ExplORe Series
Research Integrity and Reproducibility

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7th November ‘23

What do we mean by research integrity?

- Research Integrity = Good Practice

- Reliability
- Honesty
- Respect
- Accountability

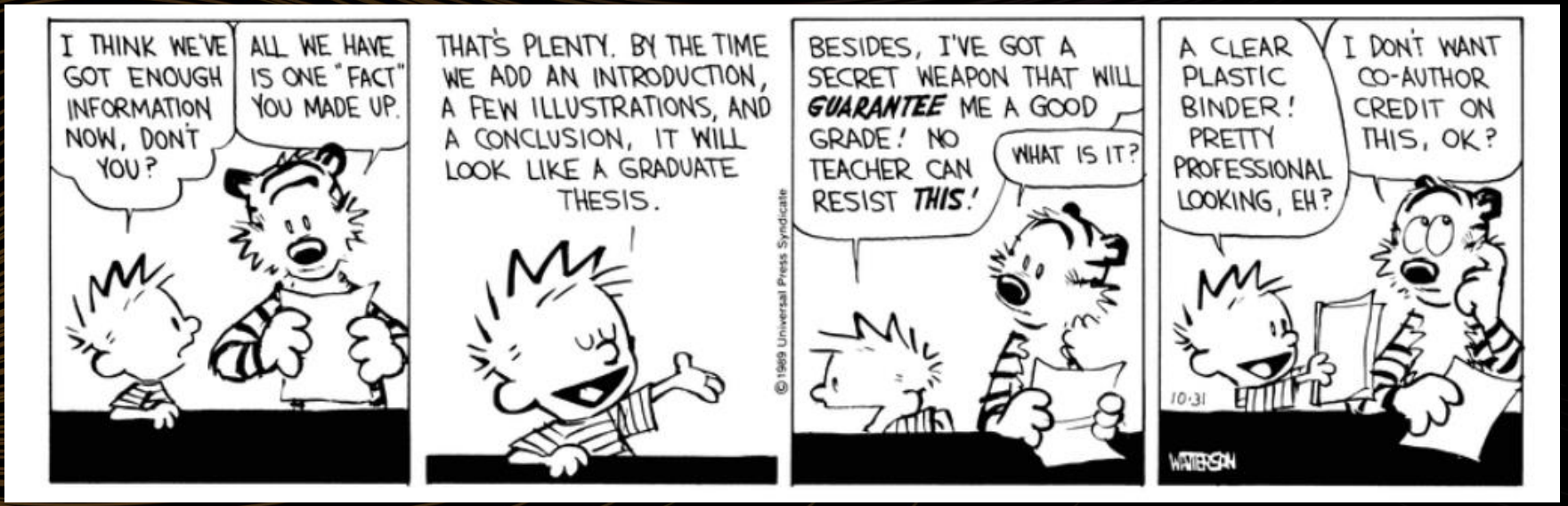
Screengrab, CO:RE Ethics Webinar, 04 May 2021

