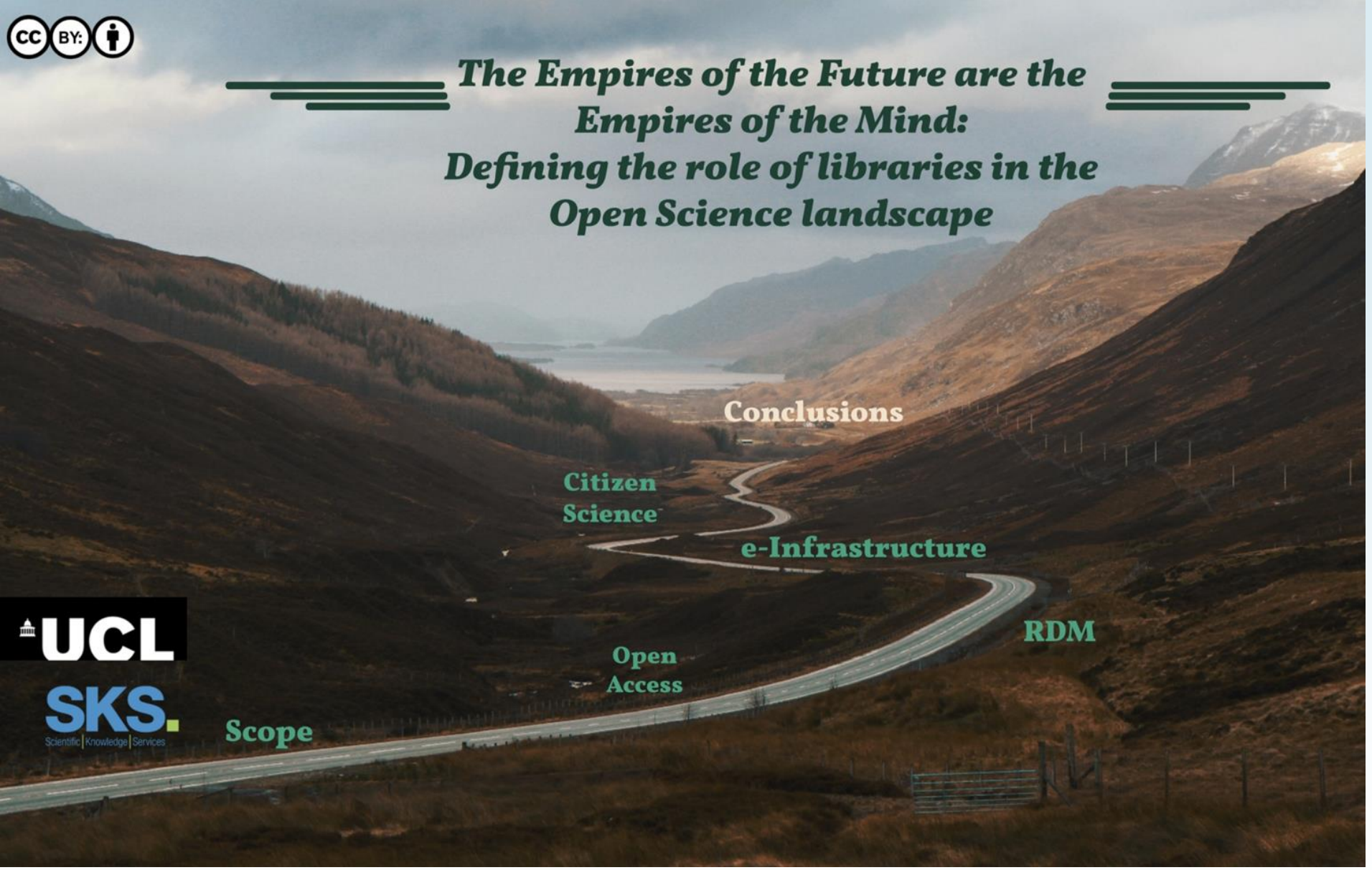
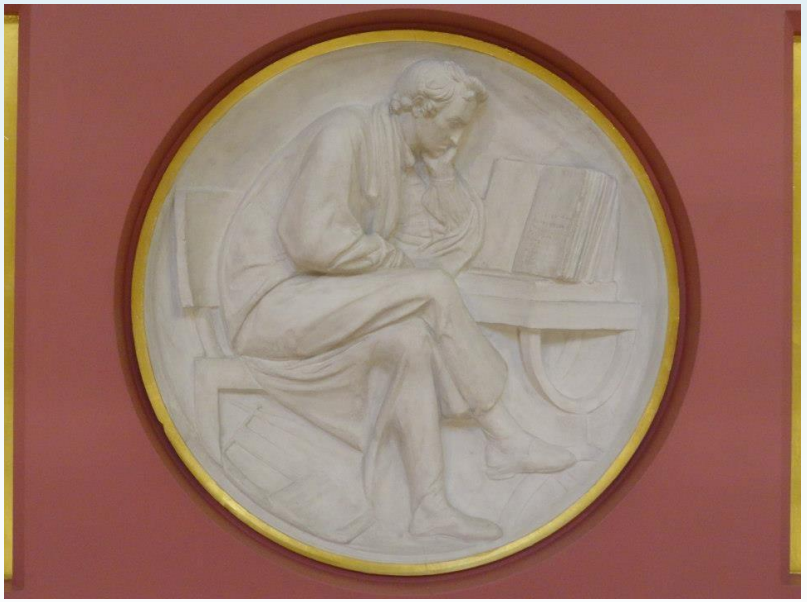


