OpenAIRE
eInfrastructure for Open Science

Tony Ross-Hellauer
State and University Library,
University of Göttingen

OpenAIRE Slovenia National Workshop, 17th November 2016

@tonyR_H
@openaire_eu
EC Open Access Mandate Progression

FP7 (2008)
- 20% programme areas
- Deposit in Repositories
- APC payments during project
- ERC OA Guidelines

Horizon 2020 (2014)
- 100% programme areas
- Deposit in Repositories
- APCs during and after project
- Open Data Pilot (100% from 2017)
OpenAIRE: From Open Access to Open Science

Science. Set free.

Now in our third project phase …

OpenAIRE

OpenAIREplus

OpenAIRE2020
Jan. 2015 – Jun. 2018

OpenAIRE Slovenia National Workshop, 17th November 2016
What is Open Science?

Aim: To open up scientific products and processes from all levels to everyone

- **Open Access** (publications, data, software, educational resources)
- **Open Methodology** (open notebooks, study preregistration, citizen science)
- **Open Evaluation** (open peer review, open metrics)
Why Open Science?

Accessibility  Transparency

Responsibility  Collaboration

Inclusivity  Reproducibility

FAIRness

OpenAIRE Slovenia National Workshop, 17th November 2016
... fosters the **social** and **technical** links that enable Open Science in Europe and beyond

**Human Network**

**Digital Network**

**50 Partners** from every EU country, and beyond

Data centers, universities, libraries, repositories, legal experts
Human Infrastructure

• Local support for Europe’s diverse research landscape

Human support network

• 33 expert nodes all over Europe to help with:
  • OA training and support
  • OA policy development
  • Technical assistance
• World-wide synergies

<table>
<thead>
<tr>
<th>Strategic coordination</th>
<th>(UGOE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region North (CRISTIN)</td>
<td>Region East (EBI)</td>
</tr>
<tr>
<td>Denmark</td>
<td>Bulgaria</td>
</tr>
<tr>
<td>Finland</td>
<td>Croatia</td>
</tr>
<tr>
<td>Iceland</td>
<td>Czech Republic</td>
</tr>
<tr>
<td>Norway</td>
<td>Estonia</td>
</tr>
<tr>
<td>Sweden</td>
<td>Hungary</td>
</tr>
<tr>
<td>Latvia</td>
<td>Lithuania</td>
</tr>
<tr>
<td>Lithuania</td>
<td>Poland</td>
</tr>
<tr>
<td>Poland</td>
<td>Romania</td>
</tr>
<tr>
<td>Romania</td>
<td>Serbia</td>
</tr>
<tr>
<td>Slovakia</td>
<td>Slovenia</td>
</tr>
<tr>
<td>Cyprus</td>
<td>Greece</td>
</tr>
<tr>
<td>Austria</td>
<td>Belgium</td>
</tr>
<tr>
<td>Greece</td>
<td>Italy</td>
</tr>
<tr>
<td>France</td>
<td>Germany</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>Ireland</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>Spain</td>
<td>Turkey</td>
</tr>
<tr>
<td>Swiss</td>
<td>Switzerland</td>
</tr>
<tr>
<td>UK</td>
<td></td>
</tr>
</tbody>
</table>
Training, support and dissemination

- OpenAIRE helpdesk – direct point of contact for all H2020 and Open Science questions
- Regular webinars on meeting H2020 Open Science requirements and other key Open Science topics
- Workshops (~workshops in OpenAIRE2020) on open access, open data, Open Peer Review, measuring OA impact, etc.
- Factsheets, briefing papers & FAQs for researchers, research administrators, project coordinators & data providers
- Updates on Open Science via monthly newsletter and blog:
  - https://www.openaire.eu/newsletter/view
  - https://blogs.openaire.eu/

OpenAIRE Slovenia National Workshop, 17th November 2016
Access to
17 mi **unique** publications
25 K datasets linked to publications
750 **validated** data providers
370K publications linked to **projects** from **6 funders**

