

# Circular Research Data Bootcamp: A use case for FAIR training materials

Pedro Hernandez Serrano, Maria Vivas Romero  
*Maastricht University Library*

*01 – Nov - 2022 – LCRDM networking day*



# About

- Trainings on Research Data & Software →  
Maastricht University Library 
- Faculty Data Steward →  
Faculty of Science and Engineering 
- NL eScience Center Fellow 2022 →  
Coordinating Research Software Agenda at UM 
- Background in Data Science and FAIR policy research  
Previously working at Prof. Dr. M. Dumontier group



Pedro Hernández Serrano

[p.hernandezserrano@maastrichtuniversity.nl](mailto:p.hernandezserrano@maastrichtuniversity.nl)

**Github:** pedrohserrano

# Agenda

1. Motivation and context
2. FAIR training materials
3. Deconstructing the way we teach FAIR
4. Hands-on FAIR metadata wizard

# SURF honours 10 proposals in Call for Proposals: Digital Competence Centres go to work on strengthening the RDM landscape

## Pilots

1. SRAM as Identity provider (IdP) for UT-VRE  
University of Twente
2. Validation of Anonymisation Tooling (VAT)  
Amsterdam UMC
3. Bootcamps: Towards Circular Science  
Maastricht University
4. Collaborative Oral History Research Environment (CORE)  
University of Amsterdam
5. Building Containerized Workflow for FAIR Data Cube  
Radboud UMC

# Motivation

## FAIR Training Materials

- Training materials are **Digital Objects**
- Therefore can be FAIR
- Open Science objectives



## Interoperability & Reusability

- Close the gap of FA-IR
- Breakdown the FAIR principles into processes
- Focus on examples
- Deconstructing the way we teach FAIR

# FAIR Training Materials

# What do we need to get there?

- What are the standards to teach Open Science topics?
- How to properly create content on Library Carpentries?
- How to make training materials complaint to FAIR?



# Open Science - Train the Trainers



**1st Open Science  
Train the Trainer Bootcamp**

Online interactive training,  
6-10 June 2022

The background image shows a person's hands holding a laptop, with various text overlays such as '21st-century innovation', 'group activities', 'Open Science, trainers', and 'innovation'.



zenodo Search Upload Communities

November 4, 2021 Journal article Open Access

## D6.12 Report on the SSHOC train-the-trainer bootcamps

Darja Fišer; Erzsébet Tóth-Czifra; Judith Wehmeyer; Veronika Keck; Ellen Leenarts; Ricarda Braukmann; Tatsiana Yankelevich; Cristina Magder

The Zenodo interface includes a search bar, 'Upload' and 'Communities' buttons, and a date stamp of 'November 4, 2021'. The article title is 'D6.12 Report on the SSHOC train-the-trainer bootcamps' and it is marked as a 'Journal article' and 'Open Access'. The authors listed are Darja Fišer, Erzsébet Tóth-Czifra, Judith Wehmeyer, Veronika Keck, Ellen Leenarts, Ricarda Braukmann, Tatsiana Yankelevich, and Cristina Magder.



ABOUT ▾ NEWS EVENTS PROJECT OUTPUTS ▾ RESOURCES ▾

## Third Train-the-Trainer workshop on “FAIR Research Data” will take place on 25-27 April

The DIOSI logo consists of a cluster of colored dots. The navigation menu includes 'ABOUT', 'NEWS', 'EVENTS', 'PROJECT OUTPUTS', and 'RESOURCES', each with a dropdown arrow.

- OS Trainings design
- Pedagogical approaches
- Use cases and knowledge exchange
- Review of open science tools
- Advance examples on, open data, DMPs, OA publishing, Horizon Europe requirements, OpenAIRE services, and EOSC

# Library Carpentries



## A Carpentries-Based Approach to Teaching FAIR Data and Software Principles

A report from the TIB Hannover FAIR Data & Software Workshop (9-13 July, 2018)

By [Chris Erdmann](#)



The Carpentries is an initiative that brings communities of Instructors, Trainers, Maintainers, helpers, and supporters who share a mission to teach digital skills to researchers. It aims efficient, open, and reproducible materials based on crowdsourcing model



## Building digital skills training with The Carpentries

# FAIR principles applied to training materials



Open Science + Carpentries + FAIR =  
**FAIR Training Materials**

## Circular Research Data Coursebook

### The 6-step checklist for Circular Research Data The FAIR principles made easy

Welcome to the Circular Research Data Coursebook! 🤗

**Keywords:** [Research Data Management](#), [Research Data Reuse](#), [Bootcamp](#), [Online Summer Camp](#), [FAIR](#), [FAIR Digital Objects](#).



