

The EUA Open Science Agenda 2025

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Foreword

The digital revolution is rapidly and profoundly changing the way scientific research is conducted. The relationship between science and society is particularly affected, as reflected in the transformation of scientific research practices, aka *Science 2.0*, and in the desire to open the methods, results and applications of scientific discoveries to society as a whole, known as *Open Science*.

EUA started addressing these rapid transformations at an early stage, in order to analyse their impact on the European academic system and to support the transformations at Europe's universities. We therefore followed a [2008](#) position paper on Open Access to research publications by constituting a group of Open Science experts, who were appointed by their National Rectors Conferences in 2015. Driven by this [Expert Group](#), the Association conducts periodic surveys, organises workshops and webinars, publishes positions, policy inputs and reports within the framework of a roadmap published in [2016](#). EUA also builds and develops partnerships with other organisations engaged in Open Science as well as with relevant policy-making bodies, notably the European Commission.

Having started as a push to open up access to scientific publications and software, the scope of Open Science has expanded to include opening access to research data, necessary changes in the way research and researchers are assessed, changes in the law, the inclusion of civil society, etc. Open Science embodies some of the main values of scientific research, notably: freedom of thought and research, individual and institutional autonomy, integrity, ethics, creativity, cooperation, the drive to surpass the current state of the art, the importance of debating contradictory ideas and of refutation (in the sense of Karl Popper's *Falsifikation*), and responsibility in conducting research.

However, the long road to Open Science is paved with obstacles: economic, legislative and regulatory, organisational, technical, patrimonial, behavioural. Moreover, like any major ambition, openness can also lead to misuse. This includes increasing pressure to publish (the famous "publish or perish"), the demand for immediacy when research requires a steady ripening of ideas, the erroneous interpretation of research results that have not been fully validated (e.g. through the misuse of pre-prints), the dissemination of fake scientific news, the usurpation of ideas, etc. The COVID-19 pandemic has been a stark revelation of the various risks associated with the misuse of Open Science.

EUA has therefore established its Open Science strategy for 2025 with these opportunities and threats in mind. It has three priority areas: Open Access to scholarly outputs, FAIR research data, and institutional approaches to research assessment. The activities that will be carried out for and with European universities will always be in line with the desire to contribute to the strengthening of Open Science, to encourage the development of knowledge with a humanist ambition, and to promote the values of science, while taking potential pitfalls in these processes into account.

Prof. Jean-Pierre Finance

Chair EUA Expert Group on Science 2.0/Open Science

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Vision

By 2025, Europe's universities will be part of a scholarly ecosystem characterised by:



Academic ownership of scholarly communication and publishing



A just scholarly publishing ecosystem (i.e. transparent, diverse, economically affordable and sustainable, technically interoperable, and steered by the research community)



FAIR research data as the norm in producing and sharing scientific knowledge



New professional profiles for data-intensive careers



An active engagement in EOSC



A responsible, transparent, and sustainable research assessment system



Open Science as an integral part of research assessment practices



Assessment approaches balancing qualitative and quantitative metrics

Introduction

This document presents the EUA Open Science Agenda 2025. It defines the association's priorities in this field, and describes the current context, challenges, developments envisaged for 2025, and the actions EUA will take to drive this Agenda forward. For each priority area, the proposed actions are structured around the four priorities of the [EUA Strategic Plan](#): (1) advocacy, (2) horizon scanning, (3) European solidarity and (4) enabling enhanced performance. They aim to guide the actions of our membership, leadership and Secretariat.

This document understands Open Science as “*an inclusive construct that combines various movements and practices aiming to make multilingual scientific knowledge openly available, accessible and reusable for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community. It comprises all scientific disciplines and aspects of scholarly practices, including basic and applied sciences, natural and social sciences and the humanities, and it builds on the following key pillars: open scientific knowledge, open science infrastructures, science communication, open engagement of societal actors and open dialogue with other knowledge systems*” ([UNESCO Recommendation on Open Science](#), 2021, p.7).