3.5K links to software repositories
Title: Open Access Infrastructure for Research in Europe
Funding: FP7 | SP4 | INFRA
Call: FP7-INFRASTRUCTURES-2009-1
Contract (GA) number: 245686
Start Date: 2009/12/01
End Date: 2012/11/30
Open Access mandate: yes
Special Clause 39: yes
Organizations: CERN, MSDECS, UMINHO, EIPFL, UTARTU, UGDE-SUB, CSIC, UCY, UnInnot, UNIB, EKT/MPR, DTU, Office of the Prime Minister, KTU, Sarniho, UU, IMBAS, CINECA Consorzio Interuniversitario, UKON, SURF, COUPERIN, UL, UR, UUT, DK, CNR, IPGRI, University of KNEZICA V BRATISLAVE, UOA, VSBU, Trinity College Dublin, National Library of Sweden, University of Debrecen DE, UMI, UHBL, EMBL, UW, UGent, FECTY
More information: Detailed project information (CORDIS)

Infrastructure-based research digital libraries
Cavetela, Leonardo; Castelli, Donatella; Manghi, Paolo (CNR-ISTI); Pagano, Pasquale (2013) Projects: EC | OPENAIRE (245686)

Digital Libraries have evolved from a digital counterpart of traditional libraries to highly dynamic environments conceived to provide a community with the data and services needed to accomplish its tasks. This trend is particularly frequent in the context of scientific research communities, whose members are scattered among multiple organizations across the world, with requirements that are very large, multidisciplinary, and evolving with innovation. The realization of such Research Digital...

PlosOpenR - Exploring FP7 funded PLOS publications
Jahn, Najko; Fenner, Martin; Schmuggen, Jochen (2013)
Projects: EC | OPENAIRE (245686)
OpenAIRE funder services

Using the OpenAIRE portal, funders can

• Filter publications/data by funder and browse by specific funding streams
• Search via project title, acronym or grant agreement and view specific statistics of the project: publications/data over time, OA status, where they were published/deposited, etc.
• View overall funder/funding stream statistics (facets over time, data source, institution, etc.)
• Correlate author/institution output with funding information
• Visualize clusters of publications/data or funding based on their interlinking (national or ERA-wide level)
## Funders

**Results from text and data mining**

<table>
<thead>
<tr>
<th>Funder</th>
<th>Country</th>
<th>Status</th>
<th># of projects</th>
<th># of related publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCT</td>
<td>PT</td>
<td>Production</td>
<td>10,688</td>
<td>11,637</td>
</tr>
<tr>
<td>Australian Research Council</td>
<td>AUS</td>
<td>Production</td>
<td>21,786</td>
<td>6,552</td>
</tr>
<tr>
<td>National Health and Medical Research Council</td>
<td>AUS</td>
<td>Production</td>
<td>23,209</td>
<td>4,425</td>
</tr>
<tr>
<td>National Science Foundation</td>
<td>USA</td>
<td>BETA</td>
<td>80,912</td>
<td>48,947</td>
</tr>
<tr>
<td>Science Foundation</td>
<td>IR</td>
<td>BETA</td>
<td>4,130</td>
<td>1,917</td>
</tr>
<tr>
<td>Ministry of Science Education and Sport</td>
<td>HR</td>
<td>In queue for BETA</td>
<td>(MSES) 2,120</td>
<td>(CSF) 234</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands Organisation for Scientific Research (NWO)</td>
<td>NL</td>
<td>Under testing with initial sets of projects</td>
<td>8,000</td>
<td>700</td>
</tr>
<tr>
<td>Deutsche Forschungsgemeinschaft (DFG)</td>
<td>DE</td>
<td>No official DFG funding list. Preliminary tests with fulltexts from Fraunhofer.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>National Institutes of Health (NIH)</td>
<td>USA</td>
<td>Preliminary work started.</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Supporting the Open Data Pilot: Training & Support Materials

