

Open and Universal Science
Project (OPUS)

DELIVERABLE 5.1

**OPUS helps reform the
assessment of research towards
a system that incentivise
researchers to practice
#OpenScience**



WP5
POLICY BRIEFS ON OPEN SCIENCE

Deliverable 5.1: Initial Policy Brief

Reviewing the Landscape on Research Assessment and Open Science and Developing
a Framework for Researcher Assessment that Incentivises and Rewards Open Science



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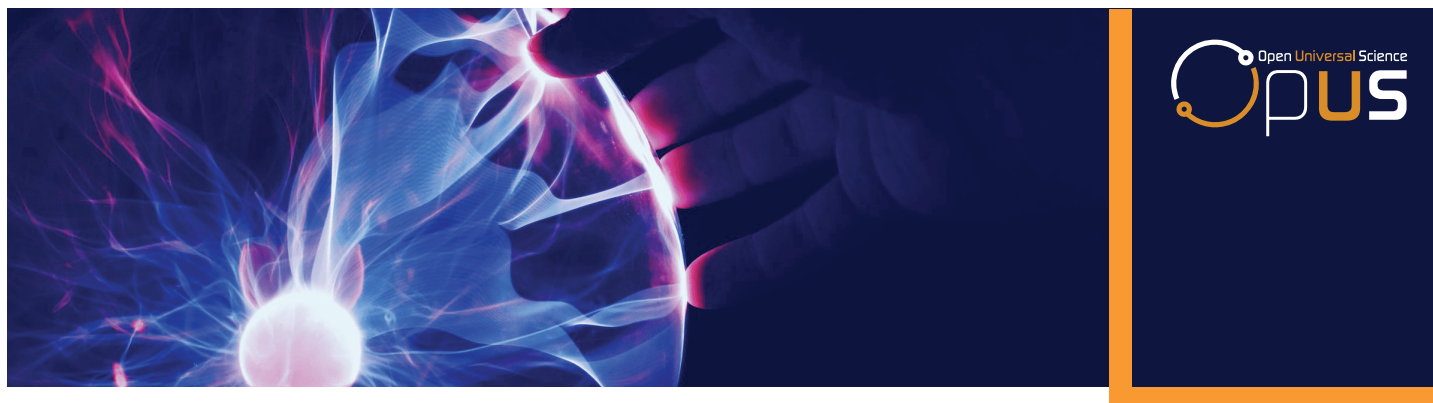
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PROJECT INFORMATION

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The **OPUS** Project

Open and Universal Science (OPUS) is a project funded under the Widening Participation and Spreading Excellence action of the Horizon Europe Framework Programme. The project is developing coordination and support measures to **reform researcher assessment** at research-performing organisations (RPOs) and research-funding organisations (RFOs). The main aim of OPUS is an assessment system that incentivises and rewards researchers to openly collaborate on research and open up access to research outputs (Open Science).

The project is focused on achieving **six main objectives** to steer all project activities:

1. Conduct a comprehensive state-of-the-art on literature and initiatives for Open Science
2. Develop comprehensive interventions to implement Open Science at RPOs and RFOs
3. Develop realistic indicators/metrics to monitor/drive Open Science at RPOs and RFOs
4. Test the interventions and indicators/metrics via action plans in pilots at RPOs and RFOs
5. Use a stakeholder-driven feed-back loop to develop, monitor, refine, and validate actions
6. Synthesise outcomes into policy briefs and a revised model for researcher assessment

The project will produce several **key exploitable results** to share with the research and innovation community:

- State-of-the-Art on Open Science Literature and Initiatives
- Indicators/Metrics and Interventions for Researcher Assessment
- Action Plans and Mutual Learning Exercise to Implement Pilots
- Revised Open Science Career Assessment Matrix (OS-CAM2)

The project employs a three-tiered approach to ensure **stakeholder representation**:

- The project consortium consists of researcher organisations, RPOs, RFOs, industry representatives, and experts in project management, communications, and Open Science
- The project will engage key stakeholders and the broader research and innovation community to iteratively gather input to co-develop and validate key project deliverables
- The project is supported by an Advisory Board to provide expert advice on researcher assessment and Open Science as well as to link to relevant stakeholder organisations

This **policy brief presents the preliminary** results of the OPUS project, coming from two states-of-the-art. The first covered existing academic and policy literature related to researcher assessment and Open Science. The second looked at current initiatives to improve researcher assessment and support Open Science. These results are presented below and feed into policy recommendations on researcher assessment and Open Science.

The OPUS project has conducted a **state-of-the-art on literature** on Open Science. The review zoomed in on incentives and rewards for Open Science, precarity of research careers and Open Science, gender equality and Open Science, industry practices and Open Science, and trust in Open Science. The review examined the literature on these topics and identified indicators/metrics and interventions for researcher assessment and Open Science. A systematic bibliographic analysis was conducted via the Scopus database using key search terms related to the above topics. This produced a huge number of potentially relevant articles, which after deduplication and screening resulted in 129 articles being fully reviewed. This was complemented by a large number of policy papers and non-scientific articles, which were not found in the Scopus search but were identified as relevant by the OPUS consortium.