Dr. Paul Ayris
Pro-Vice-Provost (UCL Library Services)
Co-Chair of the LERU INFO Community
Adviser to the LIBER Board
e-mail: p.ayris@ucl.ac.uk

Dr. Tiberius Ignat
Managing Director
Scientific Knowledge Services
www.knowledge.services
e-mail: tiberius@scientificknowledgeservices.com

Content

- The scope of Open Science
- Open Access
- Research Data Management
- European Open Science Cloud
- Citizen Science
- Conclusions



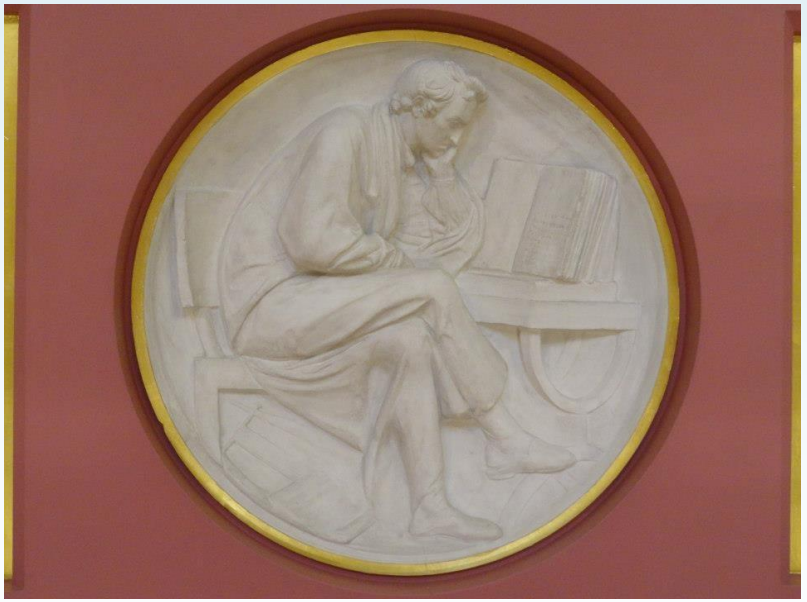
Plaster Relief by John Flaxman,
Flaxman Gallery, UCL

The Three Major Shifts of Open Science

- **How scientists collaborate to create knowledge**
  - » RDM, EOSC, ERA ERIC
- **How scientists find meaning in knowledge**
  - » Ex. The International HapMap Project
- **A change in the relationship Science – Society**
  - » OA, Citizen Science, Open Days, Pop Science

Content

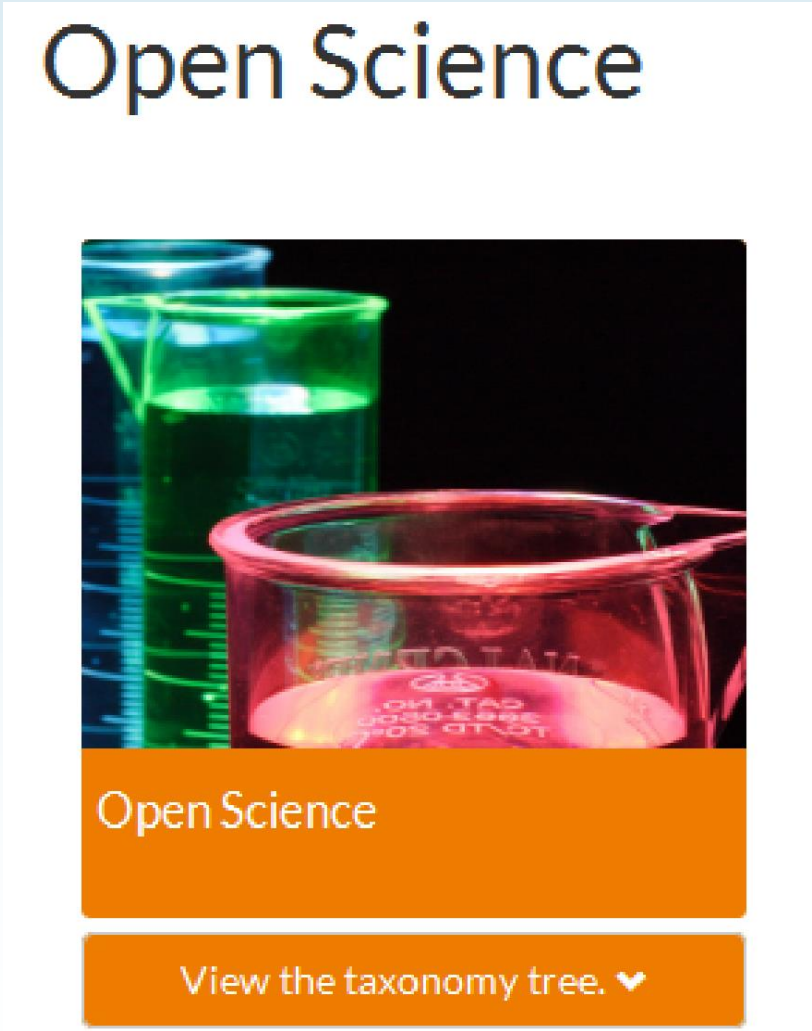
- ❑ The scope of Open Science
- ❑ Open Access
- ❑ Research Data Management
- ❑ European Open Science Cloud
- ❑ Citizen Science
- ❑ Conclusions



