Society Publishing: Open Science & Open Data

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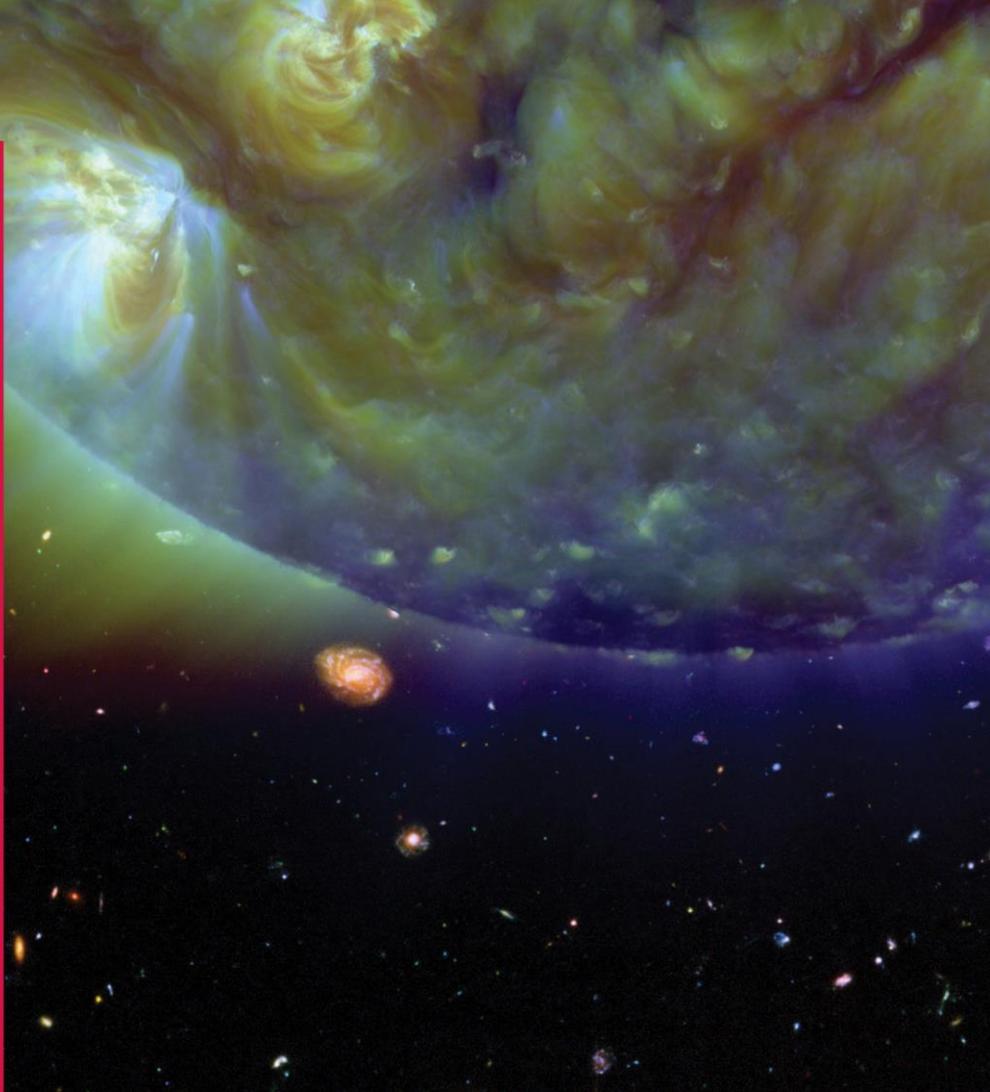
The Royal Society and 'Open Science'

The Royal Society has a proven track record of promoting Open Science.

In last decade, the Society has conducted several important pieces of work on 'Open Science':

- Science as an open enterprise (2012)
- Future of scientific scholarly communications (2015)
- Research culture: Changing expectations (2018)

The ideas generated have been carried into our scholarly publishing activities

Science as an open enterprise

An academy- and funder-led project.

It was "…a study on the use of scientific information as it affects scientists and society."

Key conclusions:
- Open Science is a qualified good
- Greater openness in data sharing essential

royalsociety.org/topics-policy/projects/science-public-enterprise/

Future of scientific scholarly communications

Hosted 'Future of scientific scholarly communications' meeting.

Range of recommendations and suggestions to reform aspects of scholarly communication system, including

- Greater collaboration between stakeholders
- Encourage shift in research culture
- Greater use of pre-print servers and post-publication peer-review

royalsociety.org/science-events-and-lectures/2015/04/future-of-scholarly-scientific-communication-part-1/

Research culture

Aimed at creating space to discuss current research culture and what a reformed environment might look like:

- Revisiting what a 'journal' is and does
- Greater openness and availability of research data
- Peer review research question and study design before conducting research

royalsociety.org/topics-policy/projects/research-culture/changing-expectations/

Open science mandates – open data #1

Royal Society Publishing has strong open data mandates. All journals require data available at publication, *Royal Society Open Science* requires accessibility at submission.

Why?

- Reproducibility

- Data are output in own right

- Data and code sharing reduce duplicated effort

- Improve validation/verification of research

Open science mandates – open data #2

Royal Society Publishing supports authors to practice open data principles.

How?

- Integration with Dryad and Figshare data repositories; pay for hosting authors' data
- Other repositories are welcome (eg Zenodo, OSF)
- Work may be rejected if access isn't provided UNLESS solid grounds to restrict data access (eg ethics)

Open peer review –
Royal Society Open
Science

Journal launched 2014 to incorporate Open Science innovations, including open peer review, open data, pre-registered studies

Until 2019, open peer review was an option, with authors driving level

of openness. Fully open papers included:

- Signed reviewer reports

- Decision letters

- Author rebuttals

Open peer review – our other journals

From 1 Jan 2019, 4 of our journals moved to an open peer review mandate:

- *Royal Society Open Science* (gold OA)
- *Open Biology* (gold OA)
- *Proceedings A* (hybrid, physical sciences)
- *Proceedings B* (hybrid, life sciences)

All 4 publish reviewer reports, decision letters, author rebuttals BUT allow reviewers to opt out of signing reports

Advantageous for authors: encourages more constructive critiques from reviewers; allows for more open dialogues; improve quality of future papers; help guide junior researchers; avoid pitfalls.

Reproducibility

Royal Society Open Science drives efforts to encourage reproducible science in an open arena.

Brings together a range of initiatives:

- Open Science features (data, review)

- Encourages negative studies

- Offers Registered Reports (pre-registered studies)

- Offers Replication studies

What advantages for authors? Validation and verification of research;

reducing duplication of effort; tests research questions not outcomes

Preprints and postpublication

Supportive of preprint servers and offer authors 'scoop protection'.

Several journals allow direct submission from arXiv, and trialing bioRxiv direct submission.

Postprints may be deposited at any time on website or recognized repository does not breach media embargo.

Promote published work on authors' behalf

Support article and other alternative metrics (eg Altmetrics)

How can libraries and publishers work together

Space for collaborations in a number of areas, for example:

- Ensuring funders support transition to open access

- Encouraging 'in the round' research assessment (not relying on single metrics)

- Supporting authors' preferred venues for research

- Provide training for researchers (eg how to write papers, how to peer review)

- Wider recognition of outputs other than manuscripts in research assessments

- Transformative sales models such as Read & Publish

Any questions?

Find out more at

royalsociety.org/Journals/