Rebecca Lawrence, PhD

Managing Director, F1000 Group

Member of Open Science Policy Platform

rebecca.Lawrence@f1000.com

@rnl_s | @f1000

EU2019.FI

Today's session

12.00-12.15	Introduction and background – Rebecca Lawrence
12.15-12.35	Current work in Finland at national level towards a more responsible evaluation of research – Laura Himanen
	Current work at LERU to incentivise open knowledge behaviours across member institutions in Europe – Ignasi Labastida i Juan
	Role of rewards and incentives in the context of EOSC developments – Henriikka Mustajoki
12.35-13.05	Split into 3 discussion groups – Rebecca, Laura, Ignasi
13.05-13.25	Reporting back
13.25-13.30	Wrap-up

Open Science / Research aims at

“increasing research quality, boosting collaboration, speeding up the research process, making the assessment of research more transparent, promoting public access to scientific results, as well as introducing more people to academic research”

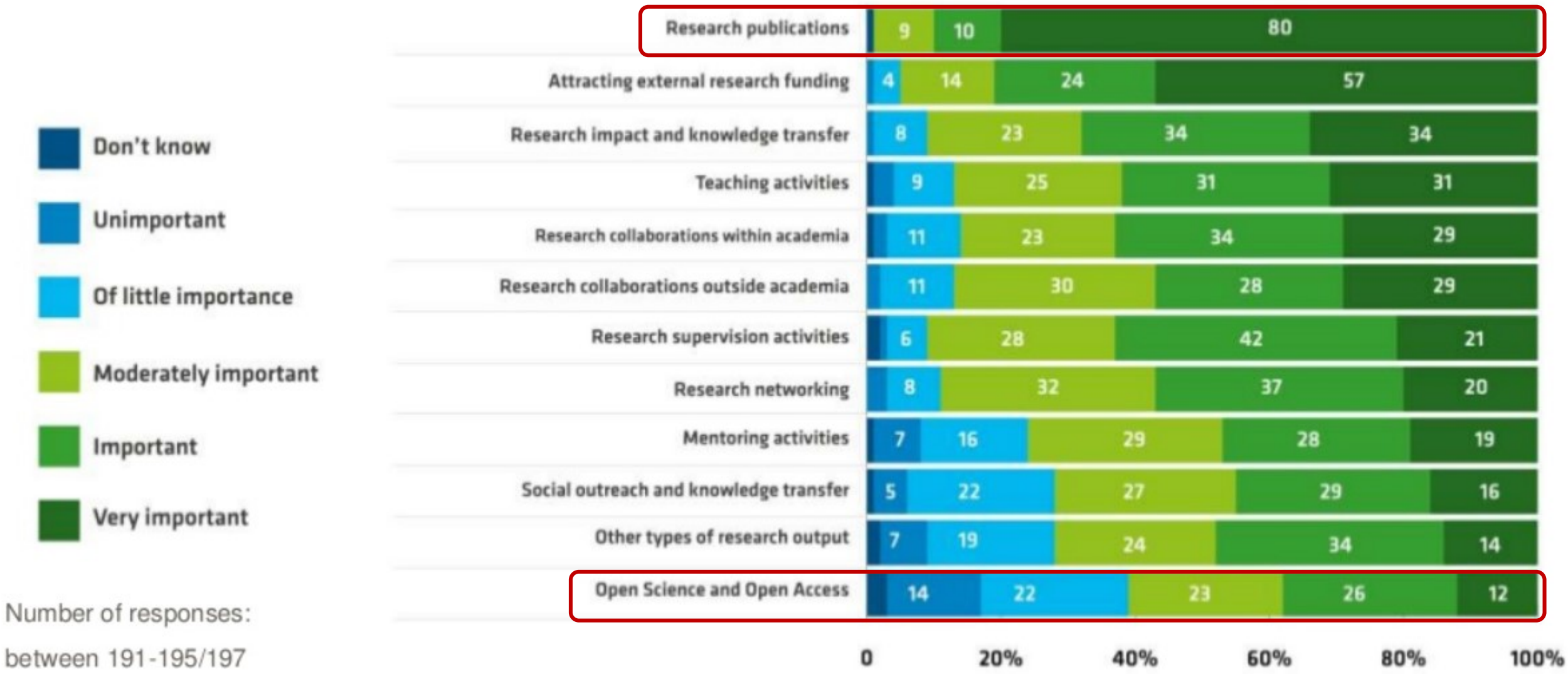
Friesike, S. & Schildhauer, T. (2015). Open Science: many good resolutions, very few incentives, yet. In: Welpe, I.M.,et al (Eds.). *Incentives and Performance. Governance of Research Organizations*. Springer

