UK Research Integrity Office

The Interplay of Research Integrity & Open Scholarship

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UK Research Integrity Office

UKRIO is a charitable advisory body
We are not a regulatory organisation
We have no formal legal powers

We help institutions achieve high standards, manage challenges to research integrity, and support people faced with bad practice

Our advice and guidance emphasises the good practice that runs across all research disciplines and all regulatory remits

ukrio.org/our-work/get-advice-from-ukrio

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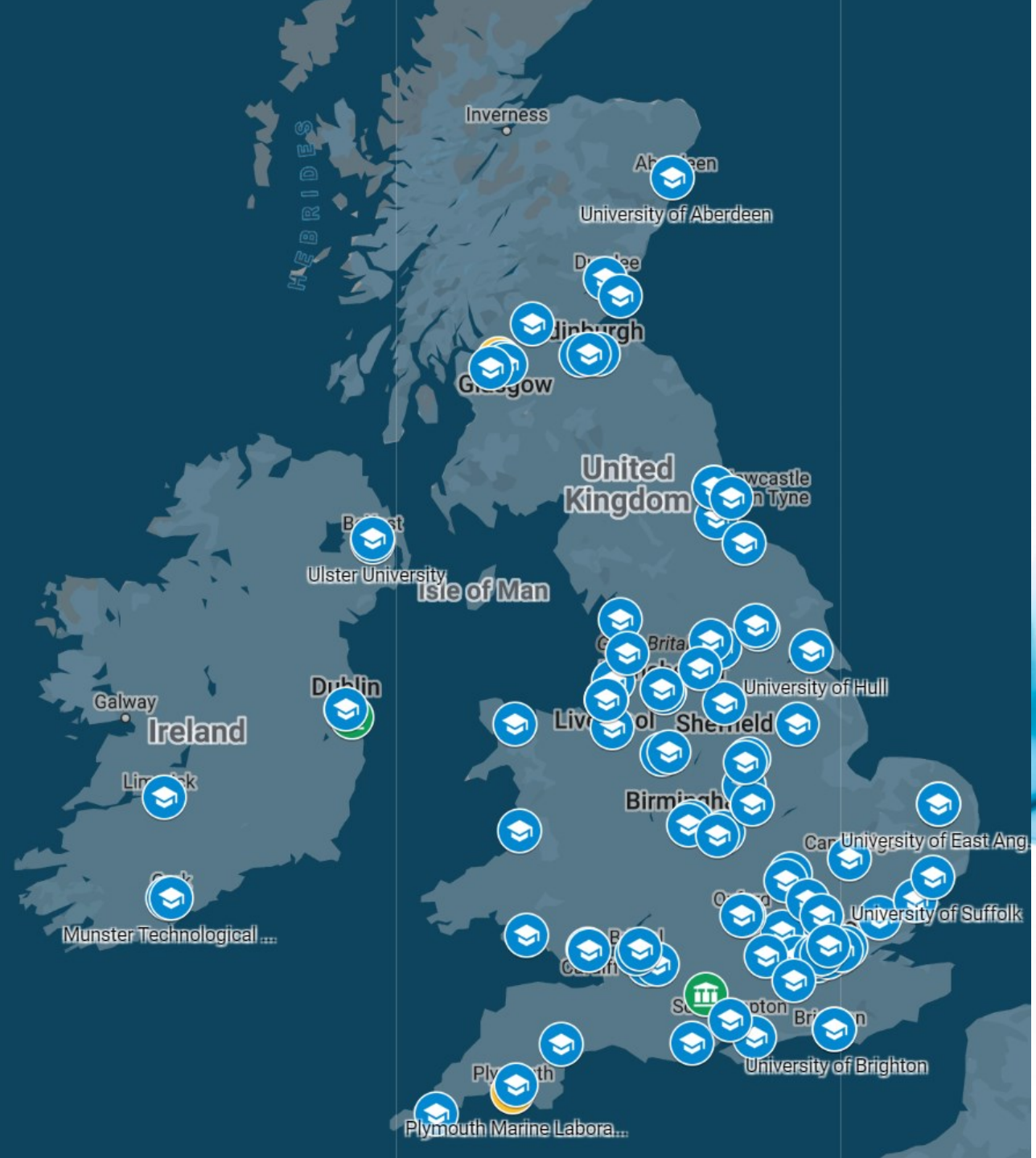

