

Open Science, Research Data Management and Research Funding Agencies

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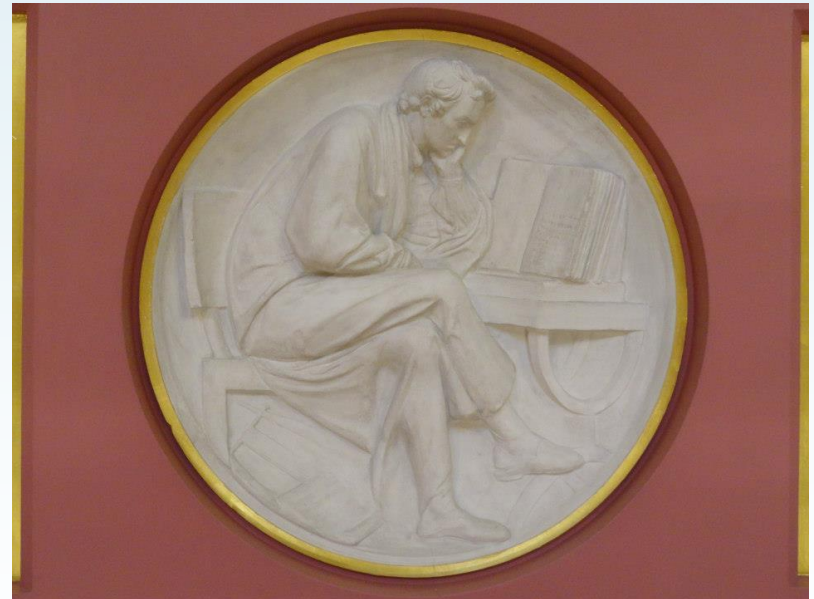
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Content

- ❑ Open Science (Science 2.0)
- ❑ Research Data Management
 - ❑ LERU Roadmap
 - ❑ LEARN
- ❑ Role for Research Funding Agencies
- ❑ Conclusions



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Open Science

- a paradigm shift in the modus operandi of research and science impacting the entire scientific process

Research Cycle

Analysis

Publication

Review

Conceptualization

Data Gathering

Characteristics

Citizen Science

Open code

Pre-print

Open Access

Alternative Reputation Systems

Collaborative Bibliographies

Science Blogs

Open Annotation

Open Data

Open Lab Books/Workflows

Data Intensive

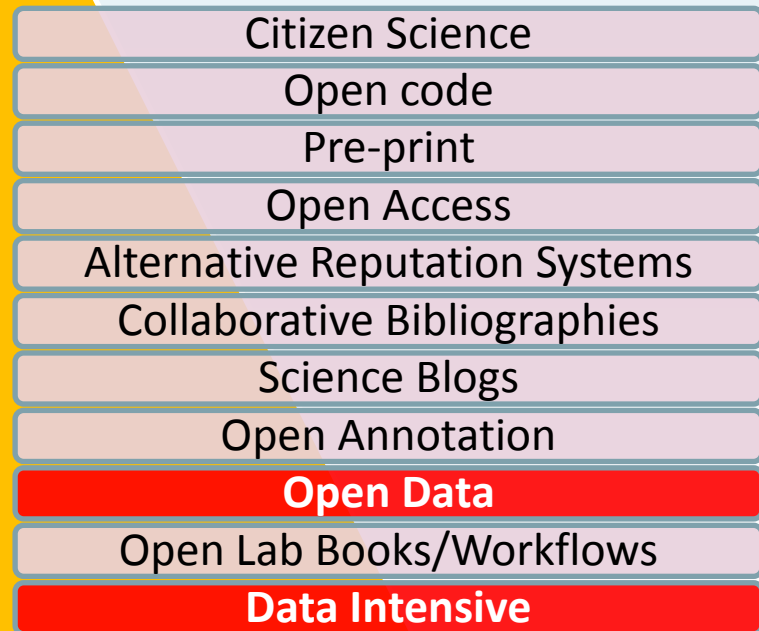
Open Science

- a paradigm shift in the modus operandi of research and science impacting the entire scientific process

Research Cycle



Characteristics



Open Science – the Motivation

- ❑ [Validation](#) of the results of the EU's public consultation on *Science 2.0: Science in Transition* now published
- ❑ Science 2.0 now renamed 'Open Science'
- ❑ Trends in Open Science
 - ❑ Significant increase in scientific production
 - ❑ New ways of doing Science (data-intensive science)
 - ❑ Increased number of actors and addressees of science



King's Cross Station, London

% Agreement for Policy actions (abbrev.)