Main barriers to uptake of open knowledge practices

- Awareness & skills: why and how
- Infrastructure (and funding) to capture / share range of outputs & metadata
- Narrow focus of evaluation – primary focus is:
  - on final scholarly output (vs what you have done and how)
  - its venue of publication
- Current system still largely based on historic infrastructures built around articles – ingrained across system
- Lack connected infrastructure to support open knowledge practices

EUA survey Sep 2019: Research Assessment in the Transition to Open Science

Which types of academic work matter most for research careers?



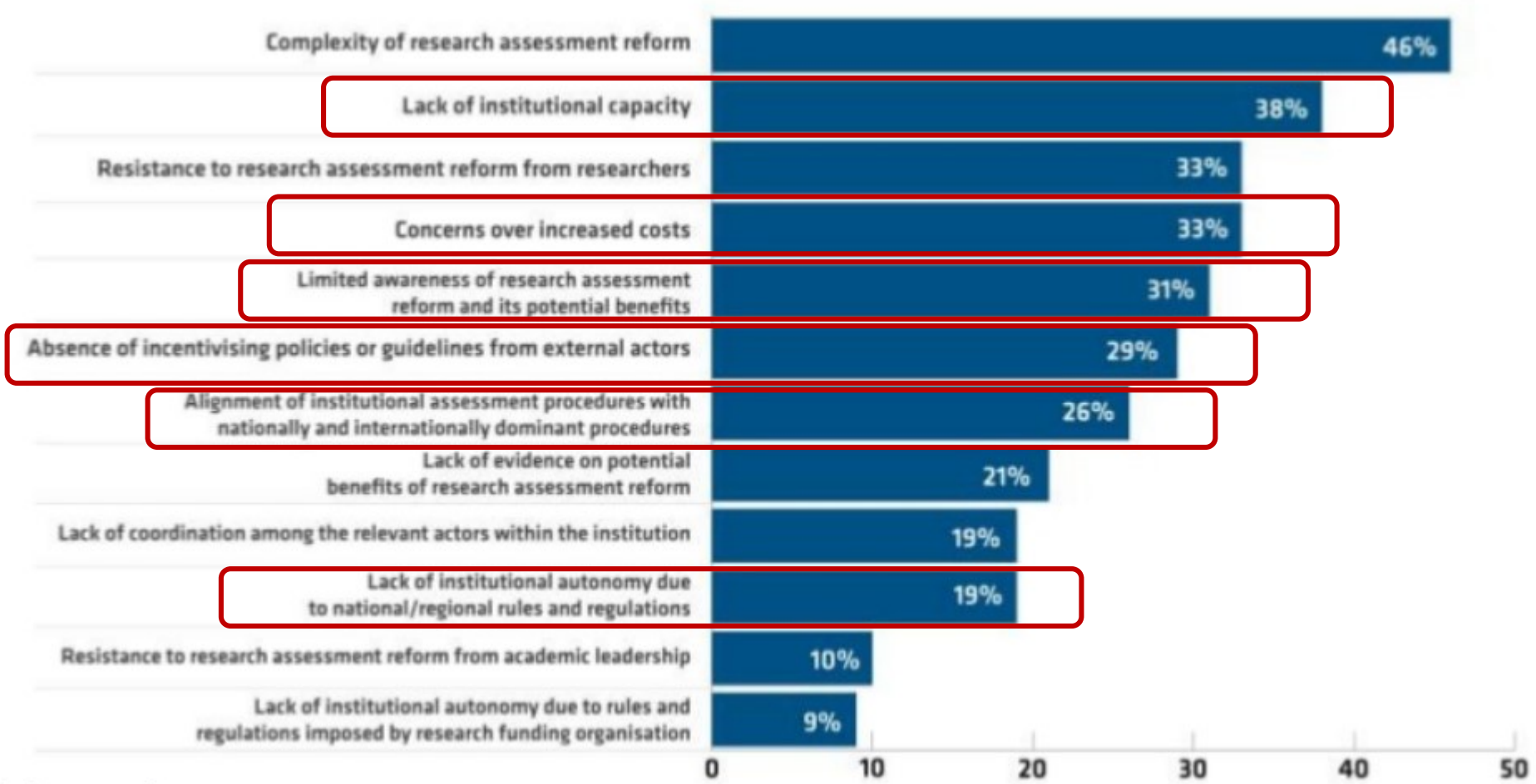
Number of responses:

between 191-195/197

https://www.slideshare.net/EurUniversityAssociation/2019-research-assessment-in-the-transition-to-open-science

Many perceived barriers you can influence

Main barriers and difficulties to review research assessment procedures



Multiple-choice question

Number of responses:

233/254

Moving to a more holistic & balanced research evaluation system

DORA

sfdora.org

@DORAssessment

Signed by >500 organizations and >12,500 individuals

Supporting organizations

ascb an international forum for cell biology

CANCER RESEARCH UK

eLIFE

EMBO excellence in life sciences

F1000Research Open for Science

Hindawi

PLOS

The Company of Biologists

DORA

Good Practices

Research Institutes

DORA's ultimate aim is not to accumulate signatures but to promote *real* change in research assessment. One of the keys to this is the development of robust and time-efficient ways of evaluating research and researchers that do not rely on journal impact factors. We are keen to gather and share existing examples of good practice in research assessment, including approaches to funding and fellowships, hiring and promotion, and awarding prizes, that emphasize research itself and not where it is published.

If you know of exemplary research assessment methods that could provide inspiration and ideas for research institutes, funders, journals, professional societies, or researchers, please contact DORA.

University of California, Berkeley

Department of Molecular and Cell Biology & Helen Wills Neuroscience Institute

Applications for assistant professor positions were designed to highlight the significance of an applicant's accomplishments rather than default to using journal-based metrics as a substitute for research quality. The advertisement asked applicants to summarize their major research accomplishments, ongoing and planned research program, and contributions to diversity. Applicants were also asked to select three significant articles from their list of publications and describe the impact of each.

University College London

University College London (UCL) released its Academic Careers Framework, which

Funders

Professional Societies

Research Institutes

Examples include:

- CRUK - describe significance and impact of 3-5 key research achievements:
  preprints, training delivered, contribution to consortia, patents, and sharing of key datasets, software, novel assays and reagents, and research publications
- FWF - up to 10 most important scientific/scholarly research achievements – beyond publications: *e.g. awards, conference papers, keynote speeches, important research projects, research data, software, codes, preprints, exhibitions, knowledge transfers, science communication, licenses, or patents.*
- NIH - Use bio-sketches: summary of impacts of contributions.
- University Medical Center Utrecht - Involve all career-stages to co-develop policies to measure societal impact / research excellence – signifies agreement to be judged by the criteria.