Plaster Relief by John Flaxman, Flaxman Gallery, UCL

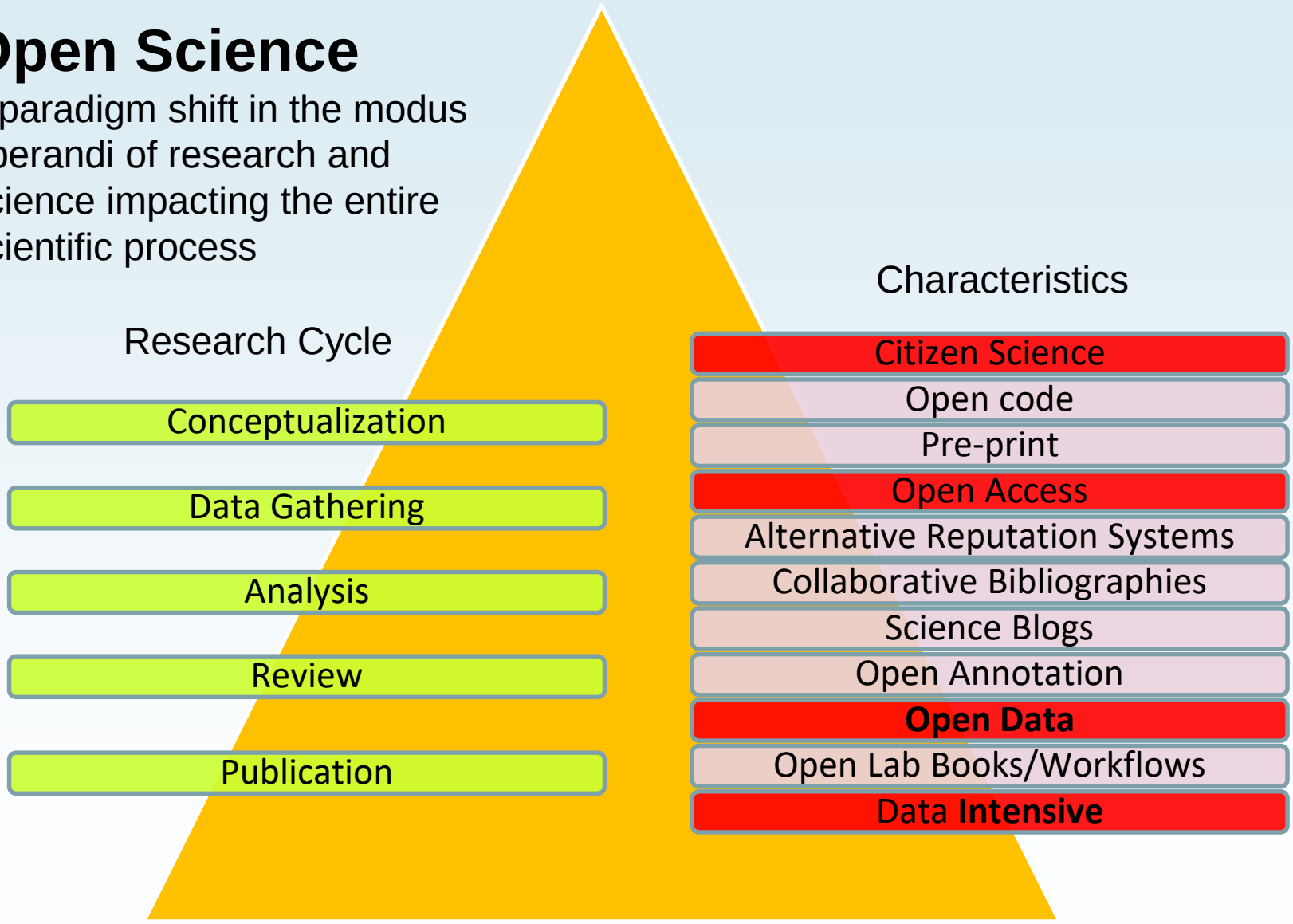
What is Open Science?

- Open Science is the movement to make scientific research, data and dissemination accessible at all levels of an enquiring society



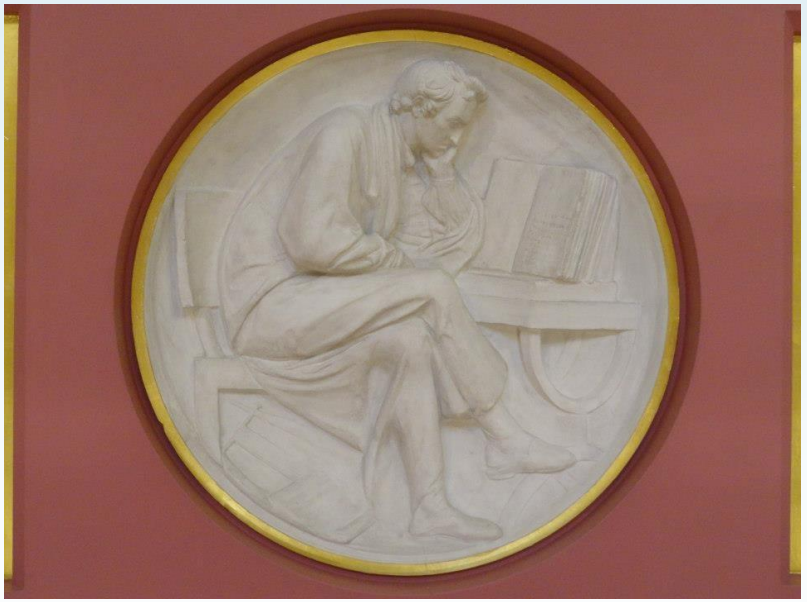
Open Science

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



Content

- ❑ The scope of Open Science
- ❑ Open Access
- ❑ Research Data Management
- ❑ European Open Science Cloud
- ❑ Citizen Science
- ❑ Conclusions