# Findable and Accessible materials

The screenshot shows the Zenodo interface for a record titled "Circular Research Data Bootcamp". The header includes the Zenodo logo, a search bar, and navigation links for "Upload" and "Communities". The record is dated "August 8, 2022" and lists authors "Hernandez Serrano, Pedro V;" and "Vivas Romero, Maria". A red box highlights the "Lesson" and "Open Access" buttons. Another red box highlights the coursebook link: <https://maastrichtu-library.github.io/circular-research-data-bootcamp/>. A third red box highlights the link to the original event page: [Circular Research Data](#). The abstract text describes the bootcamp's focus on moving from a linear to a circular model of research reproducibility, emphasizing the FAIR principles of research data management.

Allowing  
indexability

The metadata sidebar on the right side of the Zenodo record provides additional information. It includes the "Publication date" (August 8, 2022), the "DOI" (10.5281/zenodo.6974103), and "Keyword(s)" such as "Research Data Management", "Research Data Reuse", "Bootcamp", "FAIR", and "FAIR Digital Objects". The "License (for files)" is listed as "Creative Commons Attribution 4.0 International".

# Interoperable and Reusable materials

## Circular Research Data Bootcamp

Create Slack Account: [The Carpentries](#)

This repository generates the corresponding lesson website from [The Carpentries](#) repertoire of lessons.

### Authors

- Hernández Serrano, Pedro: [p.hernandezserrano@maastrichtuniversity.nl](mailto:p.hernandezserrano@maastrichtuniversity.nl)
- Vivas Romero, Maria: [m.vivasromero@maastrichtuniversity.nl](mailto:m.vivasromero@maastrichtuniversity.nl)

### Citation

Hernández Serrano, Pedro; Vivas Romero, Maria; Library Carpentries: "Circular Research Data Bootcamp"

### Metadata JSON-LD

The following Rich Metadata snippet is embedded in each landing page of the coursebook

#### Metadata JSON-LD

The following Rich Metadata snippet is embedded in each landing page of the coursebook

```
<script type="application/ld+json">
{
  "@context": "https://schema.org",
  "@type": "Course",
  "name": "Circular Research Data Bootcamp",
  "description": "This is the coursebook of the Circular Research Data Bootcamp. This coursebook",
  "version": "v1.0",
  "url": "https://doi.org/10.5281/zenodo.6974183",
  "license": "https://creativecommons.org/licenses/by/4.0/legalcode",
  "dateCreated": {
    "@type": "Date",
    "@value": "2022-08-01"
  },
  "datePublished": {
    "@type": "Date",
    "@value": "2022-08-08"
  },
  "inLanguage": {
    "@type": "Language",
    "name": "EN",
    "alternateName": "EW"
  },
  "keywords": [
    "Research Data Management",
    "Research Data Reuse",
    "Bootcamp",
    "Online Summer Camp",
    "FAIR",
    "FAIR Digital Objects"
  ],
  "creator": {
    "@type": "Person",
    "name": "concat @givenName @familyName",
    "givenName": "Pedro",
    "familyName": "Hernandez Serrano",
    "image": "https://avatars.githubusercontent.com/u/12054964?v=4",
    "jobTitle": "Data Steward",
    "email": "p.hernandezserrano@maastrichtuniversity.nl",
    "affiliation": {
      "@type": "Organization",
      "name": "Maastricht University Library",
      "url": {
        "@type": "URL",
        "@value": "https://library.maastrichtuniversity.nl/research/rdm/"
      }
    }
  }
}
```



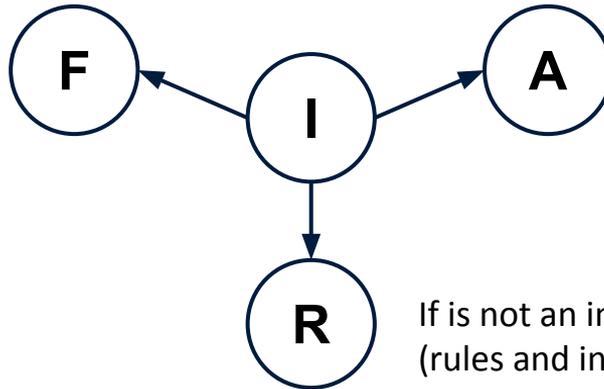
# Deconstructing the way we teach FAIR on 6 steps

# Interoperability the core of FAIR

*“the focus on assisting machines in their discovery and exploration of data through application of more generalized interoperability technologies and standards at the data/repository level, becomes a first-priority for good data stewardship”*

The FAIR Guiding Principles for scientific data management and stewardship (2016 - Mark D. Wilkinson et al.)

