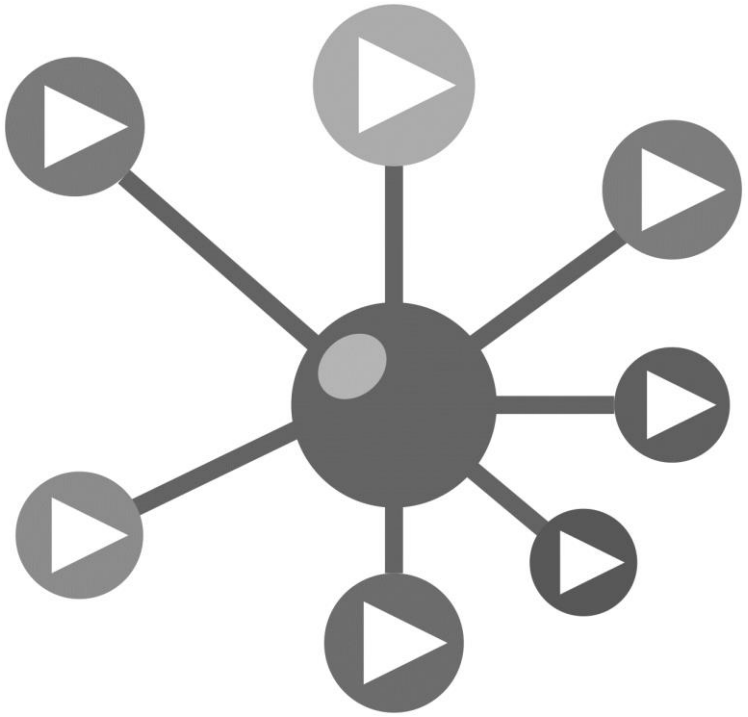
Ayris, P., et al. (2018). Open Science and its role in universities**: A roadmap for cultural change**: LERU - https://www.leru.org/files/LERU-AP24-Open-Science-full-paper.pdf

Open Data

“Open data is the idea that certain data should be freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control ”

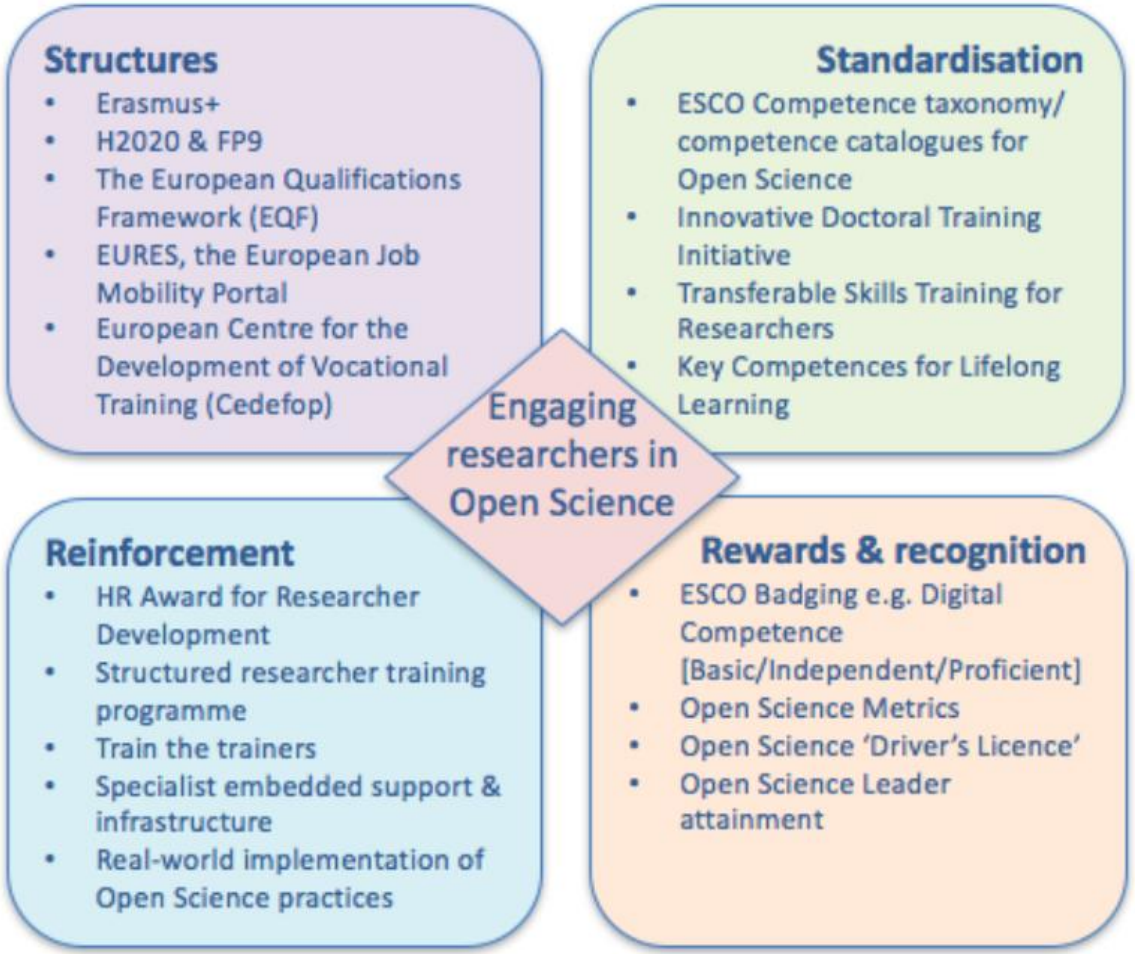
Auer, S. R.; Bizer, C.; Kobilarov, G.; Lehmann, J.; Cyganiak, R.; Ives, Z. (2007). "DBpedia: A Nucleus for a Web of Open Data". The Semantic Web. Lecture Notes in Computer Science 4825. p. 722. doi:10.1007/978-3-540-76298-0_52. ISBN 978-3-540-76297-3