Bad practice

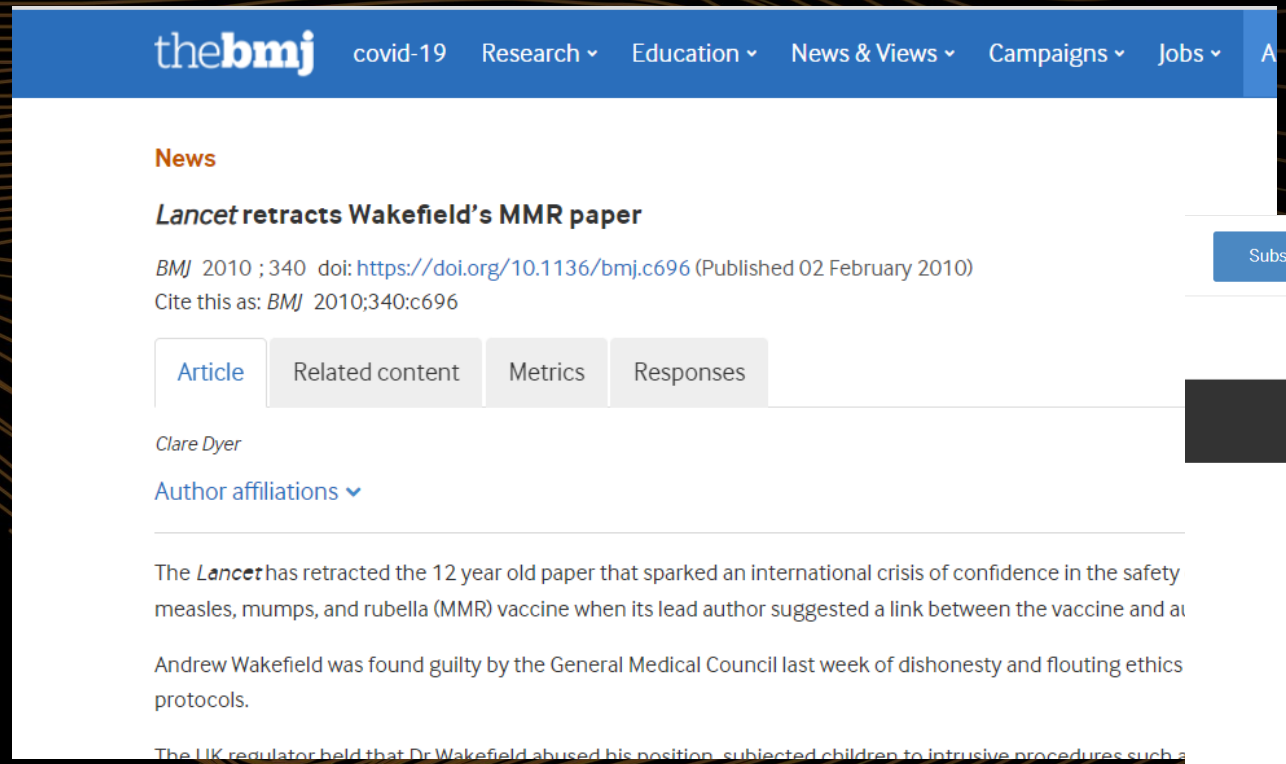
- European Code of Conduct for Research Integrity

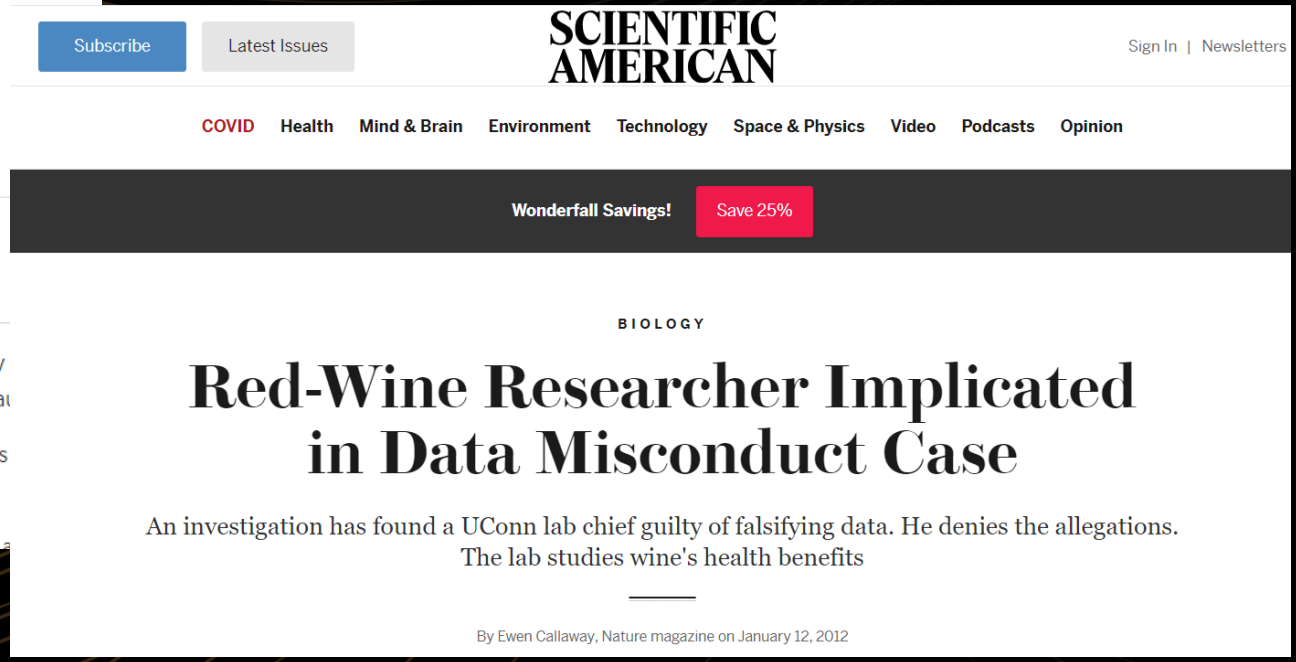
Research Misconduct :