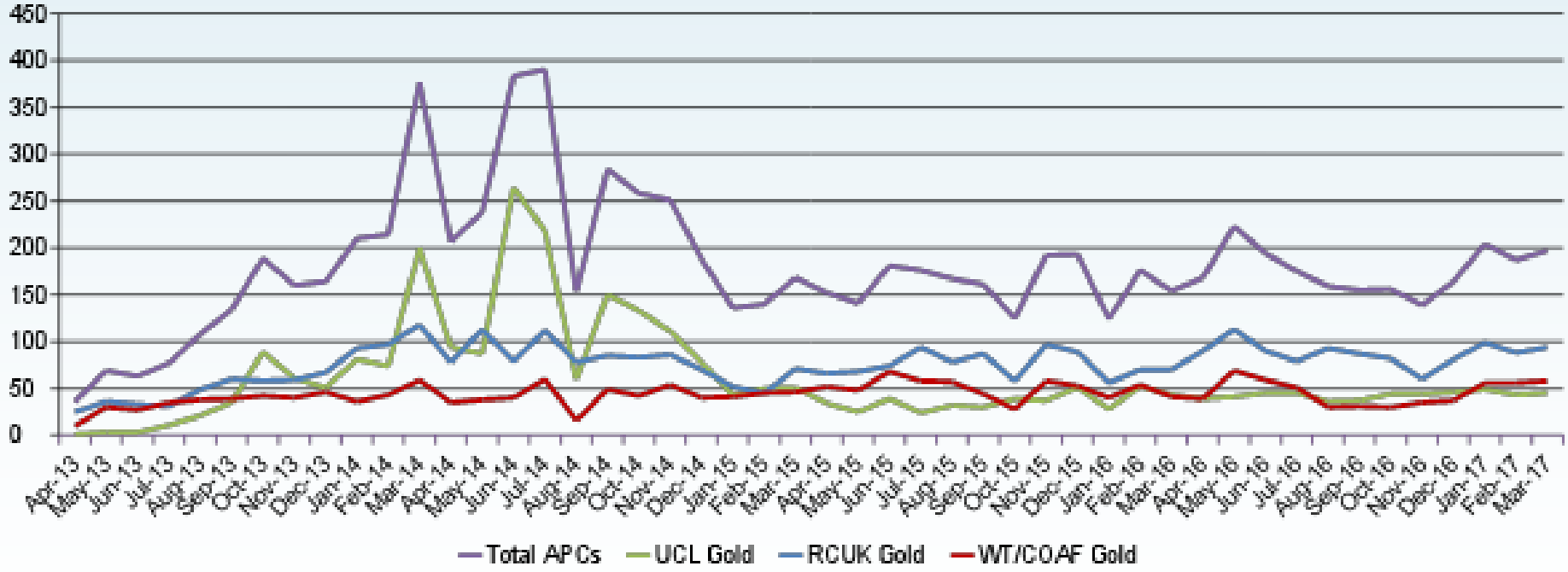


Plaster Relief by John Flaxman, Flaxman Gallery, UCL

Gold APC payments (to March 2017)

8,661 APCs paid since April 2013

RCUK – 3,641 COAF/WT – 2,103 UCL GOLD – 2,917



UCL Press

The UK's first fully Open Access University Press

UCL Press

50 monographs published (Sept 17)
9 journals published (Nov 17)