https://ec.europa.eu/research/openscience/index.cfm?pg=rewards_wg

Open Science Career Assessment Matrix (OS-CAM)	
Open Science activities	*Possible evaluation criteria*
RESEARCH OUTPUT	
Research activity	Pushing forward the boundaries of open science as a research topic
Publications	Publishing in open access journals Self-archiving in open access repositories
Datasets and research results	Using the FAIR data principles Adopting quality standards in open data management and open datasets Making use of open data from other researchers
Open source	Using open source software and other open tools Developing new software and tools that are open to other users
Funding	Securing funding for open science activities
RESEARCH PROCESS	
Stakeholder engagement / citizen science	Actively engaging society and research users in the research process Sharing provisional research results with stakeholders through open platforms (e.g. Arxiv, Figshare) Involving stakeholders in peer review processes
Collaboration and Interdisciplinarity	Widening participation in research through open collaborative projects Engaging in team science through diverse cross-disciplinary teams
Research integrity	Being aware of the ethical and legal issues relating to data sharing, confidentiality, attribution and environmental impact of open science activities Fully recognizing the contribution of others in research projects, including collaborators, co-authors, citizens, open data providers
Risk management	Taking account of the risks involved in open science
SERVICE AND LEADERSHIP	
Leadership	Developing a vision and strategy on how to integrate OS practices in the normal practice of doing research Driving policy and practice in open science Being a role model in practicing open science
Academic standing	Developing an international or national profile for open science activities Contributing as editor or advisor for open science journals or bodies
Peer review	Contributing to open peer review processes Examining or assessing open research
Networking	Participating in national and international networks relating to open science
RESEARCH IMPACT	
Communication and Dissemination	Participating in public engagement activities Sharing research results through non-academic dissemination channels Translating research into a language suitable for public understanding
IP (patents, licenses)	Being knowledgeable on the legal and ethical issues relating to IPR Transferring IP to the wider economy
Societal impact	Evidence of use of research by societal groups Recognition from societal groups or for societal activities
Knowledge exchange	Engaging in open innovation with partners beyond academia
TEACHING AND SUPERVISION	
Teaching	Training other researchers in open science principles and methods Developing curricula and programs in open science methods, including open science data management Raising awareness and understanding in open science in undergraduate and masters' programs
Mentoring	Mentoring and encouraging others in developing their open science capabilities
Supervision	Supporting early stage researchers to adopt an open science approach
PROFESSIONAL EXPERIENCE	
Continuing professional development	Investing in own professional development to build open science capabilities
Project management	Successfully delivering open science projects involving diverse research teams
Personal qualities	Demonstrating the personal qualities to engage society and research users with open science Showing the flexibility and perseverance to respond to the challenges of conducting open science

European Commission

OSPP-REC

Open Science Policy Platform Recommendations

https://ec.europa.eu/research/openscience/index.cfm?pg=open-science-policy-platform

Research and Innovation

Name	Representative organisation and Affiliation	Stakeholder Group
Sergio Andreozzi	The EGI Foundation	Open Science Platforms/Intermediaries
Michela Bertero	EU-LIFE (Alliance of 13 top research centres in life sciences to support and strengthen European research excellence), co-founder; Head of the International and Scientific Affairs Unit, CRG (Centre for Genomic Regulation, Barcelona, Spain)	Research Organisations
Kurt Deketelaere	League of European Research Universities (LERU), Secretary General	
Paul Ayris	LERU co-Chair of the INFO Community (alternate representative)	
Jennifer Edmond	Digital Research Infrastructure for Arts and Humanities (DARIAH), Member of the DARIAH-IE steering committee	
Manuela Epure	The Alliance of Central and East European Universities (ACEU), Vice-President	
Michele Garfinkel	The European Molecular Biology Organization (EMBO), Manager of the EMBO Science Policy Programme	
Tuija Hirvikoski	European Network of Living Labs (ENoLL), elected President	
Kristiina Hormia Poutanen	Association of European Research Libraries (LIBER), President	
Matthias Kleiner	Science Europe, Member of Governing Board	
Stephan Kuster	Science Europe, Secretary General (alternate representative)	
Wolfram Koch	European Association for Chemical and Molecular Sciences (EUCHEMS), Member of Executive Board	
Ernst Kristiansen	European Association of Research and Technology Organisations (EARTO), Treasurer and Member of Executive Board	
Rebecca Lawrence (*OSPP-REC Chair*)	F1000, Managing Director	
Sabina Leonelli (*OSPP-REC Rapporteur*)	Global Young Academy (GYA), elected Member	
Norbert Lossau	European University Association (EUA), Vice-President of the University of Göttingen	Universities
Karel Luyben	The Conference of European Schools for Advanced Engineering Education and Research (CESAER), Vice-President Research, and Chairman of the Task Force on Open Science	Universities
Michael Mabe	International Association of Scientific, Technical and Medical Publishers (STM), Chief Executive Officer	Publishers
Philip Carpenter	STM Board Member (alternate representative)	
Catriona J. MacCallum (*OSPP-REC Rapporteur*)	Open Access Scholarly Publishers Association (OASPA), Chair of Policy Committee; Director of Open Science (Hindawi)	Publishers
Paul Peters	OASPA President (alternate representative)	
Natalia Manola	OpenAIRE, an open access infrastructure, Managing Director	Open Science Platforms/Intermediaries
Eva Méndez Rodríguez	Young European Research Universities Network (YERUN); Deputy Vice-President for Scientific Policy, Open Science, Universidad Carlos III de Madrid	Universities
Christophe Rossel	European Physical Society (EPS), Past-President	Academies/Learned Societies
Matthew Scott	GÉANT (A pan-European collaboration on e-infrastructure and services for research and education), Chief Programmes Officer	Open Science Platforms/Intermediaries
Steve Cotter	GÉANT Chief Executive Officer (alternate representative)	
Jan-Eric Sundgren	Business Europe, Chairman of the Working Group for Research, Technology and Innovation	Open Science Platforms/Intermediaries
Michela Vignoli	Young European Associated Researchers Network (YEAR), Board Member	Academies/Learned Societies
Johannes Vogel (*OSPP Chair*)	European Citizen Science Association (ECSA), Chair	Citizen Science Organisations
Maike Weisspflug	European Citizen Science Association (alternate representative)	
John Wood	Research Data Alliance (RDA), Co-Chair, and Chair of RDA Europe	Open Science Platforms/Intermediaries