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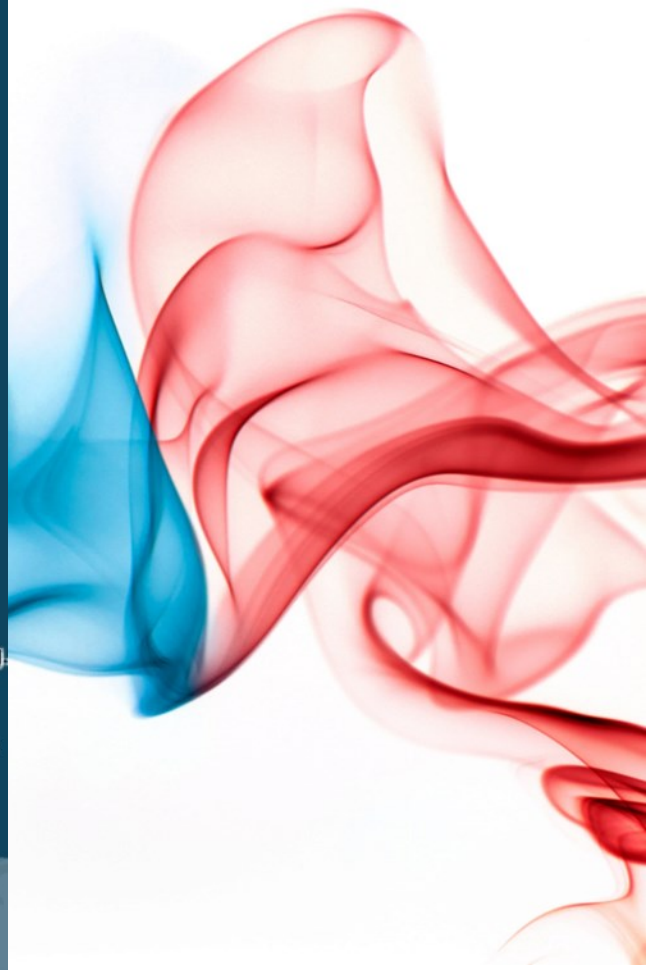

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Integrity & Openness

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Aims of open scholarship & research integrity often align:

Transparency & collaboration → reproducibility & trust

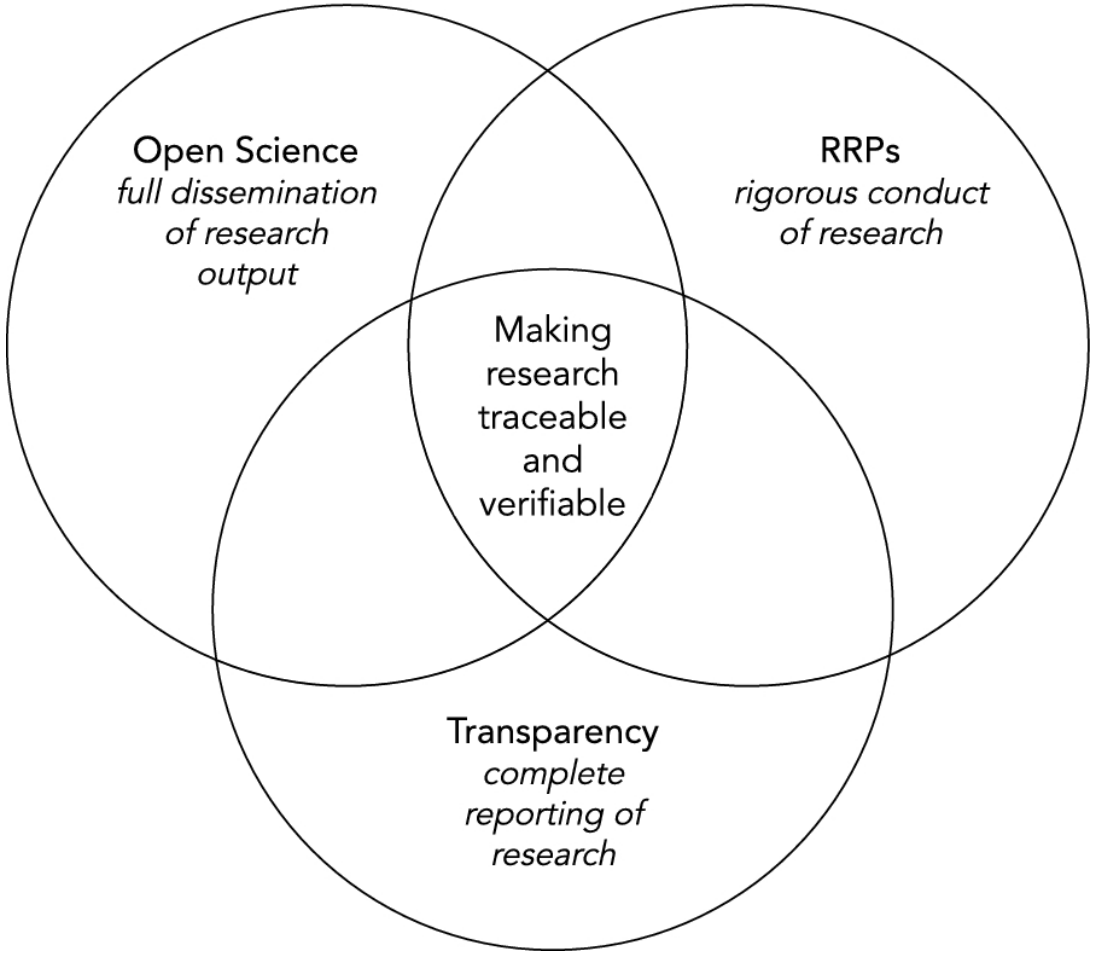
Open access, data, code, peer review, & methods may help RI

Openness & integrity are not the same and priorities may clash:

Ethical principles, e.g., protecting people, the environment, may limit openness

Perceived risks of open practices, e.g., pre-printing & citizen science

Integrity & Openness



Haven, T., Gopalakrishna, G., Tijdink, J. *et al.* **Promoting trust in research and researchers: How open science and research integrity are intertwined.** *BMC Res Notes* **15**, 302 (2022) doi.org/10.1186/s13104-022-06169-y; creativecommons.org/licenses/by/4.0/

Integrity & Openness

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"The current understanding of RCR [Responsible Conduct of Research] is too focused on traditional publications and the so called FFP [Fabrication, Falsification, and Plagiarism] definition of research misconduct to fully support open science."

Laine, H. (2018). **Open science and codes of conduct on research integrity.** *Informaatiotutkimus*, *37*(4). doi.org/10.23978/inf.77414

Research Integrity

- **Honesty** in all aspects of research
- **Accountability** in the conduct of research
- **Professional courtesy and** working with others
- **Good stewardship** of resea of others

wcrif.org/guidance/singapor

Research Integrity

Honesty in all aspects of research, including in:

- presentation of research goals, intentions & findings
- reporting on research methods & procedures
- gathering data
- using & acknowledging the work of other researchers
- conveying valid interpretations & justifiable claims based on research

universitiesuk.ac.uk/topics/research-and-i
concordat-support-research-integrity

Research Integrity

UK Concordat to Support Research Integrity sets out core areas:

Rigour, in line with prevailing disciplinary norms and standards, and in:

- performing research and using appropriate methods
- adhering to an agreed protocol where appropriate
- drawing interpretations and conclusions from the research
- communicating the results

universitiesuk.ac.uk/topics/research-and-innovation/concordat-support-research-integrity

Research Integrity

UK Concordat to Support Research Integrity sets out core areas:

Transparency and open communication in:

- declaring potential competing interests
- reporting of research data collection methods
- analysis and interpretation of data
- making research findings widely available, which includes publishing or otherwise sharing negative or null results to recognise their value as part of the research process
- presenting the work to other researchers and to the public

universitiesuk.ac.uk/topics/research-and-innovation/concordat-support-research-integrity

Research Integrity

UK Concordat to Support Research Integrity sets out core areas:

Care and respect for all participants in research, and for the subjects, users and beneficiaries of research, including humans, animals, the environment and cultural objects.

Those engaged with research must also show care and respect for the integrity of the research record.

universitiesuk.ac.uk/topics/research-and-innovation/concordat-support-research-integrity

Research Integrity

UK Concordat to Support Research Integrity sets out core areas:

Accountability of funders, employers and researchers to collectively create a research environment in which individuals and organisations are empowered and enabled to own the research process.

Those engaged with research must also ensure that individuals and organisations are held to account when behaviour falls short of the standards set by this concordat.

universitiesuk.ac.uk/topics/research-and-innovation/concordat-support-research-integrity

Graphic based on the core areas in The Concordat to Support Research Integrity, made by UKRIO.

ukrio.org/about-us/what-is-research-integrity

Honesty

In all aspects of research, including:
- Planning
- Methods
- Data collection
- Credit
- Reporting
- Interpretation

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Rigour

In line with disciplinary norms, including in:
- Appropriate methods
- Following protocols
- Interpreting data
- Drawing conclusions
- Disseminating results

Research Integrity

Transparency

Promoting trust and confidence, including by:
- Reporting full methods
- Publishing all results
- Sharing data, code and materials
- Declaring conflicts of interest

Respect

For everyone and everything involved in research, including:
- Colleagues
- Other researchers
- Participants
- Animals
- The environment

Accountability

Of everyone involved in research, including:
- Researchers
- Institutions
- Funding bodies
- Publishers

Open Scholarship

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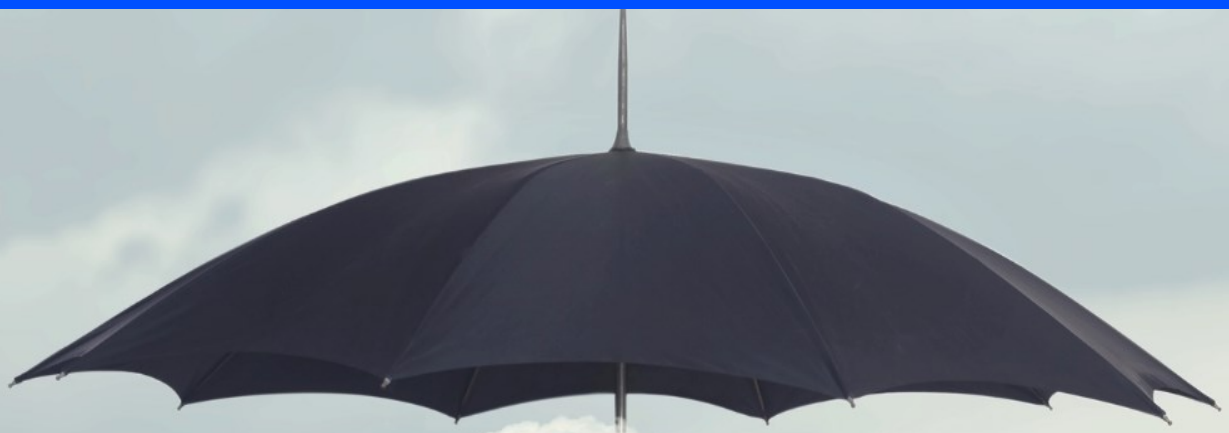

"Open scholarship is an umbrella term that covers a broad array of research outputs and activities. Simply put, it means that, when conducting research, openness is built in from the outset and planned for the long term.