Open Data



- Open Data allows research data to be shared and re-used
  - Avoids costly duplication of research activity
  - Provides greater transparency in research activity
  - Potential to speed discovery of solutions to societal Grand Challenges, such as health care & environmental science
- Can all research data be open?
- Certain categories probably cannot
  - National security
  - Data protection
  - Commercial Funder requirements

A European skills and qualification matrix for Open Science



Providing researchers with the skills and competencies they need to practise Open Science, Report of the Working Group on Education and Skills under Open Science, 2017, doi: 10.2777/121253

Open Science skills

The Open Science skills for researchers in general can be classified under the four categories which are aligned to the EU's Open Science Monitor. These are:

- **Skills and expertise necessary for open access publications**. Library and research information skills (technical/library research support); open publication literacy skills (research user level).
- **Skills and expertise regarding research data and open access, data production, management, analysis/use/reuse, dissemination** and a change of paradigm from "protected data by default" to "open data by default". Technical skills, in particular, data engineering, data science and data management skills.
- **Skills and expertise to act in and beyond their own scholarly and disciplinary community**. Open Science skills enabling professional research conduct which include research management skills; research integrity and ethics skills; legal skills.
- **Skills and expertise resulting from a general and broad concept of citizen science**, where researchers interact with the general public to enhance the impact of science and research

Providing researchers with the skills and competencies they need to practise Open Science, Report of the Working Group on Education and Skills under Open Science, 2017, doi: 10.2777/121253

National Initiatives

- Since January 2018, UEFISCDI (The Executive Agency for Higher Education, Research, Development and Innovation Funding) is part of the OpenAIRE Advance Consortium as the Romanian NOAD (National Open Access Desk).
- UEFISCDI Agency is currently implementing different activities of training and support on topics related to Open Science and Open Access
- On March 10th, 2020, UEFISCDI, through the Open Science Hub Romania organized the first event at national level dedicated to OS strategic framework development
- 2 platforms which are important national instruments enabling collaboration in science: BrainMap and ERRIS (Engage in Romanian Research Infrastructures System)

