# List of attendees (names and UUID!!!)

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## Open Science and FAIR principles

### Exercise 1

Below are some personal benefits to adopting Open Science practices. Read through them, select the 3 most important/attractive for you and mark them with +1, select two least important for you and mark them with 0

* get extra value from your work (e.g. collaborators, reuse by modellers, ML specialists):
* complying with funders’ policies:
* receive higher citations:
* demonstrate research impact:
* save own time (reproducibility but also communication overhead):
* become pioneers:
* distinguish yourself from the crowd:
* plan successful research proposals:
* gain valuable experience:
* form community:
* increased speed and/or ease of writing papers:
* speed up and help with peer review:
* build reputation and presence in the science community:
* evidence of your scientific rigour and work ethic:
* avoid embarrassment/disaster when you cannot reproduce your results:

 DONE:

### Exercise 2 (5+3)

Data from publications

## Exercise 2a. Impossible protocol (Room1, Room2)

You need to do a western blot of the protein Titin, the largest protein in the body with a molecular weight of 3,800 kDa. You found a Titin-specific antibody sold by Sigma Aldrich (‘SAB1400284’) that has been validated in western blots and immunofluorescence. The Sigma SAB1400284 webpage lists the publication by Yu et al 2019 (<https://doi.org/10.1002/acn3.50831>) which uses the antibody.

**Can you find a complete protocol for separation and transfer of this large protein?**

* Hint 1: Find the Western blot in the methods section.
* Hint 2: Follow the references

How easy was it?

Answers:

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## Exercise 2b. Impossible average (Room3, Room4, Room5)

The Ikram 2014 (<https://doi.org/10.1093/jxb/err244>) paper contains data about various metabolites in different accessions (genotypes) of *Arabidopsis* plants*.* You would like to calculate the average nitrogen content in plants grown under normal and nitrogen limited conditions.

**Please calculate the average (across genotypes) nitrogen content for both experimental conditions.**

* Hint 1. Data are in Supplementary data (Experiment 2 - <https://academic.oup.com/jxb/article/63/1/91/552676#supplementary-data> )
* Hint 2. Search for nitrogen in paper text to identify the correct data column.

Answers:

-

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### Exercise 3

### Look at the dataset from Zenodo

### <https://doi.org/10.5281/zenodo.6339631>

### Identify elements that make this dataset FAIR

### Findable:

### -

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### Accessible

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### Interoperable

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### Reusable

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DONE:

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## Metadata

### Exercise 4

What information – metadata would you need to re-use the data like in example picture.

**Think as a consumer** of the data not producer.

Type your proposals:

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## Record keeping

### Exercise 5:

**Differences between analog and digital record keeping**

Compare the electronic version of the tea protocol:

<https://www.protocols.io/view/how-to-make-a-cup-of-tea-buhknt4w>

with the paper one from the photo:

<https://github.com/carpentries-incubator/fair-bio-practice/blob/gh-pages/fig/06-handwritten-tea-protocol.jpg>

What are advantages and disadvantages of traditional analog records vs digital records? Try to find at least a handful of advantages and disadvantages for each. With all of these, which system do you think is most advantageous?

**Room1 & Room3 & Room5 room**

Advantages of traditional analog records

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Advantages of digital records

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**Room2 & Room4 room**

Disadvantages of traditional analog records

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Disadvantages of digital records

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## LINKS

Example record:

<https://benchling.com/s/etr-0FdV1H0rpWeHk4H72NOg/edit>

Our ELN resources

<https://www.wiki.ed.ac.uk/x/f0SkGw>

Benchilng tutorial:

<https://www.wiki.ed.ac.uk/display/RDMS/Benchling+%28quick%29+tutorial>

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## Working with Files

### Exercise 6

**A good name**

Select which file options adhere the best to the presented recommendations:

1.

a) analysis-20210906.xlsx

b) rna-levels-by-site.v002.xlsx

c) analysis of rna levels from 5Aug2021.xlsx

2.

a) 20210906-birds-count-EDI.csv

b) birds.csv

c) birds-count&diversity EDI 2021-09-06.csv

3.

a) 2020-7-12\_s2\_phyB\_+\_SD\_t01.raw.xlsx

b) ld\_phyA\_on\_s02-t01\_2020-07-12.norm.xlsx

c) ld\_phya\_ons\_02-01\_2020-07-12.norm.xlsx

DONE:

### Exercise 7

**Projects structure**

Have a look at the four different folder structures A-D.

<https://github.com/carpentries-incubator/fair-bio-practice/blob/gh-pages/fig/07-file_organisation.png>

The first two” A) B) are recommended for computing, the other two: C) D) are for more wet/biological projects.

**Room1 & Room2:**

When/why would you use A) and when/why B)

A)

B)

**Room3 & Room4 & Room5:**

When/why would you use C) and when/why D)

C)

D)

DONE:

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## Resources for Data Management

BioRDM wiki

<https://www.wiki.ed.ac.uk/display/RDMS>

RDS page

<https://www.ed.ac.uk/information-services/research-support/research-data-service>

DataStore

* <https://www.ed.ac.uk/information-services/computing/desktop-personal/connect-uni-file-storage>
* <https://www.wiki.ed.ac.uk/x/tet_H>

Sharepoint

[https://uoe-my.sharepoint.com](https://uoe-my.sharepoint.com/)

UoE WIKI

[https://www.wiki.ed.ac.uk](https://www.wiki.ed.ac.uk/)

DMPOnline

[https://dmponline.dcc.ac.uk](https://dmponline.dcc.ac.uk/)

Protocols.io

<https://www.protocols.io/>

UoE DataShare

<https://datashare.is.ed.ac.uk/>

**FAIR in (bio) practice**

22-25 November in the afternoons

<https://edcarp.github.io/2022-11-22_ed-dash_fair-bio-practice/>

Exercise 8

Quiz

Which of the following statements are true/false? T or F

* F in FAIR stands for free.
* Sharing numerical data as a .pdf in Zenodo is FAIR.
* Sharing data as an Excel file is not FAIR.
* Group website is a good place to share your data.
* Data from failed experiments are not re-usable.
* Data should always be converted to Excel or .csv files in order to be FAIR.
* A DOI of a dataset helps in getting credit.
* FAIR data are peer reviewed.
* Open Science relies strongly on the internet
* Good record keeping ensures transparency
* There are advantages to using analog record keeping when compared to digital record keeping.
* On balance, digital record keeping is more advantageous than analog record keeping.
* ‘output 3-Aug-2022’ is a good file name
* Digital records are easier to search (for and within) than analog records.

DONE:

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### Feedback:

1. How do you feel about the presented topics after this session (type +1 next to the statement that best describes your feeling):

• I am more confused:

• I have a better understanding of them now:

• My knowledge has not changed much:

2. How was the pace of the lesson:

• Too fast:

• About right:

• Too slow:

3. If the lesson could be 5 minutes longer, what would you add or spend more time on:

4. What could be improved:

5. What did you like: