

Open Science Data

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Overview

- Open Scientific Data
- Open Access to Publications
- Related: Open Educational Resources

Open Scientific Data

- Re-use of scientific data
- Basis: Berlin Declaration on Open Access by Max-Planck-Gesellschaft (2003) <http://oa.mpg.de/lang/en-uk/berlin-prozess/berliner-erklarung/>
- Committee on Data for Science (suborg. of International Council for Science) <http://www.codata.org/>
- ICSU World Data Centre System (since 2009) <http://www.icsu-wds.org/>

Open Scientific Data II

- National Institutes of Health (NIH) make data sharing a condition for grants above \$500.000
- German National Library of Science and Technology in charge of Digital Object Identifiers <http://www.tib-hannover.de/en/services/doi-service>
 - Project Data Cite: <http://www.datacite.org>
- Science Commons as a part of CC <http://creativecommons.org/science>

Open Scientific Data III

- Correct metadata essential for findability
- Data available on a long-term basis
- In particular Big Science as bioinformatics, geoscience, environmental sciences
 - data collected, analysed and interpreted collectively
- Possibility to verify results /do own tests

Open Scientific Data IV

- Examples
 - Registry of Research Data Repositories <http://www.re3data.org/>
 - GenBank <http://www.ncbi.nlm.nih.gov/genbank>
 - Protein Databank <http://www.rcsb.org/pdb/home/home.do>
 - Personal Genome Project <http://www.personalgenomes.org/>
 - EOL: Taxonomic Data <http://eol.org/>

Knowledge Economy

- (Often) publicly funded research results only accessible through expensive subscriptions
- Price for subscriptions so high that some libraries cannot afford them anymore
- Others buy bundles of subscription regardless of needed publications
- Few publishers (i.e. Elsevier) control the market of papers written by scientists

Knowledge Economy II

- Big journals are established, editorial boards and peers contribute to their reputation
- Young scientists prefer them in order to hone their impact index
- Journals now partly boycotted by scientists

Open Access Journals

- Peer reviewed including board celebrities
- Scientists have to pay for publication costs
- No distribution revenues
- Number of journals still low
- In April 2012 Harvard requested its scientists to no longer publish in paid-for journals anymore
- EU plan: 60 per cent of results published in European countries as open access
- Public funding is more and more linked to open access publication

Open Access Journals

- Approach I: Golden Way (8% of literature)
 - Journals funded through research budgets
 - Less costs through saved subscriptions
 - Access for the entire public
- Approach II: Green Way (12% of literature)
 - Scientists organize online access to articles and review process

http://europa.eu/rapid/press-release_MEMO-12-565_en.htm

Open Access Examples

- Public Library of Science (PLOS), PLOS Medicine (\$ 1500 per year and research team) <http://www.plos.org/>
- Nature Conservation (conservation, biodiversity) <http://www.pensoft.net/journals/natureconservation/>
- The Cost of Knowledge - Researchers in protest <http://thecostofknowledge.com>

Open Educational Resources

- Background
 - Traditional Learning Management Software
 - Self learning courses (no teacher)
 - Digital teaching platforms (totally online), i. e. MOOCs
- Open and sustainable access to learning resources
- Remixability - free and open licences (CC-0)
- Strong linkage to Wikipedia

<http://chronicle.com/article/What-You-Need-to-Know-About/133475>

Open Educational Resources II

- Also applicable to higher education, i.e. MIT Open Courseware <http://ocw.mit.edu/about/our-history>
- Startup model can mean dropping the "open" <http://chronicle.com/blogs/wiredcampus/flat-world-knowledge-to-drop-free-access-to-textbooks/40780>
- Resources: OER Commons <http://www.oercommons.org/>

Further Reading / Information

- Background on Open Access and Data: http://open-access.net/de_en/general_information/what_does_open_access_mean/open_access_to_data/
- Publishing data and databases: <http://wiki.creativecommons.org/Data>
- Exhaustive wiki of scientific data repositories: http://oad.simmons.edu/oadwiki/Data_repositories
- Linked Open Science Data <http://linkedscience.org/data/>