Training Needs on target groups

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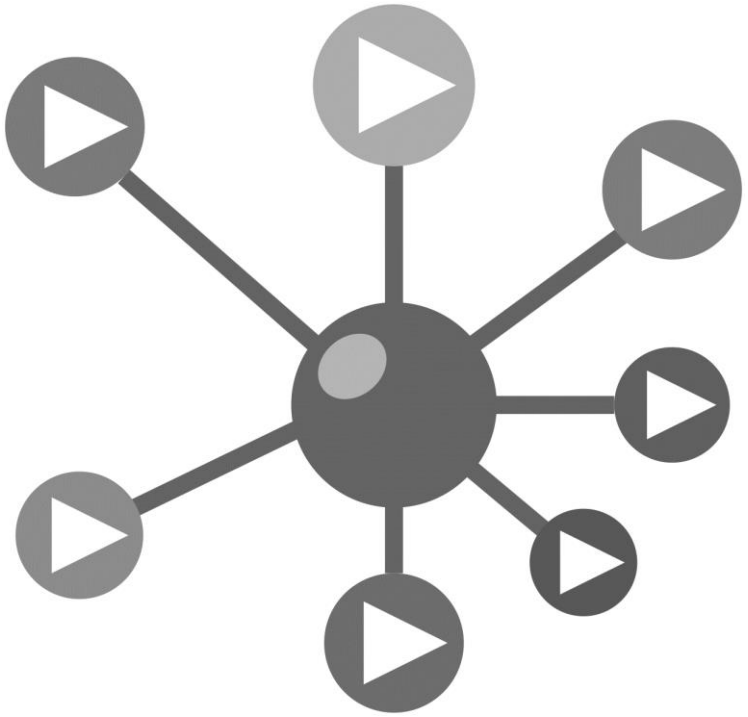
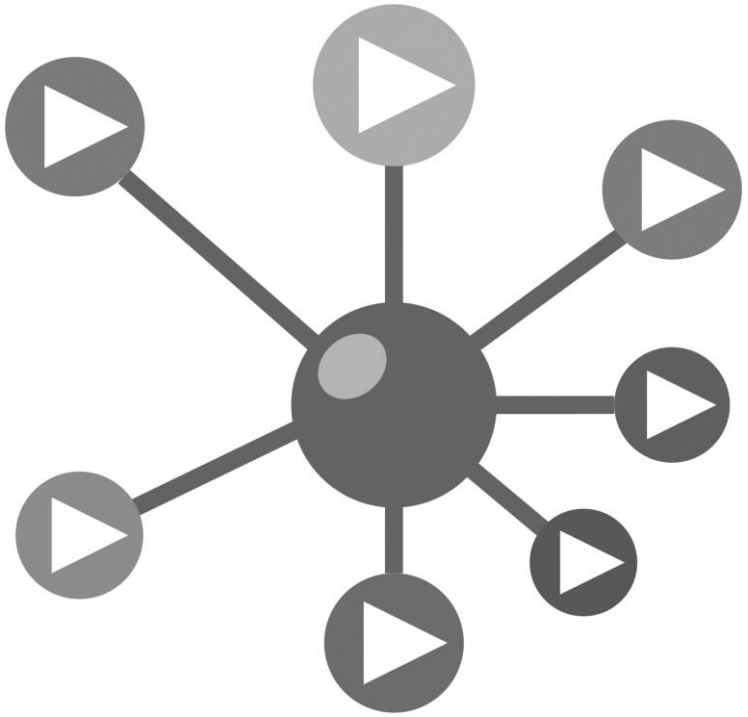
Early Career Researchers (ESR)



- Early career skills (paper publishing, Phd / MS thesis, how to elaborate and write an effective and clear content)
  - To acquire the abilty to use&manage data
  - To broad their future career through new skills in data access