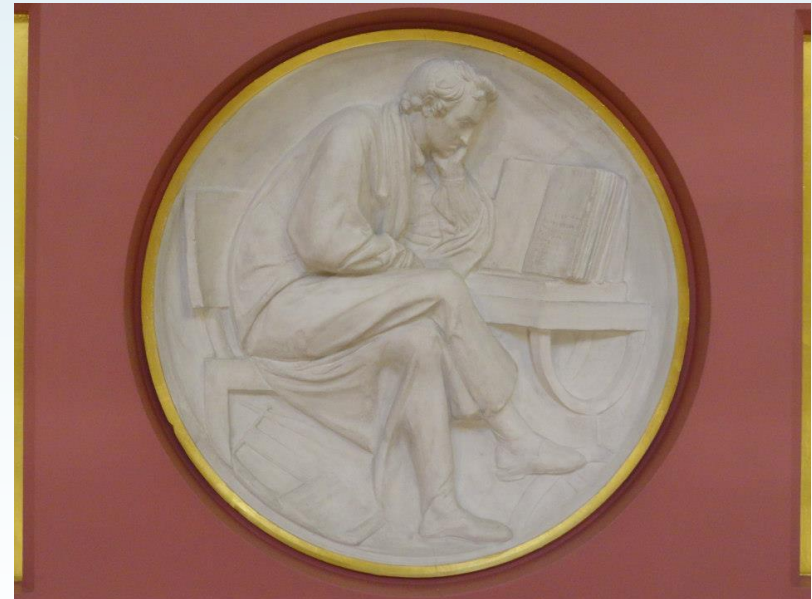
Question/Issue	Need to Intervene Y	Need to Intervene N	Req'd Action Y	Req'd Action N	EU Action Y	EU Action N
Foster Open Science – raise awareness	52%	4%	48%	4%	19%	4%
Traditional Metrics do not capture Open Science	22%	7%	22%	7%	4%	7%
Develop research infrastructures	56%	4%	11%	4%	48%	4%
OA to publications and data	63%	11%	33%	26%	26%	11%

The most significant total in the Validation exercise

Not much interest in any intervention

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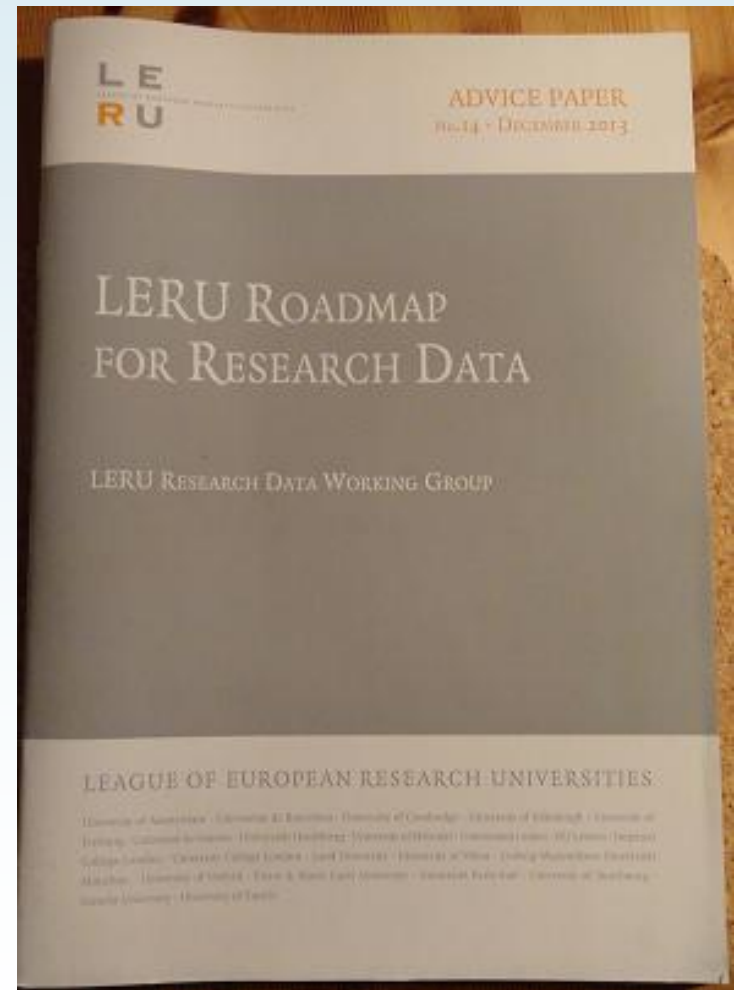