Open Science goes hand in hand with good scientific practices for all aspects of research, as it builds on and contributes to the quality of research and of scholarly outputs. The concept of open refers to the absence of barriers to accessing information and scholarly outputs (e.g. legal, financial). EUA sees Open Science as a means to an end: a scholarly system which ensures “that knowledge and understanding created by researchers [are] treated as public goods, available for the benefit of members of society as a whole, to enhance the wellbeing of human beings across the planet” ([Future of scholarly publishing and scholarly communication](#), 2019, p. 25). Open Science is instrumental in addressing global challenges and enhancing wellbeing. The recent COVID-19 pandemic has clearly demonstrated the need for and benefits of opening knowledge up, and of openly sharing research data, research results, and the whole research process. Open Science supports social responses to the political, social and environmental challenges our societies face.

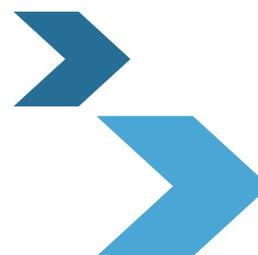
Open Science also enhances higher education performance (cf. [EUA Strategic Plan, 2020](#)), because it promotes transparency, collaboration and faster research and scientific progress. Open Science also contributes to European solidarity (cf. [EUA Strategic Plan, 2020](#)). The aim is to create better opportunities and a more equal playing field between European institutions and countries with less Open Science experience and those at a more advanced stage. All of the players involved benefit from steps conducive to mainstreaming Open Science, irrespective of their various starting points. This should facilitate “distributed excellence”, in which different institutions, regions and member states are capable of participating competitively in global research activity, at the very least in selected fields (cf. [EUA Strategic Plan, 2020](#)).

EUA has supported universities in the transition to Open Science for more than a decade. Particularly through its [Expert Group on Science 2.0/Open Science](#)¹, the Association has worked closely with members to monitor the activities and plans that universities have been developing since 2016 and to identify related challenges and opportunities. The Expert Group on Science 2.0/Open Science issued the [first EUA Roadmap on Open Access to research publications](#) in 2016. The scholarly communication system has since undergone major changes, and the rise of data-driven science and the need to reform research and academic assessment have brought new challenges.

As shown in yearly EUA Open Science Surveys (cf. [2020-2021](#); [2017-2018](#)), universities have made substantial progress in developing and implementing Open Science policies and practices. Researchers are now more aware of the importance of Open Access to research publications, FAIR data, and of opening up the research process. National and EU policymakers and research funders have released Open Science policies, including on Open Access and research data. Discussions at European and national levels on the need to reform current academic assessment systems to better reflect universities’ full missions and the entire range of tasks researchers perform, as well as to consider contributions to Open Science, have gained momentum.

In defining its 2025 Open Science Agenda, EUA has drawn on members’ experience of the transition to Open Science (cf. EUA Open Science Surveys) and national and European developments. Striving to be as inclusive as possible, and given its wide range of members, EUA has selected three major priority areas for its work on Open Science in future: i) Open Access to scholarly outputs in a just scholarly publishing ecosystem, ii) FAIR research data, and iii) research assessment. This Agenda also includes a brief section on horizon scanning, as new areas of Open Science, such as citizen science, are starting to gain momentum (cf. [EUA 2020-2021 Open Science Survey](#)). While these priority areas are presented separately here, they are naturally interrelated. Open Access to scholarly outputs and FAIR research data can only become mainstream and an intrinsic part of the research process once they receive appropriate recognition and incentives through reformed academic assessment exercises. Conversely, a more responsible, transparent and sustainable assessment system can help advance Open Science practices.

In defining its 2025 Open Science Agenda, EUA aims to: continue to help its members transition to Open Science, contribute to the development of national, European and institutional policies conducive to the mainstreaming of Open Science, and encourage universities to play a more proactive role in the regulatory and financial frameworks shaping this process.



¹ EUA’s Expert Group focuses on both Open Science and Science 2.0. Whereas the former is a broader construct, as defined by [UNESCO](#), the latter refers more specifically to the changes in information sharing and collaboration made possible by Web 2.0 technologies.

