

A Guide to FAIR BioImage Data

Online
Workshop



23 May
2024

14:00 –
17:00
CEST

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Practical Sessions



Instructions:

Look at the dataset and identify the following aspects for the different “Letters” of FAIR.

<https://zenodo.org/records/10937403>

FAIR in the real world



3 min

FINDABLE
ACCESSIBLE
INTEROPERABLE
REUSABLE



F

1: What is the persistent identifier of the dataset?



A

2: What is the access protocol? Is access restricted?

3: In which formats are the data? Are they standard and open?



I

4: Which links to other data are present?

5: How extensive is the metadata?



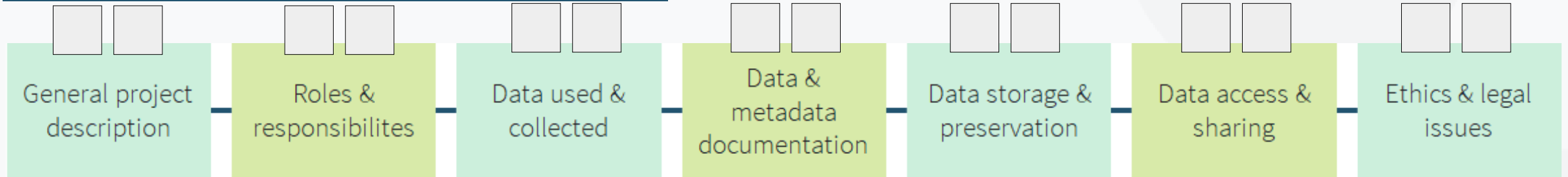
R

6: What is the license and does it allow for reuse?

Instructions:

Place the labels of each action during a bioimaging project to the sections of the DMP in which you describe them.

Data Management Plan



1

1: Develop a strategy for file naming and organization

2

2: Perform image analysis using a computational workflow

3

3: Back-up relevant data

4

4: Perform life cell imaging and convert images to open file format

5

5: Record metadata according to REMBI scheme

6

6: Publish open access and deposit images in trusted repository

7

7: Transfer files from instrument PC to cloud storage

8

8: Deanonimize health data

9

9: Consult with data steward

10

10: Write abstract for the project

Journal policies



Instructions:

Go to the website of the eLife Journal and report on their policies regarding:



<https://elifesciences.org/>

1: What are their policies on FAIR data?

2: What are their policies on data availability?

3: Do they recommend/require specific repositories for bioimaging data?

Instructions:

Place the labels of the metadata elements in the correct categories within REMBI

(<https://www.ebi.ac.uk/bioimage-archive/rembi-help-overview/>)

1: Analysis software

2: Drug treatment

3: Organism name according to NCBI

4: Multiple imaging methods

5: Microscope manufacturer

6: sample preparation protocol

7: Pixel size

8: Funding statement with GrantID

9: Spatial alignment procedure

10: Emission wavelength

Categories of REMBI



Instructions:

Place the label of each dataset to the archive(s) it could be deposited

Where do I deposit my dataset?



1

1: FIB SEM of mouse brain tissue
(Focussed ion-beam scanning electron microscopy)

2

2: Drug screening with high-content
fluorescence microscopy

3

3: MRI visualization of neuroinflammation in
mice *(Magnetic resonance imaging)*

4: Correlative Light and Electron
Microscopy of marine microorganisms

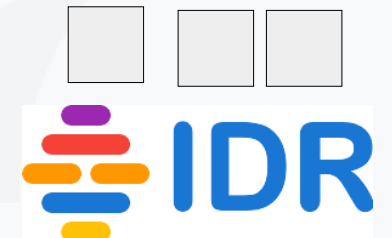
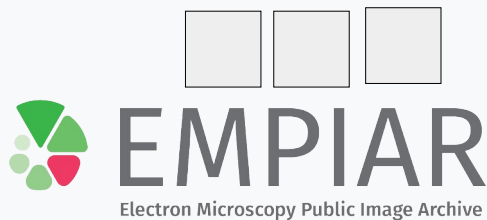
4

5: MRI of breast cancer patients

5

6: Segmentation masks for human cells
expressing sphingolipid marker

6



Browsing BioImage Repositories



Instructions:

Search for 'SARS-CoV-2' in all 5 repositories.
How many datasets do you find in each one?
Is this result surprising?

Choose one dataset from one of the repositories and report on:

		# datasets
	https://www.ebi.ac.uk/bioimage-archive/	<input type="text"/>
	https://www.ebi.ac.uk/empiar/	<input type="text"/>
	https://idr.openmicroscopy.org/	<input type="text"/>
	https://pidar.hpc4ai.unito.it/index.php	<input type="text"/>
	https://www.cancerimagingarchive.net/	<input type="text"/>

Title:

Author(s):

Licence:

Size of dataset:

Imaging method:

Organism that was imaged:

Links to other data:

Bonus: Think of an experiment to reuse this dataset?