Horizon 2020 Policy Support Facility

Open metrics and Rewards. Key concepts and overview of practices.
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Visions vs realities

Society
- Democratization of research
  - New research methods
  - Engagement of society
- Transformation of science
  - Open access to research
  - Collaboration in research
- Innovation
  - Transparent replicable research
  - New disciplines, new research topics

Policy
- Perspectives
- Time
- Fields
- Technologies
- Humanities
- Archives
- Administrations
- Researchers
- Publics
- Media
- Sciences
- Industries
- NGOs

Symbiosis of science, society and policy
Open cultures
Entanglements: credit and metrics

- **E/valuation gap**: discrepancy between evaluation criteria and the social, cultural and economic functions of science (Wouters)
- **E/valuation crisis**: What can be measured? Vs. What is relevant and excellent research? --> Impact driven research

"Yes, a trivial observation, but fodder for at least five papers."
Gatekeepers of access and metrics

WEB OF SCIENCE™
THE COMPLETE CITATION CONNECTION

Scopus
The largest abstract and citation database of peer-reviewed literature from more than 5,000 publishers

Google Scholar
Alternative and open metrics - key concepts

Altmetrics (common approaches)

- **Viewed** - views and downloads
- **Discussed** - journal comments, science blogs, Wikipedia, Twitter, Facebook and other social media like ImpactStory
- **Saved** - Zotero, CiteULike and other social bookmarks
- **Cited** - citations in the scholarly literature, tracked by Web of Science, Scopus, GoogleScholar, CrossRef and others
- **Recommended** - for example used by F1000Prime

Open metrics

- **Open Source / Methods** – transparency in methodology and software
- **Open Data** – disclosure of full data, meshing data from several sources
- **Open Infrastructure** – developing evaluation frameworks for communities
- **Open Standards** – sustainable interoperability
- **Open Communication** – sharing decision making and changes of strategy with the users
  → Creating incentives for open science and its users
Quantification of what for what?

You are so totally not going to read this....
## Inclusive set of indicators for research impact

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<tr>
<th>Structure</th>
<th>Leadership &amp; culture</th>
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<td>Collaborations with stakeholders</td>
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<td>Continuity and infrastructure</td>
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<td>Process</td>
<td>Setting research priorities</td>
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<td>Posing the right questions</td>
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<td>Incorporation of next steps</td>
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<td>Design, conduct, analysis</td>
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<td>Regulation and management, FAIR data sharing</td>
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<td>Outcomes (from SEP)</td>
<td>Research products for peers</td>
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<td>Research products for societal groups</td>
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<td>Use of research products by peers</td>
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Taken from Presentation of Frank Miedema
Leiden Manifesto for research metrics

1. Quantitative evaluation should support qualitative, expert assessment
2. Measure performance against the research missions of the institution, group or researcher,
3. Protect excellence in locally relevant research
4. Keep data collection and analytical processes open, transparent and simple
5. Allow those evaluated to verify data and analysis
6. Account for variation by field in publication and citation practices
7. Base assessment of individual researchers on a qualitative judgement of their portfolio.
8. Avoid misplaced concreteness and false precision
9. Recognise the systemic effects of assessment and indicators
10. Scrutinize indicators regularly and update them.

Alternative and open metrics in practice

The big question is: how are they used? What is changing?
The Declaration on Research Assessment

As of January 2017, Imperial is a signatory of the San Francisco Declaration on Research Assessment (DORA).

We are committed to ensuring that we will not consider journal-based metrics, such as journal impact factors (JIFs), in assessing the research achievements of staff or candidates for recruitment. Instead, in line with the Richardson review, we are determined to ensure that our procedures are grounded in appropriate evidence and fully contextualised.

Signing DORA means that JIFs will no longer be promoted, directly or indirectly, in the assessment of our staff, or in job adverts and person-specifications. We aim to give clear guidance to candidates for promotion or hiring on our assessment procedures.

These moves should in no way inhibit the choices made by staff on where to publish their research outputs. They are intended to give staff confidence that their work will be judged for what it is – not where it has been published - alongside their other contributions to College’s educational and societal mission.

Signing the declaration is also intended to empower staff to challenge any instances of practice that deviate from the goal of ensuring that research assessment practices are as rigorous as possible.

We recognise that establishing a transparent, evidence-based processes of staff evaluation as part of a culture that aims to be fully inclusive will take time. We look forward to working with all members of the College community in achieving that.
Openness in reward and incentive systems - key concepts

- Sharing of knowledge and resources
- Reuse of knowledge
- Open licensing
- Collaboration
- Creation of open infrastructures
- Open evaluation
- Societal engagement and participatory approaches

→ Funding, reputation, career advancement, engagement, networking, commercialisation,...
Openness in reward and incentive systems in practice

Vienna Principles
a vision for scholarly communication

1. Accessibility
2. Discoverability
3. Reusability
4. Reproducibility
5. Transparency
6. Understandability
7. Collaboration
8. Quality Assurance
9. Evaluation
10. Validated Progress
11. Innovation
12. Public Good
Openness in hiring strategies:

“Our department embraces the values of open science and strives for replicable and reproducible research. For this goal we support transparent research with open data, open material, and pre-registrations. Candidates are asked to describe in what way they already pursued and plan to pursue these goals.”
Policy challenges

Fostering a sustainable transition to Open Science in epistemic cultures entails...

- Embedding OS into curricula and performance negotiations with higher education institutions (focus on training and skills)
- Increasing recognition of OS practices in the academic reward system (promoting best practices and creating visibility)
- Creating manifold incentives for engagement with OS caring for differences in epistemic cultures (specific OS funding tracks, facilitating spaces and time for interdisciplinary and transdisciplinary collaboration, opening spaces for science in society)
- Understanding the “metric tide” and using it with care → responsible metrics, developing the potential of multiple metrics towards deep understanding and “management” of knowledge domains
- Incentivising an open science environment for individual researchers as well as funding agencies and education and research organisations
- Monitoring, documentating, and analysing transition phases
Points for discussion in the break out session

- Discuss current ambitions, policy drivers and levers that (may) lay at the basis for revising metrics and look for additional indicators for science;
- Discuss how that may influence or has influenced the design of Open Science policies and practices in this respect countrywise;
- Prioritize specific learning topics to be addressed in the MLE
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Open Data
• FAIR data sharing is the default for funding scientific research

Science cloud
• All EU researchers are able to deposit, access and analyse European scientific data through the open science cloud, without leaving their desk

Altmetrics
• The role of alternative metrics in replacing/complementing conventional indicators for research quality and impact (e.g. Journal Impact Factors and citations)

Changing business models for scientific publishing
• All peer reviewed scientific publications are freely accessible
Reward

- The European research career evaluation system fully acknowledges Open Science activities

Research Integrity

- All publically funded research in the EU adheres to commonly agreed Open Science Standards of Research Integrity

Education and skills

- All young scientists in Europe have the necessary skills and support to apply Open Science research routines and practices

Citizen Science

- Citizen scientists significantly contribute and are recognised as valid knowledge producers of European science