Key priorities

Priority area #1 – Universal and perpetual Open Access to scholarly outputs, in a just scholarly publishing ecosystem

Definition

Open Access (OA) is the practice of granting universal and perpetual open access to scholarly outputs (such as journal articles, books, datasets, protocols, algorithms and software source codes, etc.), to both producers and users, through a system in which there are no barriers to participation (particularly those based on the ability to pay, institutional privilege, language or geography). Universal and perpetual OA includes reuse through open licensing. This is part of a just scholarly publishing ecosystem that is transparent, diverse, economically affordable and sustainable, technically interoperable, and steered by the research community and its institutions through coordinated policies.²

State of play

The scholarly publishing world has evolved rapidly over the last few years. After a long period of advocacy and hard work by multiple stakeholders, the transition to OA is finally gaining momentum. Multiple approaches to OA are being tested and adopted across Europe and beyond. At university level, significant progress has been made in developing and implementing institutional OA policies and practices (cf. the EUA Open Science Surveys, [2020-2021](#); [2017-2018](#)). Researchers are now more aware of the importance of OA and increasingly make their scholarly outputs openly available, through repositories or OA publishing. Many national and EU research funders now also require the results of research they fund to be published in an OA format.

The scholarly publishing system has also become much more complex and dynamic (cf. [Read and Publish contracts in the context of a dynamic scholarly publishing system](#), 2020). The subscription model coexists alongside and is increasingly

² This definition is inspired by the work of Science Europe (<https://scienceeurope.org/our-priorities/open-access/>) and by the International Science Council. 2021. *Opening the record of science: making scholarly publishing work for science in the digital era*. Paris, France. International Science Council. <http://doi.org/10.24948/2021.01>



being replaced by paid-for-publishing contracts (transformative agreements). Contracts including partial or full OA components, the emergence of new OA journals, the increasing importance of preprints and new publishing initiatives (cf. [Plan S Rights Retention Strategy](#)) have all come to light. Community-driven OA initiatives are also on the rise, which is leading to the creation of new, not-for-profit OA journals and publishing platforms.

Despite all the progress made to date, OA is yet to become ubiquitous. A recent European Commission review shows that, despite a steady rise in OA publications across the EU27, only 45% were available in OA in 2019 ([Perspectives on the Future of Open Science](#), 2021). The [OA2020 initiative](#) further estimates that roughly 85% of new research articles published globally are still produced in journals that are behind paywalls.

In the transition to universal and perpetual OA, the complexity of the scholarly publication system (cf. [The new university Open Access checklist](#), 2021) and the costs involved in making scholarly outputs openly available for universities and other stakeholders is another key consideration. Universities are still struggling with the high cost of increasingly expensive publishers contracts, articles processing charges (APCs), and the costs of OA infrastructure and services (cf. [EUA Big Deals Survey Report: An Updated Mapping of Major Scholarly Publishing Contracts in Europe](#), 2019; [A closer look at Open Access to research publications in European universities: Follow-up report to the 2020-2021 EUA Open Science Survey](#), 2022), in a context of restricted financial budgets. A just scholarly system, with Open Science at its core needs to be economically sustainable in the long-term.

Developments envisaged by 2025

In 2025, universal and perpetual Open Access will be granted to an increasing proportion of scholarly outputs, with a view to achieving 100% OA in the long run. There will be a wider spectrum of ways to disseminate diversified scholarly outputs, as well as multifaceted developments in the scholarly publishing system, reflected by an increased importance of institutional initiatives, infrastructures and services. Finally, even more diversified negotiation models for contractual agreements with publishers will emerge.

Scholarly documentation will evolve towards increased diversity and interoperability, with preprints, blog posts and other means of disseminating scholarly outputs complementing or even replacing traditional journals or books. Scholarly outputs (including but not limited to research methods, physical and digital research materials, software code, etc) will indeed become more interlinked at the different stages of the research life cycle, contributing to a fluid evolution of diverse forms of documentation. Research data will continue to gain prominence, with research publications becoming a supplement to the data, at least in STEM fields ([Opening the record of science: making scholarly publishing work for science in the digital era](#), 2021).