- Fabrication
- Falsification
- Plagiarism



Bad practice





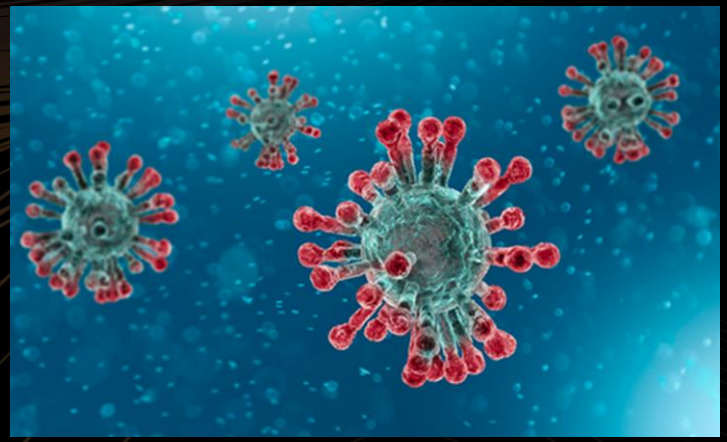
Poor research practices

- HARKing – Hypothesising after the results are known
- P-Hacking – Results are manipulated to show statistical significance
- Outcome switching – Certain results are not reported and some may be highlighted

Retraction Watch

- Retractions were not announced
- Reasons were not made public
- Decisions may then be made based on invalid results

