https://pad.carpentries.org/ed-dash-fair-try-2021-05-20

**Being Fair Episode Notebook**

Part of FAIR in (bio) practice, <https://carpentries-incubator.github.io/fair-bio-practice>

Type your name:

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**Exercise 1a, Protocol**

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 an antibody sold by Sigma Aldrich that has been validated in western blots and immunofluorescence. Sigma Aldrich lists the publication by Yu et al 2019 (<https://doi.org/10.1002/acn3.50831)> which uses their 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?

**Exercise 1b, Average content**

Ikram 2014 (<https://doi.org/10.1093/jxb/err244>) paper contains data about various metabolites in different accessions (genotypes) of Arabidopsis plant. You would like to calculate average nitrogen content in plants grown under normal and nitrogen limited conditions. Please calculate the average (over genotypes) nitrogen content for the two experimental conditions.  
  
Hint 1. Data are in Supplementary data  
Hint 2. Search for nitrogen in paper text to identify the correct data column.

**Exercise 1c, Data from figure**

Systems biologists usually require raw numerical data to build their models. However, those are sometimes not easy to find. Take a look at the following example: Try to **find the numerical data** behind the graph shown in **Figure 6** (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC166576/figure/F6/)> which demonstrates changes in levels of phytochrome proteins of Sharrock RA and Clack T, 2002 (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC166576/)>.

Hint 1: Materials and methods describe the quantification procedure

Hint 2: Supporting Information or supplementary materials sections often contain data files.

How easy was it?

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**Exercise 2. FAIR Example**

Uniprot is a high-quality and freely accessible resource of protein sequence and functional information.

Have a look at the record of the GFP protein: <https://www.uniprot.org/uniprot/P42212>

Identify elements that make it FAIR

Findable:

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Accessible

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Interoperable

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Reusable

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**Exercise 3. FAIR and You**

The FAIR acronym is sometimes accompanied with the following labels:

* Findable  - Citable
* Accessible   - Trackable and countable
* Interoperable  - Intelligible
* Reusable   - Reproducible

Using those labels as hints discuss how FAIR principles directly benefit you as the data creators.

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**Exercise 4. FAIR Quiz**

Which of the following statements is true/false (T or F).

* F in FAIR stands for free.
* Only figures presenting results of statistical analysis need underlying numerical data.
* Sharing numerical data as a .pdf in Zenodo is FAIR.
* Sharing numerical data as an Excel file via Github is not FAIR.
* Metadata standards (for example MIAME MIQUE) assure the “IR” in FAIR.
* Group website a 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.
* FAIR data accompany a publication.

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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.      Thinking of your knowledge of the lesson topic and its presentation,

which one of the statements best characterize your experience (type +1

next to the statement)

•       I am a novice, and I found the course useful/informative:

•       I am a novice, but I think the course should be improved:

•       I have experience in the presented area, but I found the course

useful/informative:

•       I have experience in the presented area, and I think the course could

be improved:

3.      How was the pace of the lesson:

•       Too fast:

•       About right:

•       Too slow:

4.      If the lesson had to be 5 minutes shorter, what would you remove:

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5. If the lesson could be 5 minutes longer, what would you add or spend

more time on:

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