Scholarly publishing will have an even more diverse and complex future, with regained academic ownership of the ecosystem. Collaborative, community-driven and institutionally supported OA publishing platforms, archives and repositories will thrive and become more economically sustainable. Sustainable alternatives to transformative agreements with commercial publishers will be developed and more contracts with pure OA publishers will be signed. In particular, the [next generation of agreements](#) will secure the implementation of Open Access and ensure transparent pricing, while also being more cost-effective and entailing fewer transaction costs than the current, single-paper charging system.

Universities will implement accurate and high-quality [OA monitoring](#), to assess progress in achieving OA. This monitoring, coupled with the assessment of the costs incurred by publishing in OA journals, will inform institutional and national publishing strategies and will facilitate decisions supporting new and improved fully Open Access publishing venues and platforms.

Challenges

Avoiding the dominance of a single Open Access route

In the transition to OA in a context of constrained budgets, APCs and new types of commercial publishing contracts (e.g. transformative agreements) are still highly onerous. The issue of cost division within consortia signing paying-for-publishing contracts, especially for research-intensive institutions, is also challenging. Disproportionate, soaring costs for research-intensive institutions are not sustainable. And the high profit margins enjoyed by commercial publishers indicate that institutions are spending much more on contracts than the actual costs incurred in such service provision (cf. [Big Deals Survey Report](#), 2019; [Decrypting the Big Deals Landscape](#), 2019; [Opening the record of science: making scholarly publishing work for science in the digital era](#), 2021). Bibliodiversity is key to allowing a variety of OA publishing modes, and to a more economically sustainable ecosystem.

Reclaiming academic ownership of the scholarly publishing system

Universities, research performing organisations, researchers, research funders and national libraries all have a crucial role to play in re-gaining academic sovereignty over the publishing process. Institutions and researchers have relinquished their rights to commercial publishers, and these publishers have made copyright their mainstay. Authors and institutions need to retain their intellectual property rights (e.g. [Plan S Rights Retention Strategy](#)) and critically consider which stakeholders should own and run publishing infrastructure in order to create systemic change.

Ensuring high-quality open peer-review

The quality assurance provided by peer-review remains a precondition for OA scholarly publishing and an essential element that must be maintained (cf. [Recommendations from the EUA Working Group on Open Access](#), 2008). It is crucial that OA scholarly outputs continue to follow quality peer-review processes, in order to ensure confidence in and the reliability of the scholarly publishing system. This is all the more important, given the rise of predatory OA journals. Yet, the volume of scholarly outputs submitted to peer review far exceeds the capacity of reviewers. This mismatch, and the issue of high-quality open peer-review more generally, need to be approached both from the scholarly publishing system and the scholarly award and incentive angles.

Changing the scholarly reward and incentive system

The current academic reward system, which is heavily based on the Journal Impact Factor, must be reformulated, in order to allow OA to become ubiquitous and to ensure the transformation of the current scholarly publishing system. More responsible, transparent and sustainable assessment practices must be developed for research activities and career development (cf. Priority area 3 - Institutional approaches to research assessment).

Equity, diversity and inclusion in progressing towards OA

In Europe and beyond, countries and institutions are at different stages of the transition to OA. While some countries have made substantial progress in OA policies and practices, others have only more recently initiated institutional or national activities (see [OpenAIRE's overview](#)). It is crucial that institutions and countries receive the support they need to make more OA progress, irrespective of their current situation. Best practice exchanges, political and institutional engagement, the active involvement of all relevant stakeholders and adequate resource provision, are all crucial to ensuring all countries and institutions can make further OA progress. It is important to ensure OA does not only become the norm in the most affluent countries and institutions, but that everyone has the necessary resources to transition to OA.

What EUA will do

Effective advocacy

- Raise awareness about the importance of OA and support universities in their efforts to increase the proportion of scholarly outputs available through OA.
- Reclaim academic ownership of scholarly communication and publishing.
- Advocate for a just scholarly publishing ecosystem that is transparent, diverse, economically affordable and sustainable, technically interoperable, and steered by the research community.
- Support the Rights Retention Strategy proposed by cOAlition S.

Horizon scanning

- Connect OA to research publications with other OS dimensions.
- Review new approaches to cost distribution in the pay-to-publish model.
- Identify and review innovative publishing models and practices.
- Identify challenges and opportunities for institutional publishing service providers.

