

Open Research Data

Open research data

Open research data represents a revolution in the way science is conducted and LERU both notes and endorses this development.

What is 'open data'?

'Open data' is data which can be released in the public domain, and which should be freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other forms of control.

The concept of open data is not itself new; but a formalised definition is relatively new -- the intention can be summarised in the statement that "a piece of data is open if anyone is free to use, re-use, and redistribute it — subject only, at most, to the requirement to attribute and/or share-alike."¹

Open research data is a component of open knowledge. Open knowledge is any kind of information – “from genes to geodata and from sonnets to statistics”² that can be freely used, re-used, and redistributed.

Related to this, the linked data paradigm has evolved into a very promising candidate for addressing one of the biggest challenges in the area of intelligent information management: the exploitation of the world wide web as a platform for data and information integration in addition to document search.

Benefits of open data

By adopting an open approach, the data resulting from research and experimentation can be freely available and shared to aid analysis and further discovery. With regard to the Spanish Cucumber E. Coli, for example, its genome was analysed within weeks of the outbreak because of a global and open effort. Data about the strain's genome sequence were released freely over the internet as soon as they were produced.³

Are there copyright issues to consider?

Unlike research publications, research data themselves cannot be copyrighted. Ideally, a researcher or research team should release all their research data under a Creative Common CC0 licence which will allow data sharing, re-use and text mining. In doing so, a researcher has dedicated the work to the public domain by waiving all of his or her rights to the work worldwide under copyright law, including all related and neighbouring rights, to the extent allowed by law. You can copy, modify, distribute and perform the work, even for commercial purposes, all without asking permission.

Research funders may, as a condition of grant, have requirements for the research data which is produced as a result of their funding. These requirements will typically be set out in the funding agreement, and will be normative. Researchers and research teams

³ See [Science as an open enterprise](http://cordis.europa.eu/fp7/ict/e-infrastructure/docs/hlgsdi-report.pdf) from the Royal Society (UK) at <http://cordis.europa.eu/fp7/ict/e-infrastructure/docs/hlgsdi-report.pdf>.

¹ See <http://opendefinition.org/>.

² See <http://okfn.org/about/vision/>.

should ensure that any consortial or partnership agreement reflects the requirements of the funding agreement.

Funder policies and researchers

Research funders increasingly lay stringent requirements on the researchers they fund to manage their research data. Typically, these may well include the following:

- Research data is a public good and should be made freely and openly available with as few restrictions as possible in a timely and responsible manner;
- Published papers will explain how data can be accessed;
- Each institution will have relevant policies and procedures, and researchers and students will comply with them;
- Research data not in digital form must still be made available for sharing;
- Appropriate metadata describing the data will be available soon after the data has been generated;
- If data is restricted, the metadata must explain why and indicate how access would be possible;
- Funded research data must be digitally curated from the time it is public throughout its lifecycle;
- Researchers must provide data management plans to accompany their grant application, which will show how the stipulations above are to be delivered.

What should universities do?

Universities need to note the move to data-driven science and take appropriate actions:

- Universities should implement data management policies;
- Technical/support infrastructures should be created to support research;

- Advocacy programmes need to be established which address all the above issues and create clarity for the researcher in how to manage their publications and their data;
- Data-driven science is a global development. Universities, researchers and research funders should work together, where this is appropriate, to share infrastructures and best practice.

What can libraries/data centres/data scientists do?

For research libraries, LIBER (Association of European Research Libraries) has already issued 10 recommendations on immediate steps that bodies such as LERU universities and their libraries should take.⁴

Further information

The [LERU Roadmap Towards Open Access](#) gives fuller details of open access developments and implementations in LERU institutions.⁵ Recommendations to develop the 2002 Budapest Open Access Initiative have also been published.⁶

LERU and the EU

LERU's position is in line with the EC's recommendations on access to and preservation of scientific information.⁷ LERU strongly advocates that the Horizon 2020 programme adopt the position outlined in this [LERU Roadmap](#).

⁴ See <http://www.libereurope.eu/sites/default/files/The%20research%20data%20group%202012%20v7%20final.pdf>.

⁵ See http://www.leru.org/files/publications/LERU_AP8_Open_Access.pdf.

⁶ See <http://www.soros.org/openaccess/boai-10-recommendations> for an update on the BOAI.

⁷ See http://ec.europa.eu/research/science-society/document_library/pdf_06/recommendation-access-and-preservation-scientific-information_en.pdf.