OSPP-REC: Next-generation indicators

https://ec.europa.eu/research/openscience/index.cfm?pg=open-science-policy-platform

Research Indicators and Next-Generation Metrics

Evaluations of individual researchers or of research groups **should not use journal brand or Impact Factor as a proxy for research quality**. Those responsible for hiring, promotion, funding and/or the evaluation of researchers must **use a broader, tailored range of quantitative and qualitative indicators** of research activity, progression and impact that incentivises and rewards open research practice. All **publication venues must prominently display a broad range of indicators** for all research outputs.

Quantitative and qualitative **indicators need to be identified and developed for research assessment that captures the full range of contributions** to the knowledge system. These should reflect the complexity and varied context of the research environment, the specific characteristics of the research being undertaken, as well as the new kinds of questions and results that might emerge in an open system.

Experiments, pilots and case studies assessing the validity of such indicators need to be undertaken urgently, and included as part of FP9 with appropriate funding allocated to support them. The results and data of these pilots must be made publicly available as exemplars for further implementation.

All researchers need to be identified through an ORCID ID. Best practice for **CV/biosketch evaluation should be developed** and publicly showcased to encourage a **broader recognition of the range of verifiable (and especially open) contributions** individuals make to the knowledge system, including teaching and peer review, and the production of a broad range of output types. The career narrative should be central to the evaluation of individual researchers as it provides the crucial context in which indicators can be interpreted.

The **data, metadata and methods that are relevant to research evaluation**, including but not limited to citations, downloads and other potential indicators of academic re-use, **should be publicly available for independent scrutiny and analysis** by researchers, institutions, funders and other stakeholders.

Research & E-Infrastructures

Policy Making Organisations

Researchers

Research Libraries

Research Funding Organisations

Scientific Societies & Academies

Universities & Research Performing Organisations

Publishers

Citizen Science & Public Engagement Organisations

OSPP-REC: Rewards & incentives

https://ec.europa.eu/research/openscience/index.cfm?pg=open-science-policy-platform

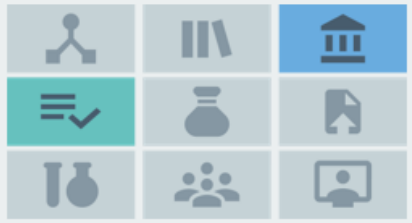
Rewards and Incentives

Funders, research institutions and other evaluators of researchers should actively **develop/adjust evaluation practices and routines to give extra credit to individuals, groups and projects who integrate Open Science within their research practice**.

Studies must be commissioned and funded to propose guidelines for best practice and tools for research assessment by 2019, together with an **active delivery plan and associated timeline for their implementation**. These guidelines must take into account career stage and discipline, and be appropriately tailored to their target such as individual, institution and so forth. **Exemplars of innovation and good open science practice must be collated**, taking into account the DORA Declaration, the Leiden Manifesto, the OS-CAM and other relevant initiatives.

Public research performing and funding organisations (RPOs/RFOs) should **provide public and easily accessible information about the approaches and measures being used to evaluate researchers, research and research proposals**.

The traditional academic career structure disincentivises Open Science because of the current focus on tenured positions based solely or largely on publication output. **Institutions need to have a career and reward structure for all researchers, and particularly for Early Career Researchers (ECRs), that values and promotes a diverse range of outputs, activities and career directions.** This should include facilitating a means by which researchers can, for example, move between academia and industry or between national jurisdictions.