European solidarity

- Develop policy recommendations to ensure equity, diversity and inclusion in the transition to OA.
- Support all institutions in their efforts to continuously build OA capacity, irrespective of their current situation.

Enabling enhanced performance

- Continue to offer a platform for Europe's universities and their negotiators to share information about challenging publisher negotiations.
- Empower university leaders and negotiating consortia to explore different OA routes and develop strong negotiation strategies.
- Build OA capacity and support community-driven OA infrastructure and content services, particularly institutional publishing service providers.

Priority area #2 - Findable, Accessible, Interoperable and Reusable research data

Definition

The FAIR Data Principles offer a set of guidelines to ensure research outputs are [Findable, Accessible, Interoperable and Reusable](#). They apply to data, protocols, algorithms and software that underlie publications or have future value and a potential for reuse. Here, “data” is used in its broader sense, meaning a diverse set of information, knowledge, and results that are generated by, and at the same time support, research projects in different scientific fields.

FAIR data is now part of the broader Open Science discussion, as it ensures that scientific results are available for sharing and reuse. However, FAIR does not mean “Open”; these two concepts are complementary; publicly funded research data needs to be as open as possible and as closed as necessary. Open or not, all relevant research data should adhere to the FAIR principles, because applying them ensures reproducibility and enhances the visibility of research outcomes.

State of play

The FAIR data principles are still a relatively new concept and their implementation, through good Research Data Management (RDM), is yet to become standard practice at universities and other Research Performing Organisations (RPOs). There are currently four main implementation challenges in this field. These include: i) the need for improved integration of FAIR data in institutional policies and strategies, ii) the shortage of skills and training, iii) the lack of infrastructure, and iv) the absence of a structured system of incentives and rewards.

New European and national policy initiatives promote more widespread compliance with the FAIR data principles. At the European level, Horizon Europe requires funded projects to develop Data Management Plans (DMPs) and to make their research data FAIR. National funding organisations have also adopted similar requirements promoting new policies or frameworks driving the transition to Open Science.

[A recent EUA survey](#) reveals that universities in Europe are increasingly integrating RDM and FAIR data into their strategies and institutional policies. However, a lack of data-related skills and training is hindering the actual implementation of consistent research data management practices and the emergence of a FAIR culture at institutional level.

Developments envisaged by 2025

In 2025, the FAIR principles will increasingly guide the sharing of scientific knowledge at Europe’s higher education institutions. Universities will further develop institutional policies that recognise the strategic importance of FAIR data in consolidating the transition towards Open Science and will identify the necessary steps for their practical implementation. Their efforts will be supported by the development of comprehensive national and European policies, providing universities with the frameworks, resources and incentives to perform Open Science.

At institutional level, the uptake of RDM and FAIR data skills will be supported to increasingly become an integral part of university programmes at all levels and in all disciplines. This will foster students’, researchers’ and the staff’s ability to produce FAIR data by design and pave the way for the development of the next generation of Open Science-trained and data-skilled professionals ([Digital Skills for FAIR and Open Science: Report from the EOSC Executive Board Skills and Training Working Group](#), 2021).

Mainstreaming FAIR research data skills and practices will create the boundary conditions for universities to take full advantage of the benefits offered by engagement in the European Open Science Cloud (EOSC).

Challenges

Gap in the implementation of RDM and FAIR data at institutional level

While universities widely recognise the strategic importance of data sharing and FAIR data, [these practices are far from being sufficiently implemented at institutional level](#). Universities across Europe are including RDM and FAIR data provisions in their Open Science policies. However, these fall short of providing a clear framework for students, researchers and research support staff, and encourage rather than mandate research output compliance with the FAIR principles.

Lack of skills and training at bachelor's degree, master's degree and doctoral levels

Skills and training are crucial for the implementation of RDM and FAIR data at institutional level, as they provide students, researchers and research support staff with the instruments they need to perform these practices throughout their research. Attention should also be paid to upskilling and reskilling current research staff, notably through digital competence centres, as they will increasingly be asked to comply with new European and national FAIR data requirements. Data-related skills are now only partially available at universities, and more effort needs to be invested in training students and doctoral candidates to foster the next generation of data-skilled professionals. Yet skills and training are only one side of the coin and need to be complemented with the reinforcement of existing and the development of new institutional FAIR data management and sharing infrastructure.