The literature on **incentives and rewards** confirmed that the current researcher assessment system remains overly focused on bibliometrics, involving peer-reviewed publications and citations in top journals. The research community needs a more comprehensive approach of altmetrics, which includes research/non-research, open/closed, and quantitative/qualitative dimensions. There are, however, many policy developments at national, European, and international levels, with examples of new frameworks (including principles, guidelines, indicators/metrics, and interventions) to reform researcher assessment. Such frameworks may be adopted and adapted to incentivise and reward Open Science at RPOs and RFOs.

The review on the **precarity of research careers** did not find evidence that Open Science has a positive/negative impact on precarity or that precarity has a positive/negative impact on the uptake of Open Science. Supporters of Open Science believe in its potential to improve research careers if the transition is managed correctly. However, there is currently limited evidence and no direct input emerged to feed into the framework of indicators/metrics and interventions for researcher assessment. Further research could take a longitudinal approach to assess the interplay between precarity of research careers and Open Science.

The literature review found interesting interplays between Open Science and **gender equality**, but evidence for Open Science as a predictor of gender equality is not immediately apparent. This is due to interrelated factors (gender, ethnicity, social status, and career stage) and differences in varied cultural and institutional contexts. Research has mostly addressed the relation between gender equality and the decision to publish in open access. Some interventions for RPOs and RFOs were identified to directly/indirectly incentivise and reward positive interactions between gender equality, diversity, inclusion, and Open Science.

For **industry practices**, the review focused on opportunities, benefits, and challenges of Open Science in an industry context. The literature highlighted the need for collective action to encourage Open Science in industry. Drivers of Open Science include the potential for innovation, tools to address market failures and accelerate commercialisation, and the opportunity to access resources. Challenges for Open Science uptake include knowledge, finances/strategy, organisation, collaboration, and risk management for commercialisation. Some interventions were identified to support the free flow of information and collaboration between academia and industry, while protecting commercial interests, including management commitment, employee training, collaboration activities, and funding support.

The review on **trust** showed that the connection between trust in science and Open Science is relatively unexplored. The literature provided some insights into the internal (among researchers) and external (by the public) dimensions of trust in the context of Open Science. While more research is required, it is reasonable to hypothesise a connection between the trust researchers have in institutions and procedures versus public trust in science. Several studies have shown, for instance, that in countries where researchers express a high degree of trust in institutions and procedures, public trust in science is generally also high. Useful indicators/metrics could include trust-building activities especially for Open Science. Useful interventions could support such trust-building activities and measure trust in Open Science. This produced a huge number of potentially relevant articles (over 8000). After screening, a total 129 articles were fully reviewed for the various sub-topics. These were complemented with policy papers and non-scientific articles, which were not found in the Scopus search but were identified as relevant by the OPUS consortium.

Key Frameworks on Research Assessment and Open Science

- [Researcher Development Framework \(RDF\)](#)
- [Evaluation of Research Careers Fully Acknowledging Open Science Practices](#)
- [Next-generation Metrics](#)
- [Recommendations of the OSPP on Next-Generation Metrics](#)
- [Mutual Learning Exercise on Open Science on Altmetrics and Rewards](#)
- [Open Science Monitor](#)
- [Indicator Frameworks for Fostering Open Knowledge Practices in Science and Scholarship](#)
- [A Pathway towards Multidimensional Academic Careers](#)

➤ See Opus **Deliverable D1.2 on 'Initial State-of-the-Art on Open Science Literature'** for the full results of the bibliographic analysis and state-of-the-art of Open Science

The OPUS project has also conducted a **state-of-the-art on initiatives** on Open Science. The landscape review zoomed in on key networks, organisations, schemes, projects, and experts supporting reform of researcher assessment and implementation of Open Science. The review identified and made contact with 34 relevant networks, organisations, and schemes, whereby relevant activities and outputs for OPUS were documented. The review also identified 36 projects funded under Horizon 2020 and Horizon Europe, whereby relevant activities and outputs for OPUS were again documented, and contact was made with ongoing projects. The review lastly identified and contacted 47 experts who were willing to join an online engagement group to provide input related to their specialisations for OPUS.

The following **key stakeholder groups** have been identified which are working on reforming researcher assessment and Open Science and will be engaged in work in the OPUS project:

- [CERN Working Group on Open Science Working Group](#)
- [Coalition for Advancing Research Assessment \(CoARA\)](#)
- [cOAlition S and Task Force on Responsible Research Assessment](#)
- [Council for National Open Science Coordination \(CoNOSC\)](#)
- [EOSC Association Task Force on Research Careers, Recognition, and Credit](#)
- [GraspOS Project](#)
- [EOSC Steering Board of Member States and Associated Countries](#)
- [EUA Working Group on Science 2.0 and Open Science](#)
- [OpenAIRE and National Open Access Desks](#)
- [PathOS Project](#)
- [Science Europe Working Groups on Open Science and Research Culture](#)
- [UNESCO Working Groups on Open Science](#)