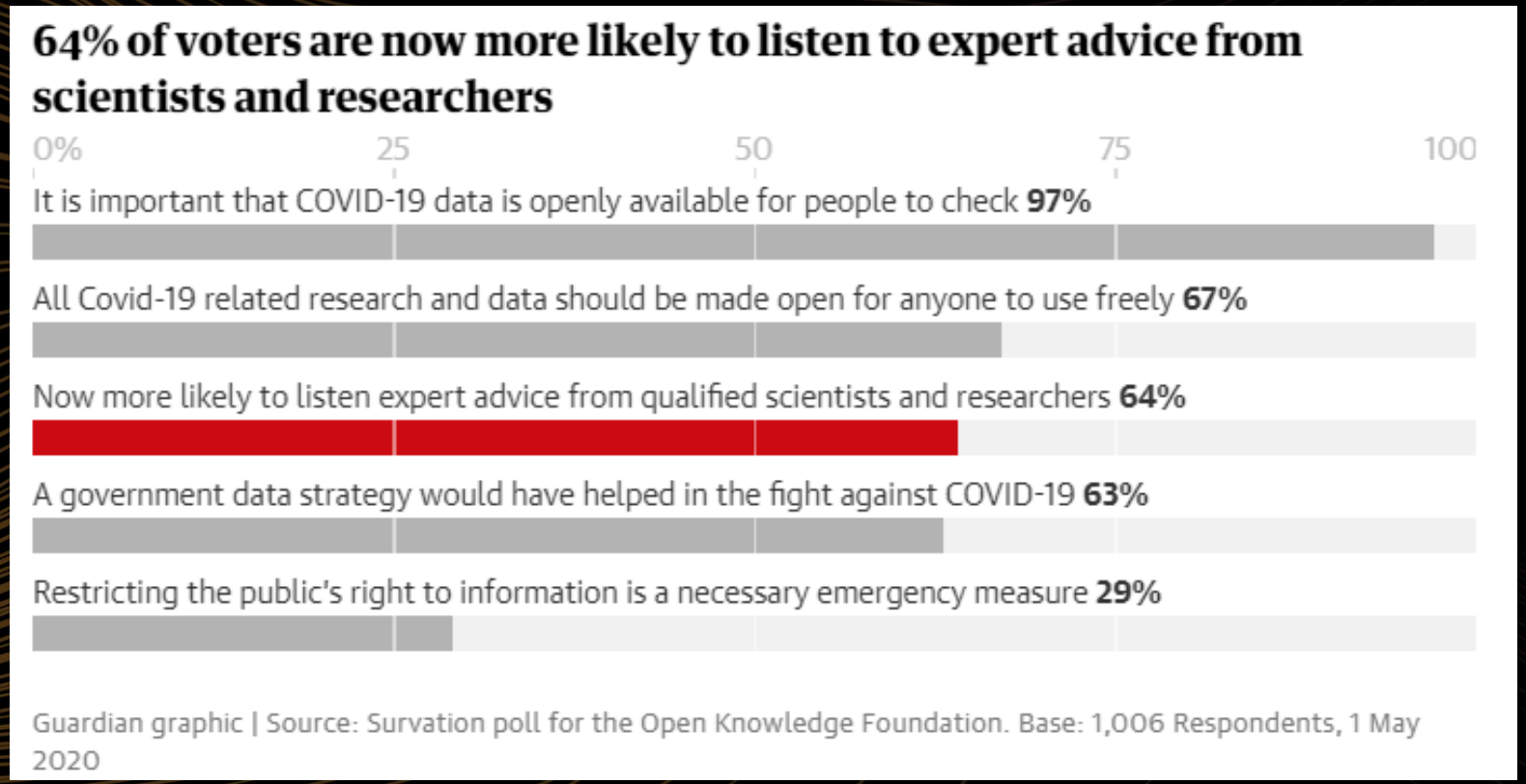
376 retractions on COVID papers



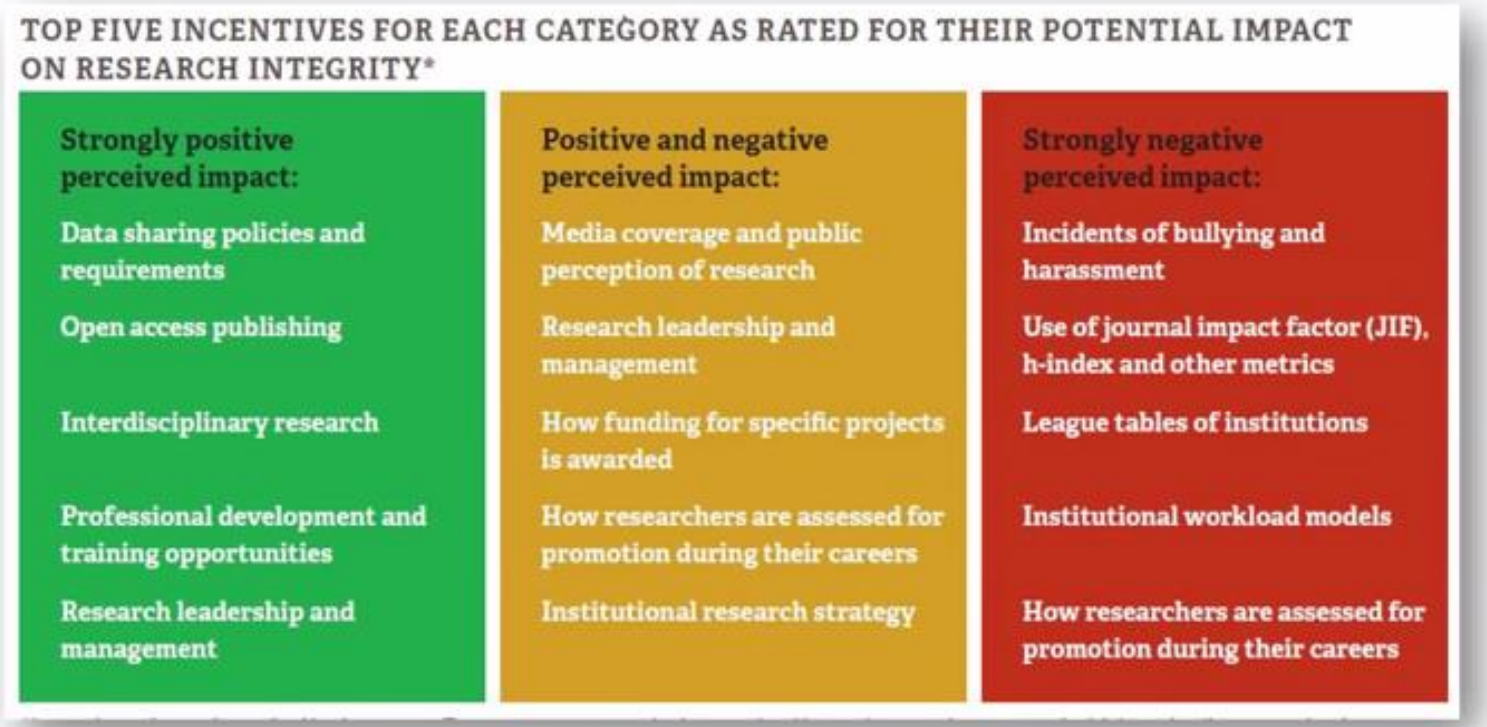
Blog started in 2010 ‘Wonder if we’ll have enough material’
By October 2023 nearly 47,500 entries