Lack of recognised profiles for new data-related careers

To support the emergence of a FAIR culture at universities, a comprehensive skills and education strategy needs to be paired with a shared definition of the new data professional job profiles ([Turning FAIR into Reality: Final Report and Action Plan from the European Commission Expert Group on FAIR Data](#), 2018). New career development paths will also have to consider data professionals' diverse academic and professional backgrounds as well as how to improve their integration into each institution's various organisational units and into the research infrastructures that provide universities with services and support. Professionalising data science and data stewardship requires the active participation of public, private and institutional stakeholders. In particular, universities and library leaders need to work together to implement new career development plans including new FAIR data science roles, which consider a diverse set of needs among different disciplines and scientific fields.

Engaging with the European Open Science Cloud (EOSC)

Universities have a key role to play in achieving the EOSC objectives and ambitions, by offering to federate their research data infrastructures to the new European environment and by giving researchers the skills to ensure they are ready to fully exploit its services. However, [several challenges currently hinder their participation](#) in the development and definition of this new European initiative, including: limited institutional capacity, low awareness among researchers of EOSC and its benefits, and a lack of the infrastructure needed to connect to the EOSC ecosystem.

What EUA will do

Effective advocacy

- Foster university uptake of FAIR data practices and engagement with EOSC.
- Raise awareness about the need for a common framework for new FAIR data handling and management careers.

Horizon scanning

- Map the landscape of institutional policies and practices related to FAIR data, highlighting measures to support skills and training at institutional level.
- Provide information about new EU initiatives and opportunities.
- Investigate the issue of the costs associated with the FAIRification of research data.

European solidarity

- Promote the exchange of good practices in FAIR research data management between universities.

Enabling enhanced performance

- Foster dialogue between universities and with key stakeholders on FAIR data-related needs and challenges.
- Gather information and share resources to foster the integration of RDM and FAIR data skills in university programmes at all levels.

Priority area #3 - Institutional approaches to research assessment

Definition

Research assessment is the combination of qualitative and quantitative practices used to evaluate the quality and impact of research activities. Institutional assessment approaches are typically used to make decisions regarding hiring, career progression and funding allocation. As such, research assessment practices are also part of academic assessment, which is a more holistic approach that promotes parity of esteem between all academic activities in service to society, including research, innovation and teaching.

State of play

The discussion on improving institutional approaches to research assessment has come to take centre stage over the past decade as part of the move to promote Open Science and improve academic culture ([Reimagining Academic Career Assessment: Stories of innovation and change](#), 2021). The quality and impact of research activities and careers are to a great extent evaluated using proxy indicators, rather than on the merits of the research itself. In 2019, an [EUA survey](#) showed that quantitative publication metrics are the main evaluation practice used by universities. The widespread use of the journal-level Journal Impact Factor (by 75% of institutions) as a proxy indicator in individual-level evaluations of research activities and careers is of particular concern.

Implementing more responsible research assessment practices is a real challenge (cf. [Towards a reform of the research assessment system: scoping report](#), 2021). Universities and national stakeholder consortia across Europe [developed and implemented more responsible assessment practices](#), but progress has generally been slow and incremental. Improving research assessment is a shared responsibility and requires a systematic approach uniting the main actors. While universities consider themselves largely autonomous in their assessment approaches, EUA surveys have shown that they are also keenly aware of the external influences shaping and at times limiting their options. These constraints can include policymakers rules and regulations, the financial frameworks set by research funders and the competitive, international research environment (e.g. rankings).

Developments envisaged by 2025

In 2025, a critical mass of universities across Europe will be engaged in discussions about or the development and implementation of more responsible, transparent and sustainable evaluation practices for research activities and careers, including incentives and rewards for Open Science throughout the research process. They will share the objective of working towards assessment approaches that appropriately balance qualitative peer-review with quantitative metrics, which consider the context and purpose of the evaluation, based on broad definitions of quality and impact, and aligned with institutional missions and values (cf. [Universities without walls - A vision for 2030](#), 2021).