The following **practical tools** have been identified which may offer support to organisations in reforming their researcher assessment systems and implementing Open Science:

- | | |
|--|---|
| <ul style="list-style-type: none"> ➤ Agreement on Reforming Research Assessment by CoARA includes clear principles, commitments, and a timeframe for CoARA supporters to reform research assessment | <ul style="list-style-type: none"> ➤ Recognising What We Value by Science Europe offers recommendations and examples detailing how RPOs and RFOs can improve the assessment of research and researchers |
| <ul style="list-style-type: none"> ➤ ASSESS Portfolio Service by OpenAIRE provides services for monitoring trends and impact of Open Science as well as helping organisations with policies on Open Science | <ul style="list-style-type: none"> ➤ Resource Library for Responsible Research Assessment by DORA including a Practical Guide for Research Evaluators provides support materials to reform research assessment |
| <ul style="list-style-type: none"> ➤ Incentivisation Blueprint by Open Research Funders Group (ORFG) provides funders with a stepwise approach to reforming their incentivisation schemes to include Open Science | <ul style="list-style-type: none"> ➤ Reimagining Academic Career Assessment by EUA is a case study report and online repository providing concrete case studies of responsible academic career assessment |
| <ul style="list-style-type: none"> ➤ Leiden Manifesto for Research Metrics by experts in research assessment provides 10 principles to reform research evaluation and combat the current misuse of bibliometrics | <ul style="list-style-type: none"> ➤ UNESCO Open Science Toolkit includes guides, policy briefs, and factsheets for policy makers and organisations to implement the UNESCO Recommendation on Open Science |

The OPUS project will develop a **researcher assessment framework** (RAF) to assess researchers in an academic context and focus on incentivising and rewarding Open Science. The RAF will consist of indicators/metrics to assess researchers and Open Science activities and be accompanied by interventions to support RPOs and RFOs in implementing the RAF. The framework and interventions will be tested in pilots at partner RPOs and RFOs as well as shared with key stakeholders and the research community for co-creation and validation.

The RAF should build on **key policy developments and frameworks** in research assessment and Open Science. The RAF should further be developed in close **collaboration with key stakeholders** in research assessment and Open Science. The RAF should lastly not be prescriptive in nature but consist of a **comprehensive framework of indicators/metrics for researcher assessment** and provide options to RPOs and RFOs which can be adapted and tailored to their own specific organisational interests and needs.

The following **ten principles** should guide the development and implementation of the RAF:

1. Provide a comprehensive framework of indicators/metrics for RPOs and RFOs
2. Provide a framework which applies across countries, disciplines, and organisations
3. Provide a framework which combines both quantitative and qualitative assessment
4. Focus on the assessment of individual researchers and not teams, groups, or units
5. Cover the full spectrum of activities by researchers and not just research activities
6. Offer a generic framework which allows open and non-open activities by researchers
7. Offer a specific framework which focuses on Open Science activities by researchers
8. Distinguish process, output, and outcome indicators to capture the lifecycle of activities
9. Formulate indicators/metrics at a high level of description for universal application
10. Leave selection, refinement, and prioritisation of indicators/metrics to RPOs and RFOs

The RAF should be translated into a **workable tool for practical implementation** by RPOs and RFOs. The translation of the RAF will be different for and across RPOs and RFOs depending on the target groups of researchers under assessment, the intrinsic nature of the assessment, and the selection and prioritisation of indicators/metrics. The translation of the RAF will also differ depending on the chosen medium of implementation for presentation towards researchers (such as via assessment questionnaires or digital interfaces or tools). The RAF should lastly be supported with concrete interventions linked to indicators/metrics and clear guidelines explaining the RAF and the assessment procedure for researchers.

The RAF will offer a **unique framework for researcher assessment** by covering the full spectrum of research and non-research activities conducted by researchers, focusing on Open Science, combining a quantitative and qualitative approach, providing comprehensive indicators/metrics together with interventions to support implementation at RPOs and RFOs, and offering maximum flexibility to RPOs and RFOs in selecting, refining, and prioritising the indicators/metrics and interventions according to their organisational interests and needs.

The following **next steps to develop, test, and finalise the RAF** will be taken in OPUS:

- First version of the RAF will be completed and made openly available in Q4 2023
- Consultation with stakeholders on the first version of the RAF in Q4 2023-Q1 2024
- Piloting of the first version of the RAF at 3 RPOs and 2 RFOs in Q1 2024-Q2 2025
- Final version of the RAF will be completed and made openly available in Q3 2025



Partners

The OPUS project is implemented by an eighteen-organisations consortium led by The Oceanic Platform of the Canary Islands (PLOCAN).

 Plataforma Oceánica de Canarias		 INTERNATIONAL CONSORTIUM OF RESEARCH STAFF ASSOCIATIONS
 NOVA UNIVERSITY LISBON		
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	 realising the potential of researchers	



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IF YOU WOULD LIKE TO KNOW MORE ABOUT
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