Research Integrity

97% of people asked state that they want to see the data



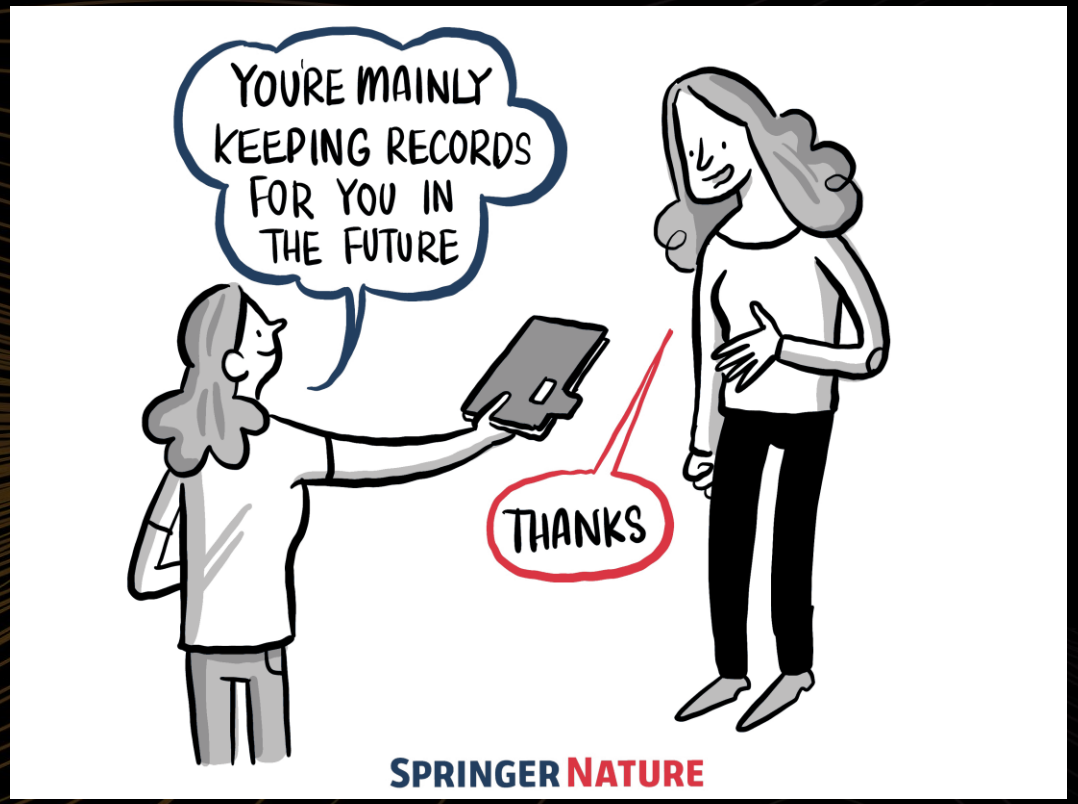
Academic pressures and consequences



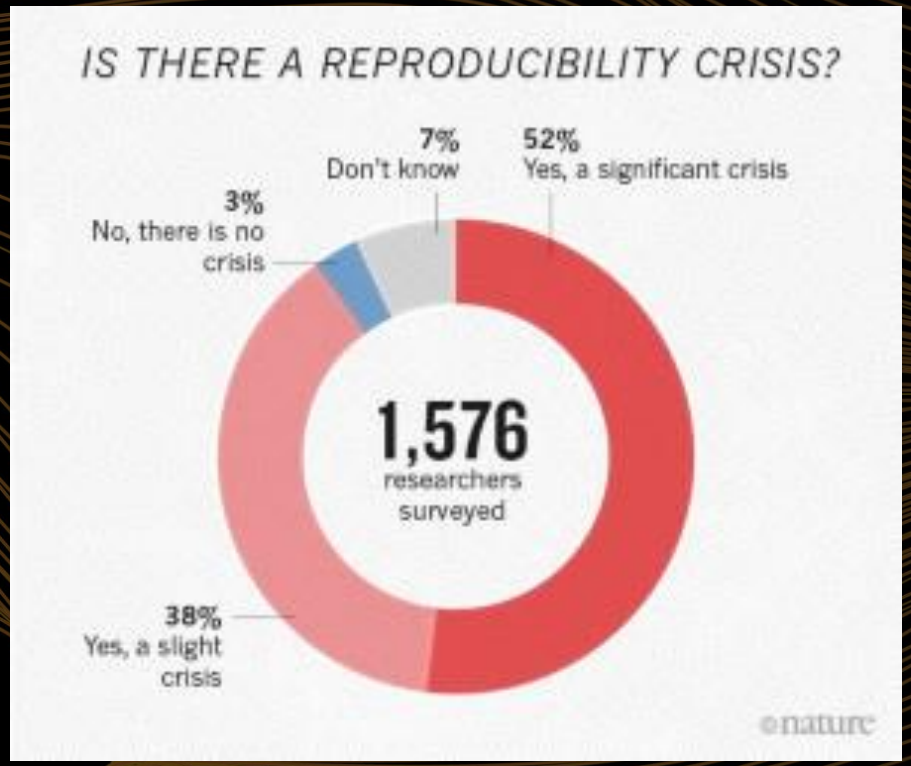
Source: *Research Integrity: a landscape study*, June 2020. Vitae, UKRIO and UKRN, on behalf of UKRI

Barriers

- Time – It takes time
- Not currently part of the promotions process
- May require additional skills
- Your work may be critiqued



Reproducibility



Reproducibility :

The same analysis with same data/code – but performed by a different person

Replicability :

Re-performing the experiment but using your own data – to create your own results