- Research & E-Infrastructures
- Policy Making Organisations
- Researchers
- Research Libraries
- Research Funding Organisations
- Scientific Societies & Academies
- Universities & Research Performing Organisations
- Publishers
- Citizen Science & Public Engagement Organisations

Using research-related metrics responsibly

Indicator Frameworks for Fostering Open Knowledge Practices in Science and Scholarship

Expert Group on Indicators for Researchers' Engagement with Open Science (Paul Wouters, Ismael Ràfols, Alis Oancea, Shina Caroline Lynn Kamerlin, J. Britt Holbrook, Merle Jacob)

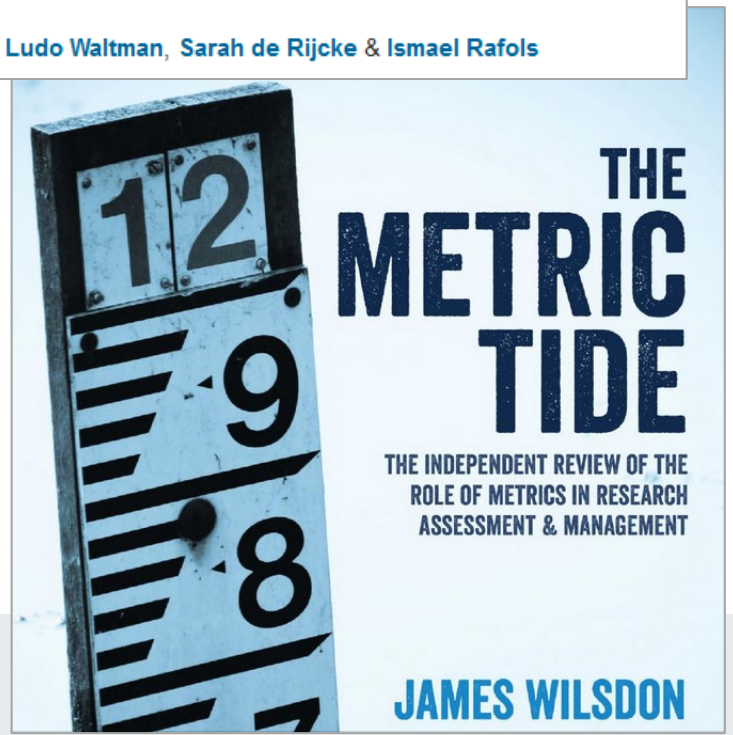
Upcoming EC Expert Group report

Bibliometrics: The Leiden Manifesto for research metrics

Diana Hicks, Paul Wouters, Ludo Waltman, Sarah de Rijcke & Ismael Rafols

Key points:

- Builds on many key reports before it
- Manage and plan for unintended consequences and/or ‘steering’ effect of indicators
- Don’t create incentives for only tokenistic / superficial change in behaviours
- Tailor suite of indicators to field, project, type of entity measuring etc



Indicator use regarding Open Knowledge Practices: 3 levels

1. Scientific system as a whole, including the infrastructures that are required for open science
2. Research performing organization and research funding organization
3. Individual researcher or research group

Four Open Indicator Toolboxes proposed

1. **Open knowledge infrastructures** at national, international and disciplinary levels
2. **Open knowledge capabilities** in research communities (incl support personnel)
3. **Pioneering open knowledge practices** – qualitative, case-study based – to garner support from research communities
4. **Individual-level** for careers – based on principles of responsible metrics e.g. Metric Tide, Leiden Manifesto and DORA declaration.

+ 149 indicators and associated information on tools to measure them, strengths, weaknesses, potential and risks etc

OSPP – building on recommendations

- ***Integrity of research processes*** should be valued, not just the **products**
- Decide first **on *goals,*** not just what can be measured
- Move ***beyond declarations*** to practical implementations & pilots