http://www.ucl.ac.uk/ucl-press

Textbooks

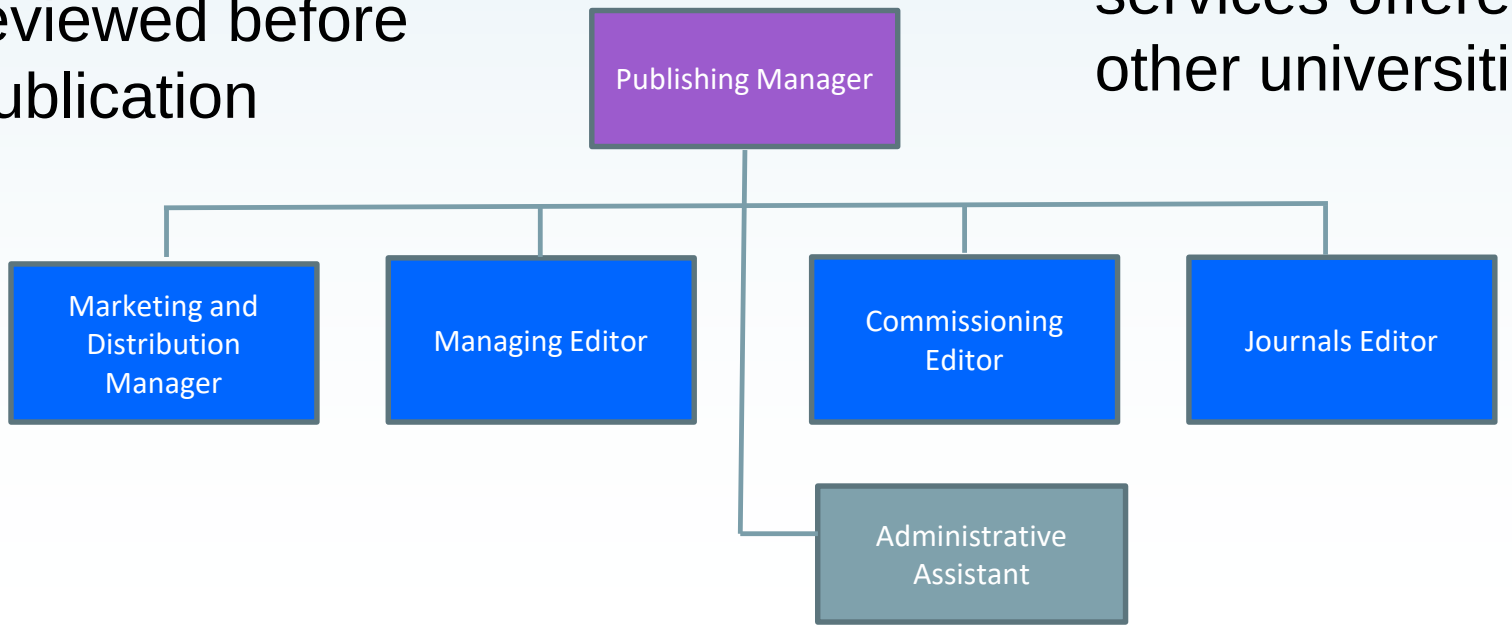
- Written by Deepak Kalaskar, Peter E M Butler, and Shadi Ghali from The Royal Free Hospital, London. The textbook offers a comprehensive overview of reconstructive plastic surgery for introductory plastic surgery and surgical science courses. June 2016

UCL Publishing model

- OA business model
- Sales via Print on Demand
- Enhanced digital interface
- Books peer reviewed before publication

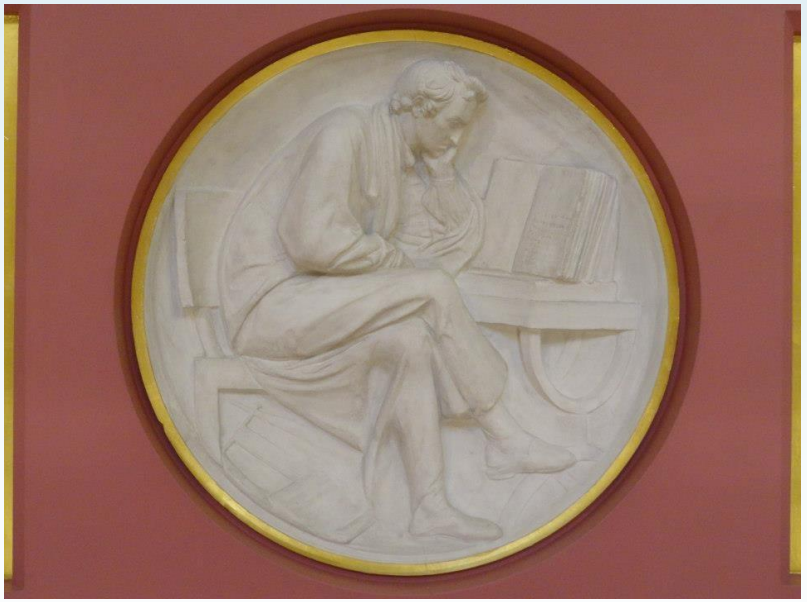
UCL PRESS

- Textbook activity
- Journal programme
- Publishing services offered to other universities



Content

- ❑ The scope of Open Science
- ❑ Open Access
- ❑ Research Data Management
- ❑ European Open Science Cloud
- ❑ Citizen Science
- ❑ Conclusions



Plaster Relief by John Flaxman,
Flaxman Gallery, UCL

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
- Started in June 2015; ran for 24 months
- €497,000 budget
  - 100% funded

Wilkins Building, UCL, 1826

LEARN Deliverables

- ❑ Model Research Data Management Policy
- ❑ Toolkit to support implementation
- ❑ Self-assessment survey
- ❑ KPIs to measure levels of success at institutional level
- ❑ Executive Briefing (in six languages)
- ❑ 20 Recommendations on Best Practice in RDM

All Deliverables at:
http://learn-rdm.eu/en/dissemination

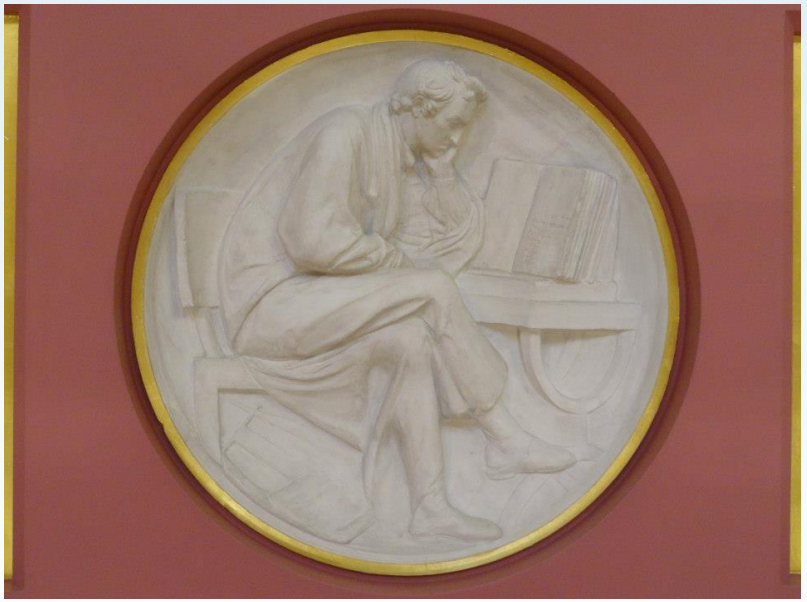
- 23 chapters of Best Practice Case Studies in 8 sections
- http://learn-rdm.eu/en/dissemination
  - Policy and Leadership
  - Advocacy
  - Subject approaches

learn

- Open Data
- Research Data Infrastructure
- Costs
- Roles, Responsibilities, Skills
- Tool development