"More than 70% of researchers have tried and failed to reproduce another scientists experiments, and more than half have failed to reproduce their own experiments" —Baker, Nature 2016

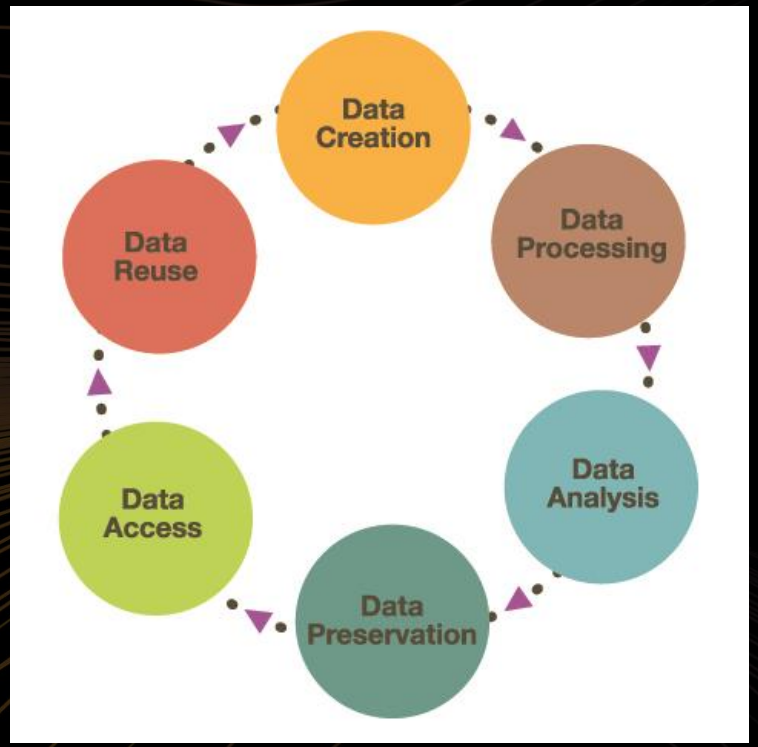
Pre-registation

- Deposit your study design in a repository
- Submit a pre-registration/registered report to a journal

- Helps fight biases and HARKing
- Creates a more complete scientific record

Open Data

- After publication share Data
  - Metadata
  - Code
  - Materials
- Share in a repository (OSF, Zenodo, Figshare)
- Link to your datasets to your institutional repository - PURE



Publish Data – Where?