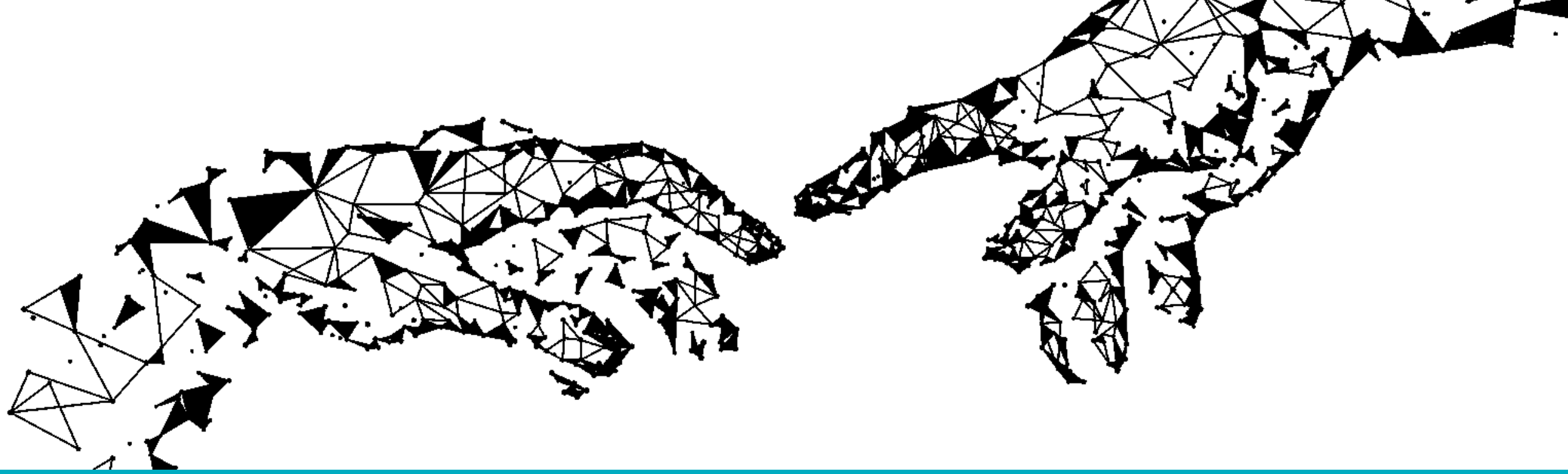
Good practices should:

1. Ensure research is ethical and conducted with integrity
2. Recognise diverse outputs and contributions
3. Recognise diverse communication channels
4. Facilitate access to and discoverability of research findings (such as publications, data, software and methods)
5. Actively engage with the public
6. Actively support open knowledge practices across the organisation

OSPP: Practical Commitments for Implementation

- OSPP creating Registry of pilots using new approaches to assessment at:
  - Stakeholder level e.g. university associations
  - Institutional level
  - National level
  - Domain-specific level
- Ensure open evaluation of pilots and dissemination of results
- Use successes to support uptake and broader adoption by others

GENERAL INFORMATION	
Registry ID:	
Title of the pilot:	
Leading Partner:	
Collaborating partners (optional):	
Implementation level (e.g. institutional, consortium, national, regional, discipline, etc.)	
Start date:	
Planned end date:	
Contact person:	
Contact email:	
Relevant URL of pilot (where possible):	
PILOT DESCRIPTION	
100-word summary description of what the pilot is testing (links to more detailed descriptions on other sites can be included):	



Group discussion

Divide into 3 groups to discuss:

1. What are the main factors hindering a change in the assessment of research in your country to incentivize open knowledge practices?
2. How can you overcome these barriers and who are the key groups/individuals you need to get on board to start a process of change?

30 minutes – until 13.05

Then 5 minutes feedback each to the whole group

Groups

Group 1 - Ignasi

Henriikka	Mustajoki
Patricia	Clarke
Marin	Dacos
Aude	Dieudé
Anette	Bjornsson
Koen	Vermeir
Inge	Van Nieuwerburgh

Group 2 - Laura

Sanja	Halling
Marc	Vanholsbeeck
Kevin Joseph	Ellul
Yanita	Zherkova
Rene	von schomberg
Michele	Garfinkel
Michela	Bertero

Group 3 - Rebecca

Jean-Francois	Lutz
Patrick	Furrer
Jennifer	Kockx
Kenneth	Ruud
Eva Maria	Moar
Manuela	Epure
Sabina	Leonelli

Incentivising a shift to open knowledge practices

- Many of the tools, frameworks and even indicators are already available
- Many exemplars already exist
- We can learn a lot from each other's successes and failures
- We now need pilots – we can all benefit from you reporting them: both before you start and then of the final results (positive or negative)
- We need to all work together and stay connected