It is [a] transparent and collaborative way of 'doing research'."

bodleian.ox.ac.uk/about/libraries/our-work/open-scholarship-support

Open Scholarship

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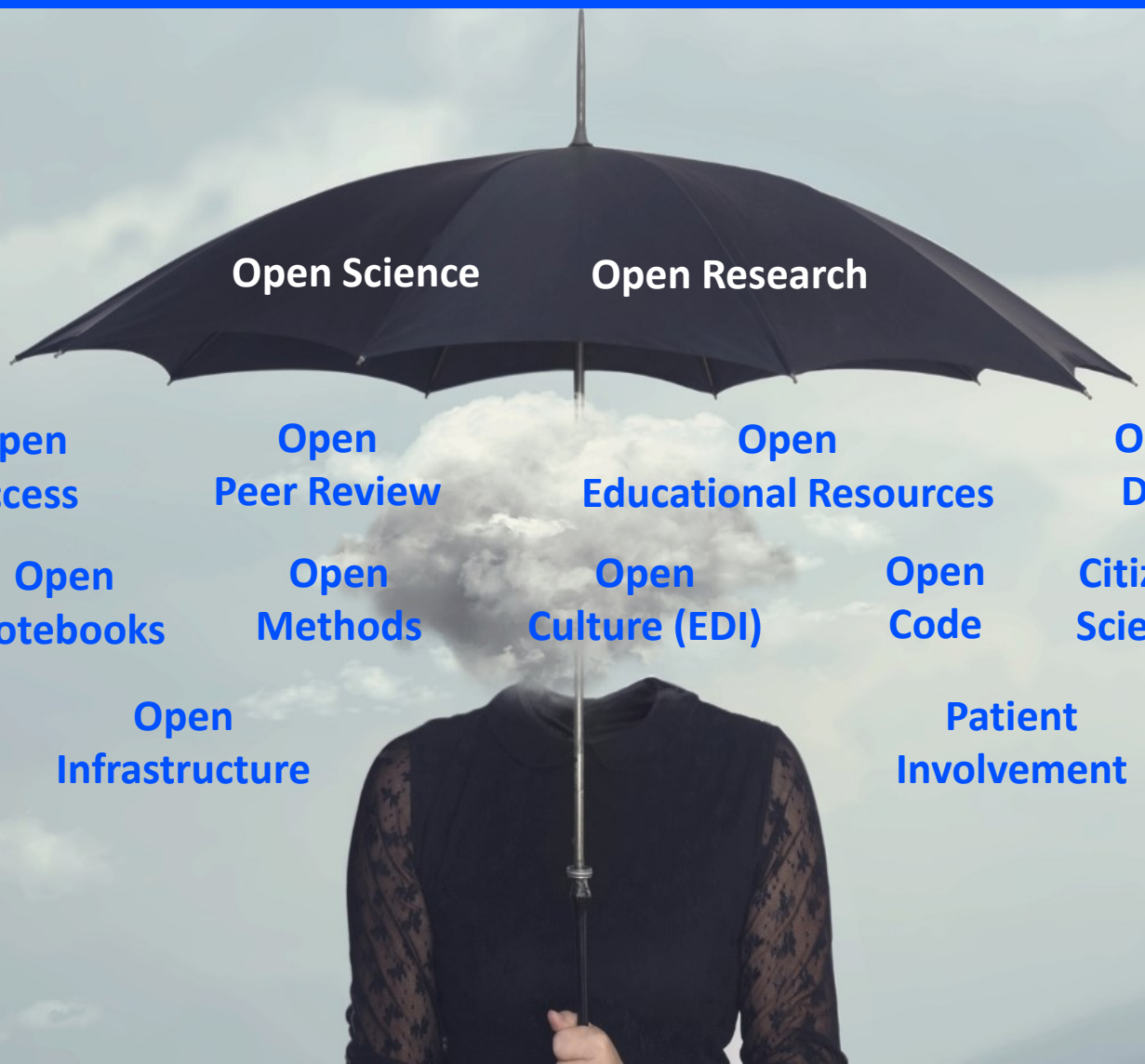