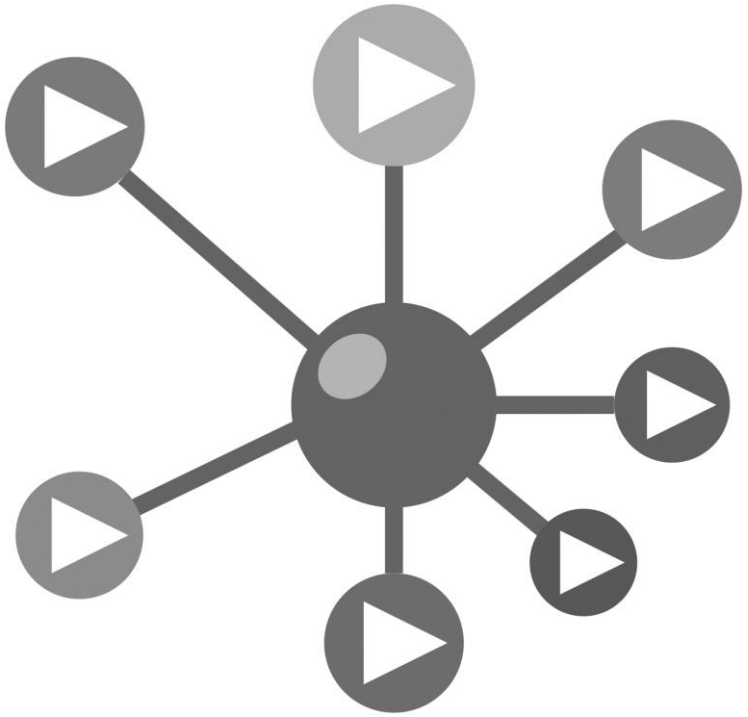
  Key working skills in domain
  - To increase the abilitybto store and re-use
  - To develop the using of IPR and copyright
  - To increase their reseach capacity through open access
- How to research and find relevant information
- Research methods and report writing
- Critical thinking and analysis (to find and filter information)
- Improve soft skills

Researchers (mid and seniors)



- Improve data management skills
- Improve technical skills
- Improve skills and expertise on research data and open access
- Expand skills with knowledge from other domains
- Improve / develop skills on research management skill, ethics skill, legal skill etc.
- Improve data science skills

For all users (general needs)



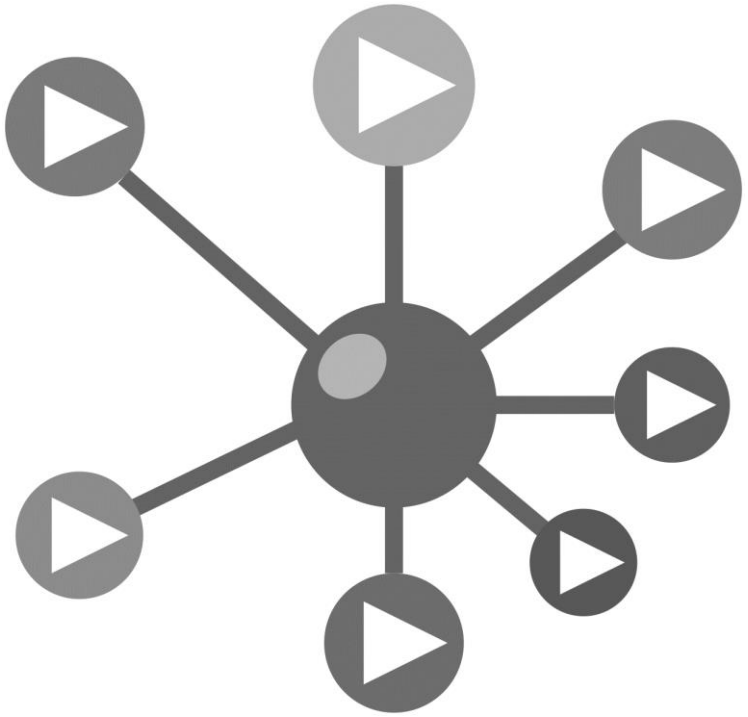
- Increase the awareness on Open Data, Open Science, Open Sources, FAIR Principles, Research Integrity
- Ability to use and manage open data
- Project focused skills
- Discipline specific skills

Training needs and routes for skills development

WHO	Postgrad /PHD	Senior Researcher
WHEN	Early stages of postgraduate study	As needed or at beginning of research project/proposal state
WHAT	Basics of data management practice, data citation, data evaluation	Training on discipline-specific data management practices, how to write a data management plan tailored to funder requirements, data reuse skills
HOW	Credited models	Practical training

AYRIS, P., P. ACHARD and S. FDIDA, et al. **LERU Roadmap for Research Data**. LERU Advice Paper. Leuven: LERU, 2013, vol 14. LERU. Available from: http://www.leru.org/files/publications/AP14_LERU_Roadmap_for_Research_data_final.pdf

Conclusion



- Integrate Open Science concepts and its practical applications in educational and skills development programmes
- Analysing and mapping their needs for Open Science skills training, taking into account the different Open Science dimensions
- Encourage, support and recognise staff and students with regard to Open Science skills development
- Determine how to resource Open Science skills training in a sustainable manner

THANK YOU!

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