Content

- ❑ The scope of Open Science
- ❑ Open Access
- ❑ Research Data Management
- ❑ European Open Science Cloud
- ❑ Citizen Science
- ❑ Conclusions



Plaster Relief by John Flaxman, Flaxman Gallery, UCL

European Open Science Cloud

- EU High Level Expert Group Report
- Launched on 11 October 2016
- Issues considered:
  - Infrastructures
  - Skills development
  - Reward and Recognition
  - Roles and responsibilities
  - Governance & Standards
  - Funding opportunities
- Available here

European Open Science Cloud

- Headline points:
  - Build on existing infrastructure and expertise
  - Devise Rules of Engagement
  - EU contribution to FAIR data and Open Science
  - Build links to regional Cloud(s) around the globe
  - Develop expertise
    - Half a million ‘core data scientists’ in Europe
    - 5% of total research spend should be on data stewardship

King’s Cross Station, London

EOSC Declaration (Autumn 2017-)

EOSC is a process not a project

Data Culture & FAIR Data

- Open by default
- Skills development
- FAIR principles
- Data Management Plans
- Engagement with researchers

Services & Architecture

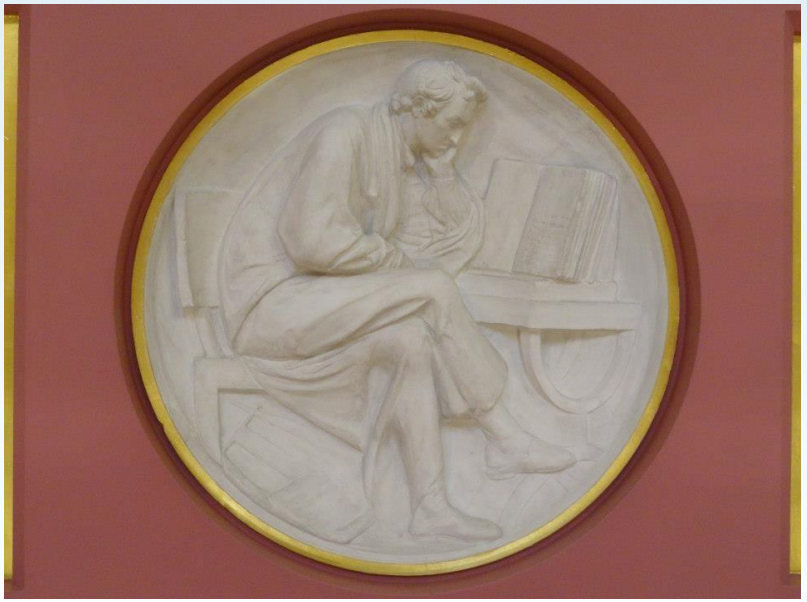
- EOSC is an infrastructure commons
- EOSC to use existing high spec. 3services
- HPC to be developed in tandem

Governance & Funding

- Strong Governance model, but flexible
- 3 levels of membership – institutional, operational, advisory

Content

- ❑ The scope of Open Science
- ❑ Open Access
- ❑ Research Data Management
- ❑ European Open Science Cloud
- ❑ Citizen Science
- ❑ Conclusions



Plaster Relief by John Flaxman, Flaxman Gallery, UCL

Citizen Science: Definitions

Citizen Science refers to general public engagement in scientific research activities when citizens actively contribute to science, either with their intellectual effort or surrounding knowledge or with their tools and resources

>> European Council White Paper on Citizen Science for Europe

Science isn't just something scientists do. It is something in which every single one of us has a stake

>> Professor Ian Chubb, former Chief Scientists of Australia

Citizen Science: Components At A Glance

- Determine if your research is suitable for citizen science
- Form a team
  (ideally: scientist+educator+librarian+evaluator)
- Develop, test, and refine
  (protocols, data forms, educational support materials and a marketing and communications package)
- Recruit citizens
  (and include them in a retention programme)
- Train citizens
  (and keep records of their training certificates)
- Event development
  (on sites, online, base camps, etc)
- Build FAIR Data
  (accept, edit, make it FAIR and display data)
- Analyze and interpret data
  (inform citizens about research methods and the use of their data)
- Diseminate results
  (use both academic and pop-science standards)
- Measure outcomes
  (perspectives: scientific, educational and engagement, event management)
- After event / project actions
  (equally important with any from above. Ask us!)

Citizen Science: Examples

Citizen Science it's not only about bugs, birds and stars (although we love them)

✓ **MATHEMATICS**
- ❖ 1938, The Math Tables Project
- ❖ 2016, CrowdMath

✓ **NEUROSCIENCE**
- ❖ 2012, Eyewire

✓ **GOVERNANCE**
- ❖ 2015, Open Seventeen

✓ **Digital Humanities**
- ❖ 2012, Transcribe Bentham

Examples of Current Citizen Science Projects in European Universities

UCL: Transcribe Bentham

Transcribe Bentham is a an award-winning participatory project based at University College London. Its aim is to engage the public in the online transcription of original and unstudied manuscript papers written by Jeremy Bentham (1748-1832), the great philosopher and reformer.