Open Access

Open Peer Review

Open Educational Resources

Open Data

Open Notebooks

Open Methods

Open Culture (EDI)

Open Code

Citizen Science

Open Infrastructure

Patient Involvement

Open Scholarship

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"Each in very different ways, the various CoPs [Communities of Practice] of the reform and open space pull the movement toward better science forward."
Sarahanne Field,
'Charting the constellation of science reform', 2022

Open Scholarship

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"It's likely infeasible to include all the possible open scholarship elements … we encourage you … to take a healthy and balanced portion from the open science buffet. … Each visit to the buffet will be different from the last, but everyone who participates will be working towards improving scholarship for our global community."
Kirstie Whittaker and Olivia Guest, 2020

Transparency

	Not Implemented	Level I	Level II	Le
Citation Standards	No mention of data citation.	Journal describes citation of data in guidelines to authors with clear rules and examples.	Article provides appropriate citation for data and materials used consistent with journal's author guidelines.	Ar ap fo
Data Transparency	Journal encourages data sharing, or says nothing.	Article states whether data are available, and, if so, where to access them.	Data must be posted to a trusted repository. Exceptions must be identified at article submission.	Da re re pu
Analytic Methods (Code) Transparency	Journal encourages code sharing, or says nothing.	Article states whether code is available, and, if so, where to access it.	Code must be posted to a trusted repository. Exceptions must be identified at article submission.	Co re re pu
Research Materials Transparency	Journal encourages materials sharing, or says nothing.	Article states whether materials are available, and, if so, where to access them.	Materials must be posted to a trusted repository. Exceptions must be identified at article submission.	M re re pu
Design and Analysis Transparency	Journal encourages design and analysis transparency, or says nothing.	Journal articulates design transparency standards.	Journal requires adherence to design transparency standards for review and publication.	Jo de ar
Study Preregistration	Journal says nothing.	Article states whether preregistration of study exists, and, if so, where to access it.	Article states whether preregistration of study exists, and, if so, allows journal access during peer review for verification.	Jo ar m
Analysis Plan Preregistration	Journal says nothing.	Article states whether preregistration of study with analysis plan exists, and, if so, where to access it.	Article states whether preregistration with analysis plan exists, and, if so, allows journal access during peer review for verification.	Jo wi ba
Replication	Journal discourages submission of replication studies, or says nothing.	Journal encourages submission of replication studies.	Journal encourages submission of replication studies and conducts results blind review.	Jo su wi st

Open Data & Code

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Data / code availability statement	Facilitates reuse Allows study replication
Data / code repository	Expert curation Long-term preservation Enables institutional investigations
Data / code citation	Improves discoverability Enables verification
FAIR – Findable, Accessible, Interoperable, and Reusable	Self-explanatory!