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LERU Roadmap for Research Data

❑ Overseen by Research Data Working Group

Pablo Achard (University of Geneva)
Paul Ayris (UCL, University College London)
Serge Fdida (UPMC, Paris)
Stefan Gradmann (University of Leuven)
Wolfram Horstmann (University of Oxford)
Ignasi Labastida (University of Barcelona)
Liz Lyon (University of Bath)
Katrien Maes (LERU)
Susan Reilly (LIBER)
Anja Smit (University of Utrecht)



Policy and Leadership

- Identifies how policy development and leadership are undertaken

Advocacy

- Who undertakes advocacy and what is the message?

Selection, Collection, Curation, Description, Citation, Legal Issues

- Technical Issues around collection and curation

Research Data Infrastructure

- Where is it stored and by whom?

Costs

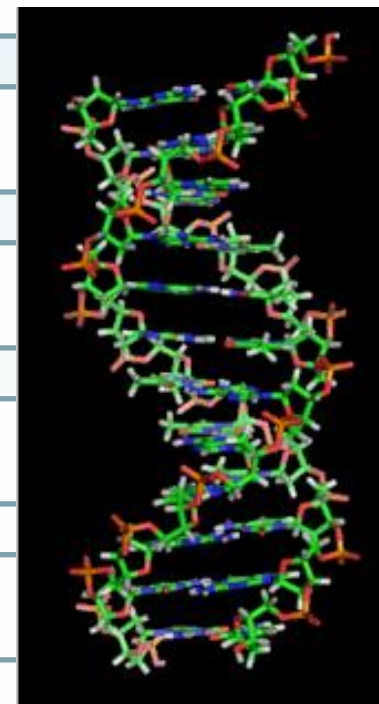
- How much does it cost?

Roles, Responsibilities, Skills

- What skills are required by which communities?

Recommendations to different stakeholder groups

- Who does what?



Key Messages

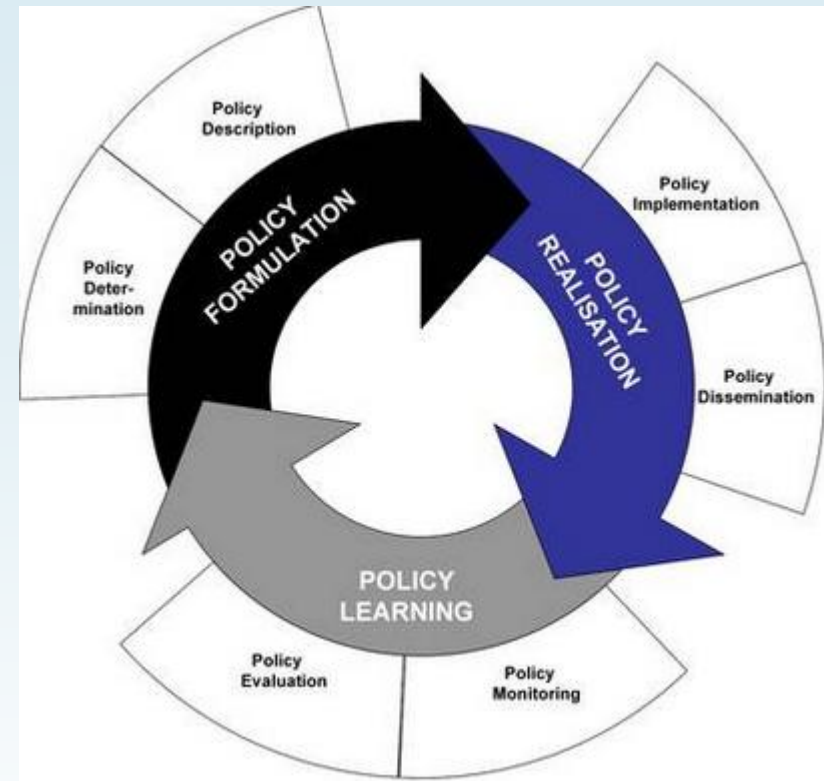
- ❑ Each LERU university needs a Research Data Management Strategy
- ❑ Researchers should have Research Data Management Plans
- ❑ LERU universities need to bring stakeholders together
- ❑ Benefits of 'open data' for sharing and re-use should be advocated and explored