Project team

Transcribe Bentham is hosted by the Bentham Project in the Faculty of Laws, UCL, in collaboration with UCL's Centre for Digital Humanities, UCL Library Services and the University of London Computer Centre.

Funding

It was established under funding from the Arts and Humanities Research Council. It is now funded as part of the READ project. READ is funded by the European Union's Horizon 2020 research and innovation programme under grant agreement no. 674943.

Examples of Current Citizen Science Projects in European Universities

UCL: Transcribe Bentham … and Open Science

The Bentham Hackathon was held in partnership with IBM, along with the support of UCL Centre for Digital Humanities and UCL Innovation and Enterprise. **It was designed as a collaborative and open event** where participants could work together to explore how digital tools can help us to research Bentham's philosophy.

Benthamometer

A source of information about the progress of scanning, uploading and transcribing of the Bentham Papers such as:

- UCL Boxes digitised
- British Library volumes digitised
- Boxes/volumes uploaded to the Transcription Desk

"Many hands make light work. Many hands together make merry work" *- Jeremy Bentham (philosopher and reformer)*

Citizen Science: Roles for Libraries

- Build skills for engaging in citizen science projects
- Support, build (or be part of) a toolkit for developing citizen science projects in your institution
- Build collections of protocols, data forms and educational materials
- Contribute to make data FAIR and develop collections of datasets
- Offer infrastructure
- Contribute to evaluation processes
- Communicate all new findings and support both scholarly and pop science communications
- Participate in the recruiting and retention process. Assist volunteers to participate in projects
- Participate in marketing activities
- Promote a positive attitude towards citizen science

Citizen Science: Part of European Strategies

As part of **LIBER's 2018-2022 Strategy**, LIBER wants to increase the role of libraries in supporting citizen science. It proposes to do this by:

- Ensuring that Citizen Science enthusiasts are informed about library support for this field
- Making an overview of Citizen Science actions in Europe available to LIBER members
- Organising a Citizen Science workshop where members can discuss the most valuable actions.

European Council recommends:

- Promote the creation of appropriate tools as well as standards for interoperability, metadata, citations, anonymization and accessibility.
- Promote the design and definition of sustainability models for Citizen Science projects with long-term commitment for infrastructures and data repositories

LERU:

- Recognises citizen science as an evolving set of research methods, as well as its societal and educational benefits;
- Recommends creating a single point of contact for citizen science within the institution, to advise scientists and ensure liaison with national and regional citizen science initiatives

Citizen Science: Roles for Libraries, A Survey

Its aim is twofold:
1. To picture the current involvement of libraries in citizen science
2. To receive ideas about suitable roles for libraries in citizen science initiatives

We sent over 130 invitations.
We received 11 answers.
We look of course to receive more inputs!

You are kindly invited!

knowledge.services/citizenscience

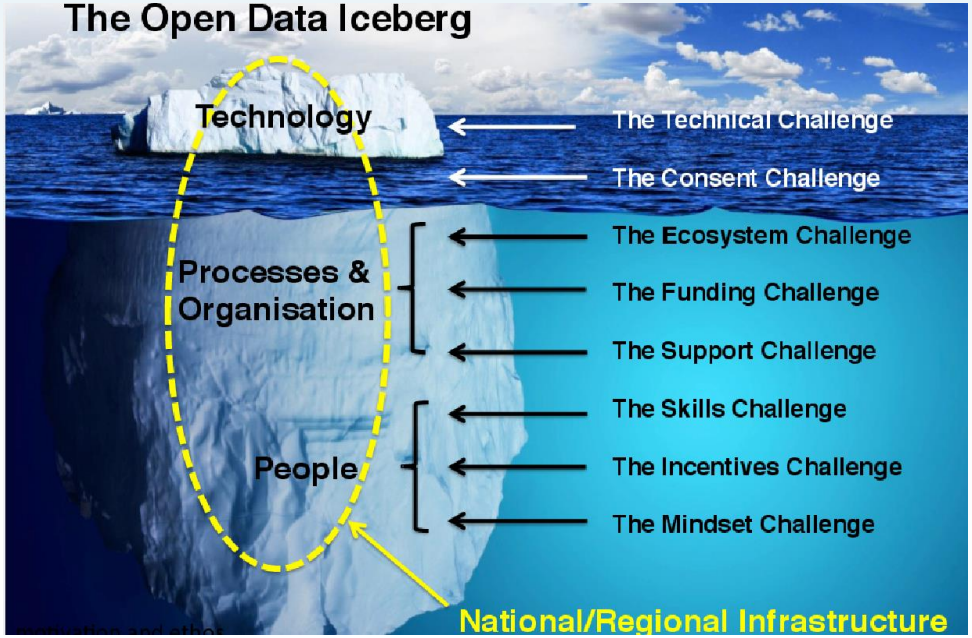
Citizen Science: Acknowledgements

- BONEY, R. Citizen Science: A Developing Tool for Expanding Science Knowledge and Scientific Literacy (2009)
- NIELSEN, M. Reinventing Discovery (2011)
- EC Green paper on Citizen Science for Europe: Towards a society of empowered citizens and enhanced research (2014)
- WYLER D., GREY F. LERU: Citizen Science at Universities: Trends, Guidelines and Recommendations (2016)
- The Australian Guide to Running a BioBlitz (2015)