Registration

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Clinical pre-registration Trials who.int/clinical-trials-registry-platform Systematic reviews crd.york.ac.uk/prospero	Limits ad hoc changes Enables meta-analyses Reduces 'file drawer effect'
Registered Reports	Assessment based on rigour and reporting quality Reduces bias towards 'positive' results
Protocol publication Supplementary file Standalone article protocols.io	Limits ad hoc changes Enables replication and reproducibility

Open Peer Review

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Named to author	Reduces reviewer bias Longer reviews
Named to public	Accountability of the reviewer and journal
Published reports	Accountability Audit Education

Collaboration

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Big team research	Large-scale replications
Citizen science	Broader data collection
Participant / stakeholder involvement	Accountability Different perspectives
International partners	Avoid ‘helicopter science’

Open Notebooks

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Real-time release of results	Radical transparency
Real-time feedback	Early error correction Avoid dead ends
Immediate reuse	Enables collaboration

Open Culture

Diverse workforce	More perspectives
Reflect society	Increase trust in scholarship
Inclusivity	Increase collaboration and reduce over-competitiveness
Remove biases in research assessment and career progression	Reward good practice and avoid perverse incentives

Open Access

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No barriers to reading	Scholars can access all relevant literature
No barriers to reuse	Copyright and permissions do not hold up secondary uses, e.g., of figures
No space constraints	Full reporting and referencing
Often: receptive to negative results and replication studies	Reduce publication bias

Research assessment

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Principle 1: Assess researchers on responsible practices from conception to delivery, including the development of the research idea, research design, methodology, execution, and effective dissemination

Principle 2: Value the accurate and transparent reporting of all research, regardless of the results

Principle 3: Value the practices of open science (open research)—such as open methods, materials, and data

Principle 4: Value a broad range of research and scholarship, such as replication, innovation, translation, synthesis, and meta-research

Principle 5: Value a range of other contributions to responsible research and scholarly activity, such as peer review for grants and publications, mentoring, outreach, and knowledge exchange

Moher D, Bouter L, Kleinert S, Glasziou P, Sham MH, Barbour V, et al. (2020) **The Hong Kong Principles for assessing researchers: Fostering research integrity.** *PLOS Biol* 18(7): e3000737. doi.org/10.1371/journal.pbio.3000737

Limits to Openness

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"As open as possible, as closed as necessary"

Data ethics force11.org/groups/research-data-publishing-ethics/

- Clinical data – anonymisation
- Qualitative data – data access agreements qdr.syr.edu/
- Locations, e.g., endangered species
- Commercial confidentiality

Limits to participation

- Trusted Research
- Competence
- Ill-meaning participation or reuse of data, e.g., see Bishop & Lewandowsky (2018)

Limits to Openness

Dogma

- Bropen Science is off-putting and hostile (coined by Olivia Guest)
- Politicians and others weaponising open scholarship and doubt to undermine trust in scholarship

Peer review

- Lack of peer review in pre-prints, e.g., COVID-19 research
- Does named peer review reduce scrutiny due to fear of retaliation?
- Openness favours transparency, but is double-anonymised peer review fairer?

Predatory publishing

Further reading

Haven, T., Gopalakrishna, G., Tijdink, J. et al. **Promoting trust in research and researchers: How open science and research integrity are intertwined.** *BMC Res Notes* 15, 302 (2022). doi.org/10.1186/s13104-022-06169-y

Field, S. (2022). **Charting the Constellation of Science Reform.** University of Groningen. doi.org/10.33612/diss.229114775

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Lynott, D. & Bazhydai, M. (2020). **Research Integrity and Open Science II.** Lancaster University. osf.io/km34v/wiki/PSYC124-Research%20Integrity%20and%20Open%20Science%202/

Ozolinčiūtė E, Bülow W, Bjelobaba S, Gaižauskaitė I, Krásničan V, Dlabolová DH, Umbrasaitė J (2022) **Guidelines for Research Ethics and Research Integrity in Citizen Science.** *Research Ideas and Outcomes* 8: e97122. doi.org/10.3897/rio.8.e97122

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Questions and discussion

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mstdn.science/@ukrio; @mattjhodgkinson@scicomm.xyz

linkedin.com/company/uk-research-integrity-office

youtube.com/channel/UCmcttrB7LkjHhNQYvN8XQcQ