A Box of Useful Knowledge
(Brougham Papers, UCL Library Services)

Policy Development

- ❑ Case Study on Policy development from UCL
- ❑ Drivers
 - ❑ External funders
 - ❑ Need to inform researchers
 - ❑ Raise awareness of issues facing UCL researchers
- ❑ Identifies roles and responsibilities
- ❑ Data to be made open in the most open manner appropriate



See www.lanecrothers.net/politicalprof/the-policy-cycle-and-our-frozen-politics/

- ❑ Researchers should have Data Management Plans
- ❑ LERU slams lack of data policies – *Research Europe*

Open Data

- Open Data allows research data to be shared and re-used
 - Avoids costly duplication of research activity
 - Provides greater transparency in research activity
 - Potential to speed discovery of solutions to societal Grand Challenges, such as health care & environmental science

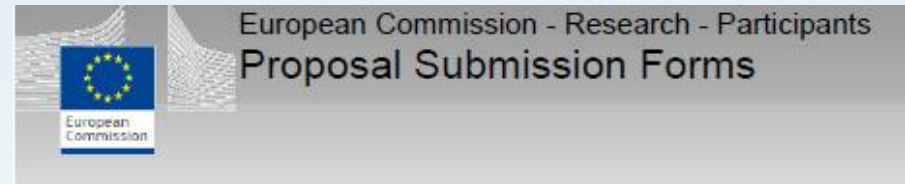
- Can all research data be open?
- Certain categories probably cannot
 - National security
 - Data protection
 - Commercial Funder requirements

http://en.wikipedia.org/wiki/File:Open_Data_stickers.jpg



LEARN – LEaders Activating Research Networks

- ❑ Purpose is to develop the [LERU Roadmap for Research Data](#) to build a global co-ordinated global e-infrastructure
- ❑ Outputs
 - ❑ Model Research Data Management policy
 - ❑ Toolkit to support implementation
 - ❑ Executive Briefing in five core languages so as to ensure wide outreach



Horizon 2020

Call: H2020-INFRA SUPP-2014-2

Topic: INFRA SUPP-7-2014

Type of action: CSA

Proposal number: 654139

Proposal acronym: LEARN

LEARN

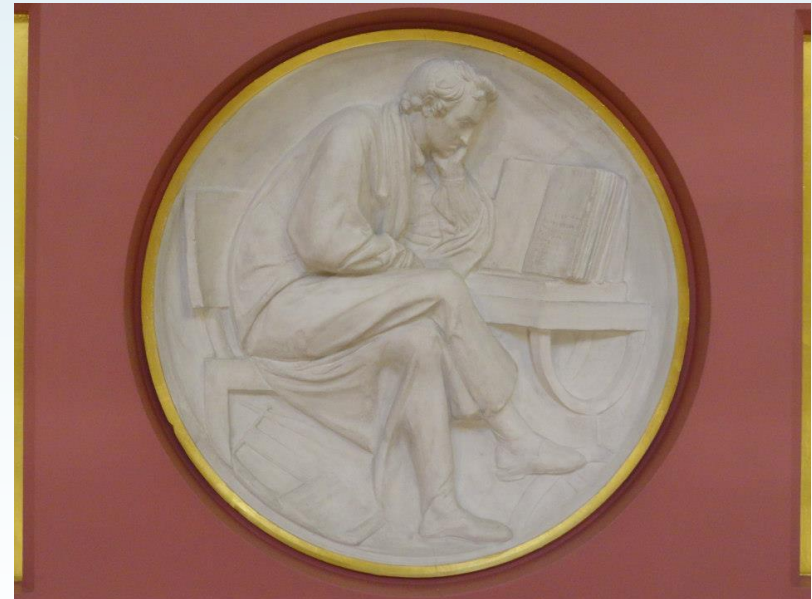
- ❑ 5 partners
 - ❑ UCL (University College London) – lead partner
 - ❑ University of Barcelona
 - ❑ University of Vienna
 - ❑ LIBER
 - ❑ ECLAC – UN Commission for Latin America and the Caribbean
- ❑ Starts in June 2015; runs for 24 months
- ❑ €497,000 budget
 - ❑ 100% funded