Challenges for libraries in Open Science

- 4-step test for libraries to engage in Open Science

1. **Offer leadership across the university in open science approaches**
2. **Identify infrastructure needed to deliver change**
3. **Engage in skills development for staff**
4. **Ensure that your advocacy leads to innovation**



Focus on Open Science
Workshop Series in Europe

In partnership with:

LIBER, e-Infrastructures Austria Plus, EISZ Budapest and CTK Ljubljana

Nov.20th, Vienna: https://www.knowledge.services/events/2017-vienna/

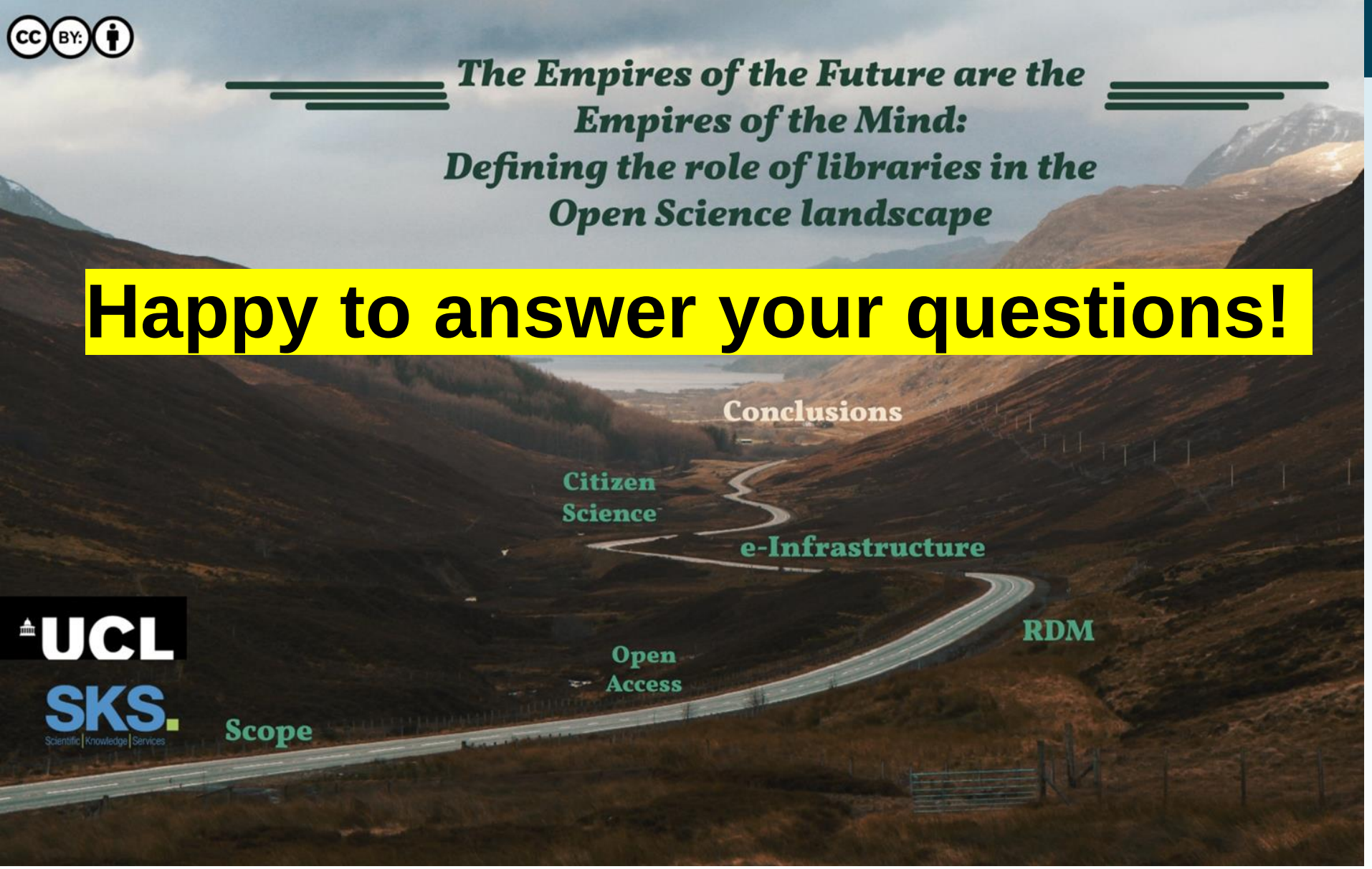
Nov.22nd, Budapest: https://www.knowledge.services/events/2017-budapest/

Nov.24th, Ljubljana: https://www.knowledge.services/events/2017-ljubljana/

The purpose of the Workshops is to introduce the concept and values of the Open Science agenda to new communities in continental Europe.

We are happy to consider other countries in which to organise such Workshops!

The Empires of the Future are the Empires of the Mind: Defining the role of libraries in the Open Science landscape



Dr. Paul Ayris
Pro-Vice-Provost (UCL Library Services)
Co-Chair of the LERU INFO Community
Adviser to the LIBER Board
e-mail: p.ayris@ucl.ac.uk

Dr. Tiberius Ignat
Managing Director
Scientific Knowledge Services
www.knowledge.services
e-mail: tiberius@scientificknowledgeservices.com