Challenges

Reviewing assessment practices is a complex and gradual process. [EUA results](#) have shown that universities see the complexity of research assessment reform as the main barrier to changing their evaluation approach. The main challenges include:

The need for balanced assessment approaches

Improved balance between qualitative peer-review and quantitative metrics is needed to develop and implement assessment approaches, focussing on evaluating research activities and careers on their own merits with a view to improving academic culture. The technical side of this challenge is important to devise new and responsible practices, but more profound discussions about the goals and objectives of academia should not be overlooked. Both sides need to develop practices that incentivise and reward Open Access to scholarly outputs and promote Open Science throughout the entire research process.



Disparities in the capacity to improve institutional approaches to research assessment

Universities across Europe do not have equity of opportunity or equal capacity to review and amend their assessment practices. Long-term trends of disparate levels of [public funding](#) and [autonomy](#) work against such a level playing field, creating different starting points and affecting on the potential paths forward. The review process will be markedly different at autonomous institutions and at those operating in more centralised systems, with the former facing potential first-mover disadvantages and the latter held back by their limited scope for action.



What EUA will do

Effective advocacy

- Advocate for responsible, transparent and sustainable assessment practices, including incentives and rewards for Open Science throughout the research process.

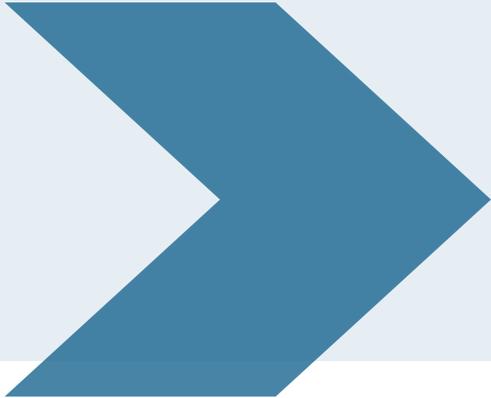
Horizon scanning

- Establish EUA as an important knowledge hub about university initiatives to improve the evaluation of research activities and careers.
- Explore Open Science incentives and rewards, and their impact on and benefits for academic culture, equality, diversity and inclusion.

European solidarity

- Improve universities' capacity, autonomy and equal opportunities to develop and implement more responsible assessment approaches.
- Improve cross-border good research assessment practices exchanges.

Enabling enhanced performance

- Support initiatives that emerge from the academic community.
 - Foster support from academic leadership.
 - Raise awareness, build capacity and create support for university initiatives among the main actors (including [early-career] researchers, other RPOs, research funders and policymakers).
- 

Horizon scanning

New elements continue to emerge and drive the transition to Open Science. While this Agenda builds on today's key priorities, other aspects of an open research system are already being discussed by universities and their partners. EUA looks for these elements and works to include them in a comprehensive approach to Open Science in service of its members.

- **Efforts are being made to open the whole research process and bring it closer to society.** Our definition of Open Science extends the transition beyond Open Access to scholarly outputs and aims to open the whole research process. For example, [universities are increasingly exploring the potential of citizen science and providing institutional support for researchers engaging in this practice](#). Recognising the involvement of citizens in the scientific process, in producing better science, and as an integral part of Open Science, should be supported by new policies at the institutional and national levels. EUA will consider opportunities to help its members engage in activities fostering participatory science and openly involving different societal actors, [as recommended by UNESCO](#).
- **Open Access to scholarly outputs other than publications and data is raising new questions and building bridges to like-minded communities.** For example, researchers are increasingly contributing to the open-source community, making software source code publicly available for reuse, replication and improvement. However, such efforts are often not reflected in institutional policies and discussions around Open Science, as they remain focused on more “traditional” areas like Open Access to publications and (FAIR) research data. Taking a broader definition of Open Science into consideration can also foster dialogue with the private sector. While they make major contributions to open-source development, many businesses still see Open and/or FAIR data as a secondary priority. EUA will explore opportunities to build bridges between the academic and private sectors to provide opportunities for mutual learning and capacity building.
- **The constant evolution of digital technologies opens up promising perspectives for Open Science but also comes with new challenges.** On the one hand, not-for-profit Open Science infrastructures (cf. [UNESCO definition](#)) are on the rise. Their long-term financial sustainability requires strategic and collective investments from governments, funding agencies, as well as from institutions.