- Briefing papers, factsheets, webinars, workshops, FAQs
- Information on:
  - Open Research Data Pilot
  - Creating a DMP
  - Selecting a data repository

- [https://www.openaire.eu/opendatapilot](https://www.openaire.eu/opendatapilot)
- [https://www.openaire.eu/support](https://www.openaire.eu/support)
The *open* repository for *all* research objects

zenodo.org
FP7 Post-Grant Open Access Pilot

• Pilot runs for *two years* (i.e. until Apr 30th, 2017)

• Provides funding to *cover the OA publishing fees for publications arising from completed FP7 projects*

• 4 million euros are made available by the EC to fund the OA “post-grant” publications of *over 8,000 completed FP7 projects*

• No hybrid journals; 2000 EUR cap on APCs; max 3 pubs per project

https://postgrantoapilot.openaire.eu/
New in OpenAIRE2020

Research and development into new trends in scholarly communication

- Linked Open Data
- Legal issues in Open Data
- Data Citation
- Literature-Data Integration
- OA Metrics
- Open Peer Review

OpenAIRE Slovenia National Workshop, 17th November 2016
Why Open Peer Review?

Problems with traditional peer review ...

- Time
- Accountability
- Bias
- Incentive
- Wasted effort
“Open Peer Review” encompasses diverse constellations of many distinct aspects

- Open identities
- Open reports
- Open participation
- Open interaction
- Open pre-review manuscripts
- Open final-version commenting
- Open platforms

** 122 definitions collected and analysed **
<table>
<thead>
<tr>
<th>n=</th>
<th>Open identities</th>
<th>Open reports</th>
<th>Open participation</th>
<th>Open interaction</th>
<th>Open pre-review manuscripts</th>
<th>Open final-version commenting</th>
<th>Open platforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Survey: Attitudes to OPR

- Online survey, 8 September – 7 October 2016
- Disseminated via mailing lists, publishers’ newsletters and contacts
- Aims:
  - Exploration of author attitudes towards peer review, openness in various facets
  - Views on terminology/definition
  - Experiences with different aspects of openness
- Over 3,000 responses received, primarily from STM research areas
- High number of respondents with experiences in open peer review
  ... as editor 19.4% (594 of 3062)
  ... as author 63% (1930)
  ... as publisher 2.2% (68)
  ... as reviewer 59.1% (1808)
Responses by discipline

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Freq</th>
<th>Perc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth and environmental Sciences</td>
<td>1274</td>
<td>41.61</td>
</tr>
<tr>
<td>Biology and Life sciences</td>
<td>447</td>
<td>14.60</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>444</td>
<td>14.50</td>
</tr>
<tr>
<td>Physics and Astronomy</td>
<td>165</td>
<td>5.39</td>
</tr>
<tr>
<td>Technology and Engineering</td>
<td>137</td>
<td>4.47</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>112</td>
<td>3.66</td>
</tr>
<tr>
<td>Computer Sciences / IT</td>
<td>80</td>
<td>2.61</td>
</tr>
<tr>
<td>Chemistry</td>
<td>73</td>
<td>2.38</td>
</tr>
<tr>
<td>Mathematics and Statistics</td>
<td>63</td>
<td>2.06</td>
</tr>
<tr>
<td>Agriculture and Food sciences</td>
<td>60</td>
<td>1.96</td>
</tr>
<tr>
<td>None of the above</td>
<td>56</td>
<td>1.83</td>
</tr>
<tr>
<td>Psychology and Philosophy</td>
<td>50</td>
<td>1.63</td>
</tr>
<tr>
<td>Languages and Literature</td>
<td>35</td>
<td>1.14</td>
</tr>
<tr>
<td>History and Archeology</td>
<td>23</td>
<td>0.75</td>
</tr>
<tr>
<td>Economics</td>
<td>18</td>
<td>0.59</td>
</tr>
<tr>
<td>Arts and Architecture</td>
<td>14</td>
<td>0.46</td>
</tr>
<tr>
<td>Law and Political science</td>
<td>11</td>
<td>0.36</td>
</tr>
</tbody>
</table>
Do you think X will make peer review better, worse, or have no effect?