Journal service for supplementary material	Institutional data repository	Generic repository	Disciplinary repository
Meet publisher requirements	Accept various types of data, ensure long-term access	Reach a wider audience.	Offers expertise and experience in data management
Data available from published results	More reliable and there will be no costs	Accepts several types, suitable for interdisciplinary data	Likely to accept complete data sets
It can be costly and risky with data rights	May not offer long-term sustainable access	Usually only simple metadata is available	Selective in the type of data they accept
Closed and unlikely access to ensure preservation	May not have disciplinary metadata	No editorial control over the quality of deposited materials	Requires planning and high standards, may incur costs

Sharing Research Data, Pedro Principe, OpenAIRE 7/17/22

FAIR

Findable
- Metadata
- PIDs
- Repositories

Accessible
- Metadata
- Open file formats and software

Interoperable
- Metadata
- Ontologies
- Repositories

Reusable
- Metadata
- Licences

Open Access

Makes research available to readers at no cost as opposed to the traditional subscription or paywall model

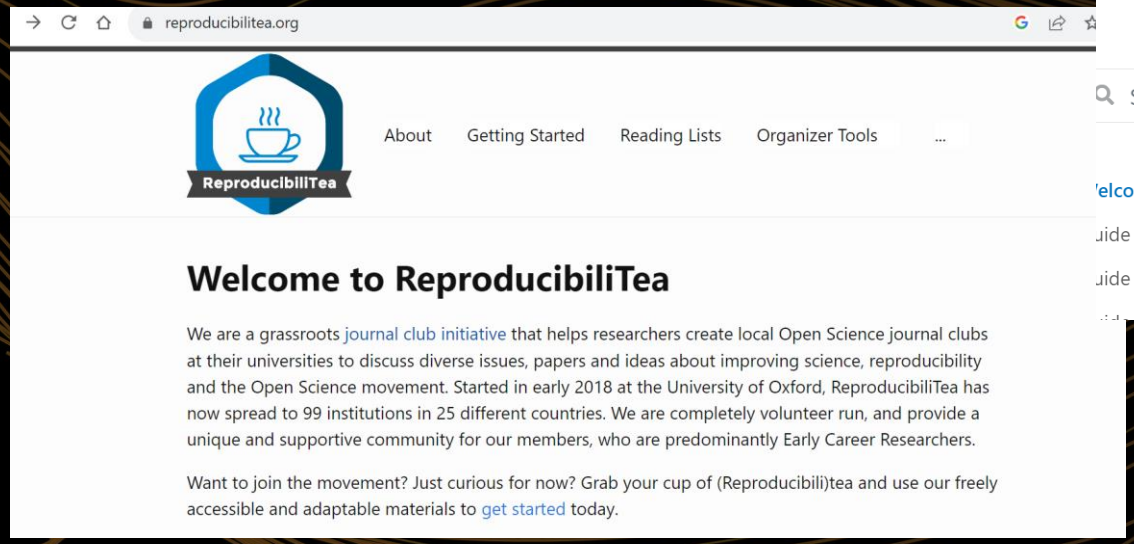
Gold – Fully open access journals with fees/APCs covered by author or institution
Hybrid Journals allow open access on payment of APC

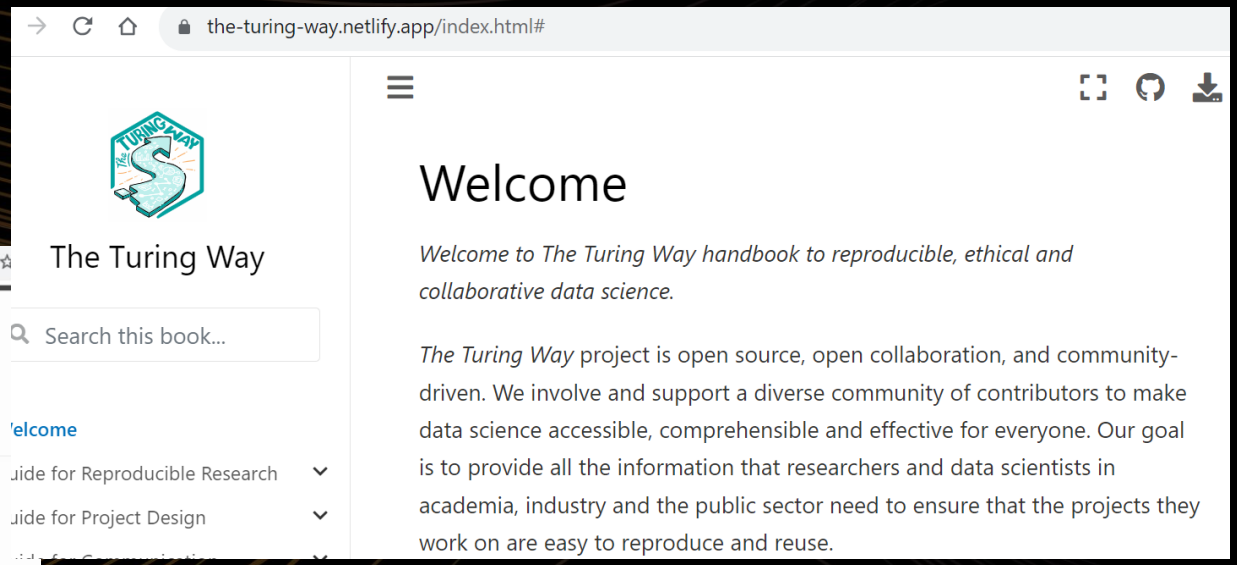
Green – A version (AAM) can be submitted to an institutional repository after an embargo period. Or make immediately available by retaining your rights