Humans and machines  
can't find things if  
DOs aren't indexable



If is not in an interoperable syntax

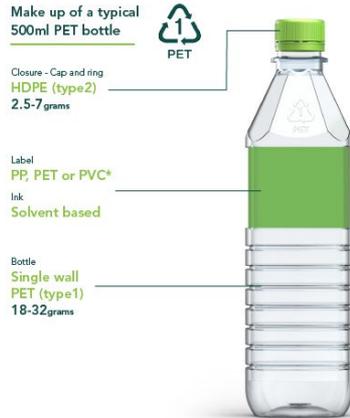
If is not an interoperable context  
(rules and infra)

# To be Interoperable is to become a standard

*“the ability of data or tools from non-cooperating resources to integrate or work together with minimal effort.” FAIR ... (2016 - Mark D. Wilkinson et al.)*

*“Interoperability is the set of properties of an object that allows them to work with other objects.” Wikipedia*

## Interoperability is an old topic in engineering



- Its design has survived for decades
- Benefits user and manufacturer
- Security protocols are developed
- Cross-domain and cross-culture Interoperability
- Infrastructure is built around the shape and material

It's a community agreement



# Interoperability Governance

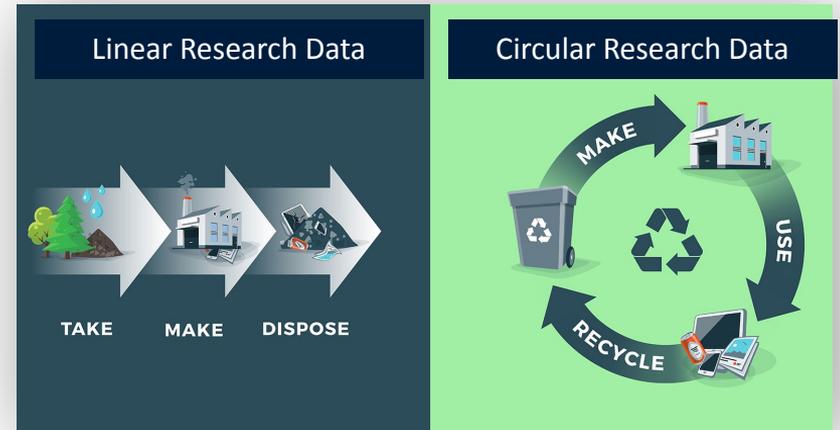
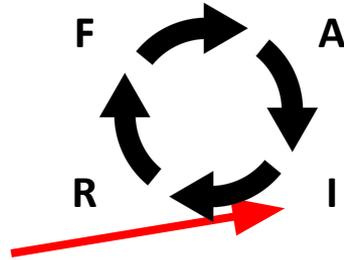


# “Interoperability-first” approach to learning FAIR

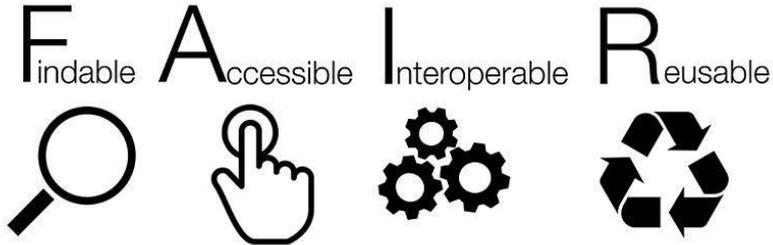


No matter if the plastic bottle is findable and accessible if it's not interoperable (physically, legally, organizationally) it can't be reused