- Open Reports
- Open Identity
- Open Participation
- Open Interaction
- Open pre-review manuscripts
- Open final-version commenting
- Open platforms

0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

Much worse
worse
Neither better nor worse
Better
Much better
Don't know
### Attitudes towards open identities

- **Reviewers should be allowed to choose whether or not to make their identities open.**
  - 15% Strongly disagree
  - 11% Disagree
  - 24% Neutral
  - 26% Agree
  - 34% Strongly agree

- **Potential reviewers are less likely to agree to review for journals that make reviewer identities open.**
  - 13% Strongly disagree
  - 20% Disagree
  - 24% Neutral
  - 26% Agree
  - 37% Strongly agree

- **Making reviewer identities open will make reviewers less likely to make strong criticisms.**
  - 18% Strongly disagree
  - 16% Disagree
  - 21% Neutral
  - 26% Agree
  - 39% Strongly agree

- **Making reviewer identities open will increase the quality of reviews.**
  - 35% Strongly disagree
  - 21% Disagree
  - 21% Neutral
  - 26% Agree
  - 17% Strongly agree

- **Making reviewer identities open is fairer to authors.**
  - 30% Strongly disagree
  - 26% Disagree
  - 26% Neutral
  - 21% Agree
  - 17% Strongly agree

- **Potential authors are less likely to submit to journals that make reviewer identities open.**
  - 55% Strongly disagree
  - 31% Disagree
  - 14% Neutral
  - 5% Agree
  - 1% Strongly agree
Attitudes towards open reports

1. Published review reports provide useful information for the reader.
   - 17% Strongly disagree
   - 18% Disagree
   - 65% Agree
   - 6% Strongly agree

2. Publishing review reports will increase the quality of reviews.
   - 21% Strongly disagree
   - 18% Disagree
   - 60% Agree
   - 1% Strongly agree

3. Potential reviewers are less likely to agree to review for journals that publish review reports.
   - 25% Strongly disagree
   - 23% Disagree
   - 52% Agree
   - 0% Strongly agree

4. Publishing review reports will make reviewers less likely to make strong criticisms.
   - 32% Strongly disagree
   - 22% Disagree
   - 46% Agree
   - 0% Strongly agree

5. Potential authors are less likely to submit to journals that publish review reports.
   - 45% Strongly disagree
   - 28% Disagree
   - 27% Agree
   - 0% Strongly agree
Open Peer Review Module for repositories

- OPR Plug-in for Repositories (DSpace)
  - Open Reports
  - Open Identities
- Converts repositories into functional evaluation platforms
  - Includes published reviews, disclosed identities, reviewer reputation system
  - Complete code, with full documentation, available on Github under an open license: https://github.com/arvoConsultores/Open-Peer-Review-Module
• Integration with Zenodo
• Capturing reviews from “journal clubs”
• Experiment with small financial incentives
Outlook

• Further research and experimentation is needed, in different context (research data, conferences, books, proposals, etc.)
• Uncouple review from publishing? (federated trusted services)
• Common language and standards?
  • Disciplinary areas, publication types – some commonalities, but also different needs to be taken into account
  • What kind of openness works in which context
  • How effective are the services
  • How can reviewers be rewarded (e.g. on CVs / researcher profiles)
  • Citation of review reports?
Thank you!

www.openaire.eu
@openaire_eu
facebook.com/groups/openaire
linkedin.com/groups/OpenAIRE-3893548
Ross-hellauer@sub.uni-goettingen.de