Diamond – no APCs, usually funded by other sources

Turing Way/Reproducibilitea

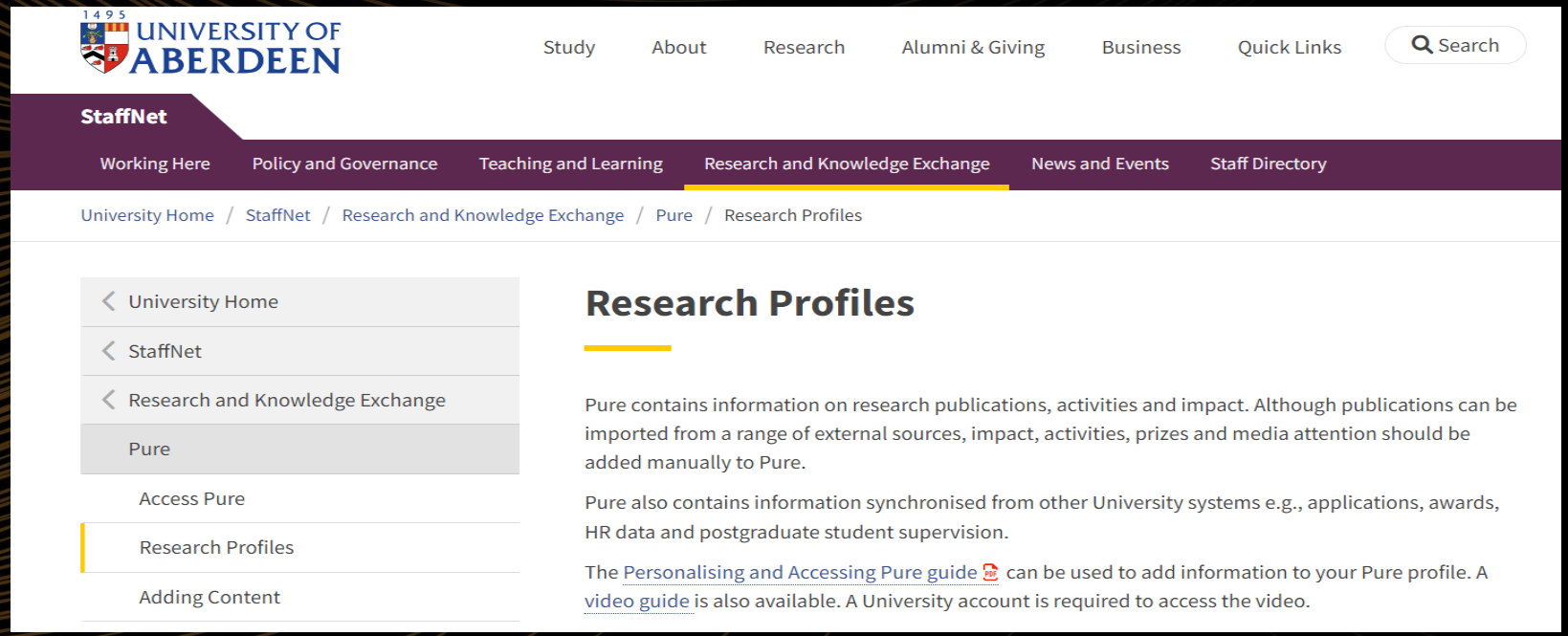
Explore the resources available





PURE

- PURE is our Institutional Repository for research outputs and research data
- Keep your PURE profile up to date as this populates the Public Research Portal



Thank you

Thank you for listening

- Any Questions?
- Contact openresearch@abdn.ac.uk if we can help you in any way

Thank You