Wilkins Building, UCL, 1826

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Research Funder policies

- ❑ UCL has tracked 15 global funder policies
- ❑ Research funders can set direction for Open Science
- ❑ Funders have led movement towards Open Access
- ❑ They should now do the same for research data

Funder	Data policy	Overview of expectations	Help to comply
AHRC	Research Funding Guide: Annex (Access to data)	Summary of expectations	How to write the Technical Plan
BBSRC	Data Sharing Policy	Summary of expectations	FAQs
Bill & Melinda Gates Foundation	Information Sharing Approach	Summary of expectations	
CRUK	Data Sharing and preservation Policy	Summary of expectations	FAQs
DFID	Open and Enhanced Access Policy		
EC - Horizon 2020	Guidelines on Open Access to Scientific Publications and Research Data		Guidelines on Data Management
EPSRC	Policy framework on research data	Guidance for UCL researchers is available	Support for UCL researchers

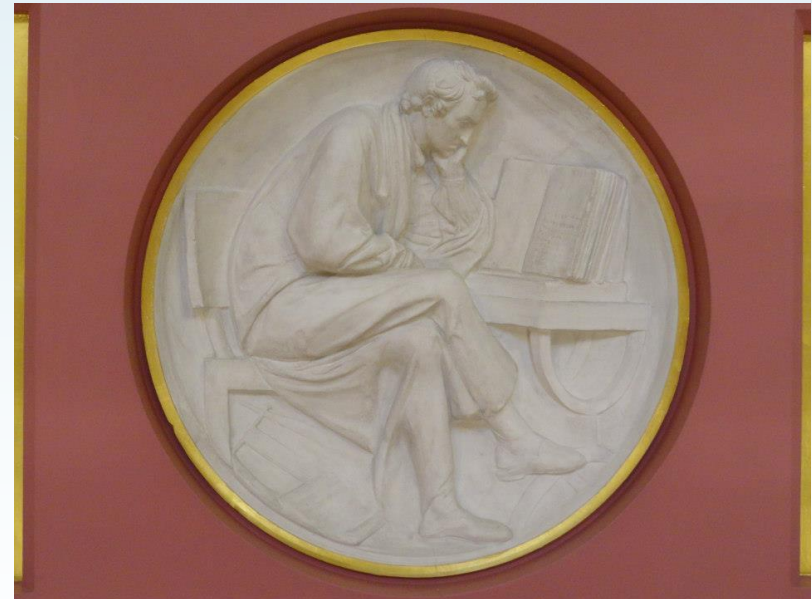
What should research funders ask for?

- Require Research Data Management Policies in institutions
- Require Data Management Plans from individual researchers
- Require that the default position for research data is that it should be Open
- Fund infrastructure - like the UK Data Archive

ERC	Open Access Guidelines		FAQs
ESRC	Research data Policy	Guidance for UCL researchers is available.	Support for UCL researchers FAQs & Data Management Plans
MRC	Data sharing policy	Summary of expectations	
NERC	Data policy	Summary of expectations	
NIH	Data sharing policy		Implementation guide
STFC	Scientific data policy	Summary of expectations	
UK Department of Health	NHS Information Governance	Summary of expectations	
Wellcome Trust	Policy on data management and sharing	Summary of expectations	Q&A & Advice on data sharing

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Conclusions

- ❑ European Universities have broadly accepted the Commission's Report on Open Science
- ❑ Open Access and Research Data Management are key
- ❑ Research Funders have a key role to play
- ❑ **Challenge for Research Funders**



St Michael, by John Flaxman, UCL

Finally

- If you have been
- Thanks for listening
- Happy to hear questions and initiate discussion