On the other hand, major private publishing companies increasingly exploit the data drawn from their publishing and indexing activities. In doing so, they extend their business models to become digital information providers, with data analytics about the research process itself as new products/services. This information is key for researchers, as well as for universities and research funding organisations, notably for academic assessment. This led the [International Science Council](#) (ISC) to call on universities and research funders to consider whether this evolution poses a threat to long-term public interests, “and – if necessary – to act collectively to protect them” (p. 66). The ISC further advocates for the governance of digital infrastructures to be in the hands of the scientific community and its institutions. Similarly, [UNESCO](#) recommends that “open science services should be viewed as essential research infrastructures, governed and owned by the community and funded collectively by governments, funders and institutions reflecting the diverse interests and needs of the research community and society” (p. 23). EUA will explore how universities can exploit the full potential of digital technologies, together with other actors, for an open, not-for-profit scholarly communication ecosystem. EUA will take stock of these initiatives, consider possible risks and explore shared governing principles for digital Open Science infrastructures.

- **The mainstreaming of Open Science is a global endeavour that requires the active participation of stakeholders around the globe.** Policy frameworks trying to regulate and enforce Open Science are now emerging beyond Europe. International collaboration is key to the sustainable implementation of Open Science. This is recognised in the [UNESCO Recommendation on Open Science](#), which not only defines Open Science as a global public good, but also includes the promotion of international and multi-stakeholder cooperation among its key action areas. EUA will continue to foster cooperation with global partners such as [DORA](#), the [Research Data Alliance \(RDA\)](#), [Open Access 2020 \(OA2020\)](#) and the [ESAC Initiative](#); and to represent the voice of Europe's universities in these international fora.

Taking this Agenda forward

EUA will focus its efforts on the priority objectives below. In close collaboration with the Expert Group on Science 2.0/Open Science, the Secretariat will establish and regularly review an action plan to progress towards these objectives for the duration of this Agenda until 2025. A roadmap will complement this Agenda.

Advocate evidence-based policy recommendations

EUA will seek to influence public policy and financing discussions relevant to Open Science at EU, national and regional level. Taking the specificities of different countries, academic systems and disciplinary practices into account, EUA will work to improve its members' institutional capacities and equal opportunities to further develop and implement Open Science policies and activities.

Develop good practice recommendations

EUA will support good practices that emerge bottom-up from the academic community and are responsive to complexities stemming from differences between national systems, institutions, disciplinary areas and career stages. The Association will also foster top-down support from academic leadership, which will be essential for the mainstreaming of Open Science in university' policies and activities.

Foster dialogue between universities and with other actors

EUA will regularly engage in dialogue and cooperation with the main Open Science stakeholders, including: researchers, university leadership and management, RPOs, university and research libraries, research funders and policymakers. In conjunction with other partners, EUA will seek to raise awareness, build capacity and create support for mainstreaming Open Science approaches and activities.

Gather and share information

EUA will establish itself as an important knowledge hub of university initiatives to implement Open Science approaches and activities. This knowledge base will include information about organisational, legal, contextual and cultural differences across different national systems and disciplinary areas. This will allow EUA to contextualise different national and university initiatives and to improve good practices exchanges. Special care will be taken to align with, not duplicate, similar efforts by partner organisations.



The European University Association (EUA) is the representative organisation of universities and national rectors' conferences in 48 European countries. EUA plays a crucial role in the Bologna Process and in influencing EU policies on higher education, research and innovation. Thanks to its interaction with a range of other European and international organisations, EUA ensures that the voice of European universities is heard wherever decisions are being taken that will impact their activities.

The Association provides unique expertise in higher education and research as well as a forum for exchange of ideas and good practice among universities. The results of EUA's work are made available to members and stakeholders through conferences, seminars, websites and publications.

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