- More examples
- Show tools
- Less theory
- Focus on the “*bottleneck*” of FAIR



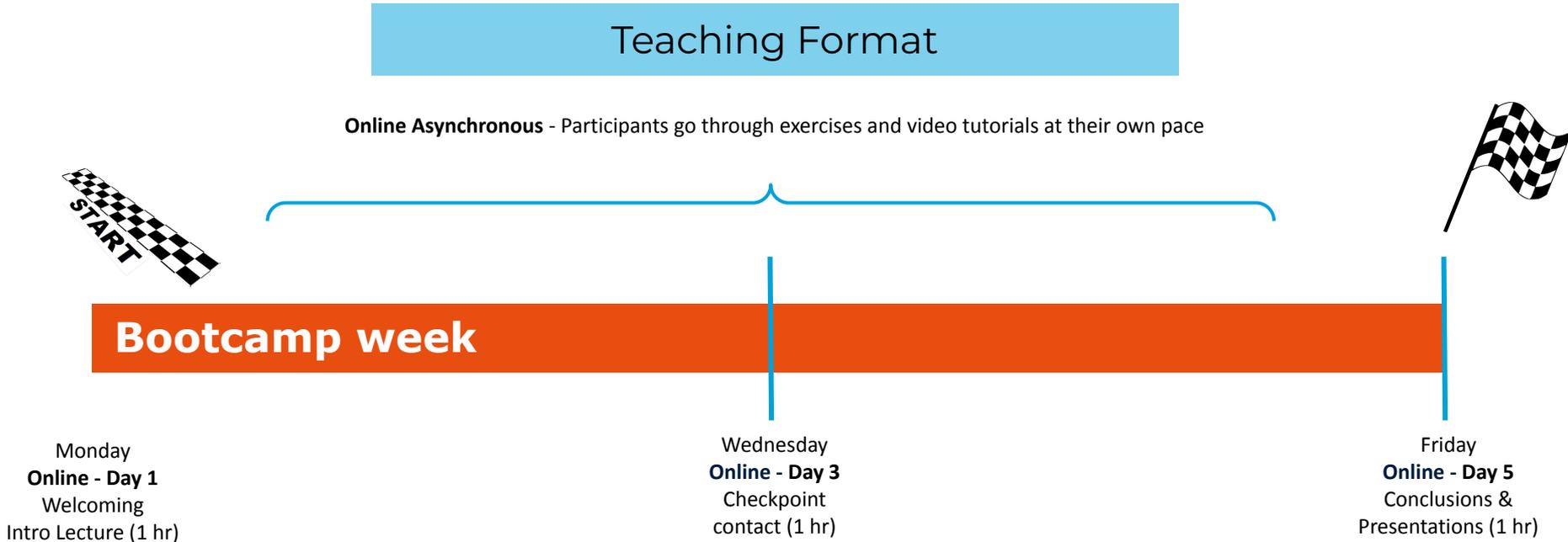
# FAIR Principles



# 6 Steps for Circular Research Data

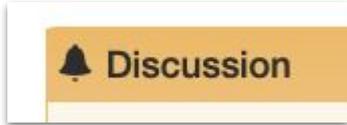
1. Data Terms of Use
2. Data Descriptions
3. Data Access Protocols
4. Data Archiving
5. Rich Metadata
6. Data Reusing

# Piloting the Coursebook



# Communication

Team Mars 



Welcome to your new workspace!

Here are the details for your new Slack workspace, **Circular Research Data Bootcamp**.

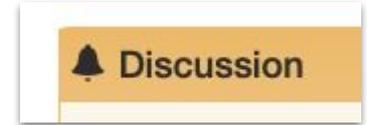


**Circular Research Data  
Bootcamp**

[circular-researchdata.slack.com](https://circular-researchdata.slack.com)

OPEN SLACK

Team Saturn 



10 mins presentation on Friday

# Feedback

 **Maastricht University**

---

Circular Research Data Bootcamp 

---

Please rate this training 😊

0    10    20    30    40    50    60    70    80    90    100

★

---

Please write a review 📝

*“Great materials with practical examples and nicely organized (GitHub pages, slack channels, zoom meetings, presentations)”*

*“I learned a lot about the materials and practical examples. About the accessibility of data”*

# Hands-on FAIR metadata wizard

Where to

[maastrichtu-ids.github.io/fair-metadata-wizard/](https://maastrichtu-ids.github.io/fair-metadata-wizard/)

[bit.ly/FAIRmetadata](https://bit.ly/FAIRmetadata)

# Circular Research Data Bootcamp: A use case for FAIR training materials

Pedro Hernandez Serrano, Maria Vivas Romero  
*Maastricht University Library*

*01 – Nov - 2022 – LCRDM networking day*

# Thank you!

