SCIENCE EUROPE

Conference on Open Science

18 and 19 October 2022

Event Report

SCIENCE EUROPE
Shaping the future of research

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Science Europe Conference Report on Open Science

Author: Bregt Saenen (Science Europe)

Lead editor: Lidia Borrell-Damián (Science Europe)
Co-editor: Iwan Groeneveld (Science Europe)

For further information please contact the Science Europe Office: office@scienceeurope.org

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Introduction

The 'Science Europe Conference on Open Science' was held on 18 and 19 October 2022 in Brussels (Belgium) and online. Close to 600 participants joined 36 expert speakers for a two-day discussion on open science and its place in the European and global research landscape.

The objective of this conference was twofold: firstly, the aim was to bring clarity to the discussions on openness that are currently taking place and how they are shaping the research landscape. Keynote presentations and panel discussions were designed to help participants navigate the great variety of initiatives that are part of the transition to open science, relating them back to the overarching goal of achieving a more open and collaborative research culture.

Secondly, the aim of this event was to present a comprehensive overview of the transition to open science, which consists of many and diverse discussions on open research practices. Breakout sessions were organised for participants to engage with each other and discuss the policy initiatives, research assessment reforms, and financial support measures that connect and drive forward these discussions.

This report looks back on the conference and highlights the main ideas and insights that emerged during the two-day discussion between expert speakers and participants. Open science is understood as a movement to open the processes of scientific knowledge creation, evaluation, and communication to improve research collaboration and better link research to societal needs. Nowadays, the movement is driven by the convergence of more and increasingly ambitious actors from across the research sector, working together with policy makers at regional, national, EU, and global level. Major challenges and an uneven implementation of initiatives make this an unfinished transition, but the forward momentum is clear. Meanwhile, questions about the inclusiveness and equitability of this transition become increasingly pressing for the community to address. This is in and of itself a indication of the changes taking place within the research landscape and their impact on institutions, communities, and individual scholars.

As such, this report reflects a dynamic point in time for the transition to open science, which has come a long way and shows no signs of slowing down. The growing ambition of this community was apparent throughout the conference. The insights found in this report will directly influence future initiatives by Science Europe and its members.

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The State of Open Science

Why Transition to Open Science?

The conference started with an introduction to the role of open science in shaping the future of research in Europe and worldwide. Keynote speakers **Marc Schiltz** (President of Science Europe and Chief Executive Officer of the National Research Fund of Luxembourg) and **Ezra Clark** (Director ad interim of the Division of Science Policy and Basic Science, Natural Science Sector at UNESCO) laid out before the participants the reasons to push for open research practices, the barriers to this transition, and the most recent developments in this field.

Reflecting on the way forward for research in Europe and globally has become increasingly urgent in the wake of the COVID-19 pandemic and other great challenges captured in the Sustainable Development Goals. Schiltz and Clark pointed to the role of open research practices in accelerating the development of safe and effective vaccines. Beyond the societal benefits, Schiltz also pointed to ethical, economic, and last but not least, scientific reasons to go for open. In his words, "the great value of scientific knowledge is that it is tested knowledge upon which new knowledge can build and expand." Open science reinforces this dynamic.

Schiltz and Clark highlighted that the aim of the transition to open science is to bring about a cultural change that promotes international and interdisciplinary collaboration in research. Schiltz explicitly related this to the fiduciary duty of public research funding organisations to shape the future of research for the good of the research community and the wider public. While goals such as improving the scholarly publishing system or reforming research assessment are important elements within this transition, they are the ultimately the means to achieve a more open and collaborative research system.

This cultural change is reflected in the ['UNESCO Recommendation on Open Science'](), which defines open science as a comprehensive ambition "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."

In his keynote address, Schiltz mapped out the challenges confronting the community working in pursuit of open science. These range from discussions on the future of scholarly publishing and ownership of scholarly outputs, to open and

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FAIR research data, and reforming research assessment to align with our values in science. Clark highlighted the importance of tackling these and other challenges through a global dialogue and a set of actions, for which the UNESCO Recommendation provides an international framework for all world regions to engage with each other.

Driving Forces and Core Dynamics of the Transition to Open Science

The conference next discussed the driving forces behind the transition to open science, including policy initiatives, research assessment reform, financial support, and champions at all levels. A panel discussion moderated by **Maria Cruz** (Chair of the Science Europe Working Group on Open Science and Senior Policy Officer at the Dutch Research Council) reflected on whether these forces are aligned, focussed, and effective in making open research practices the new normal. Bringing together views from early-stage researchers, universities, policy makers, and research funding and performing organisations, their perspectives were voiced by **Noémie Aubert Bonn** (Postdoctoral Researcher at the University of Hasselt in Belgium and the Amsterdam University Medical Center in the Netherlands), **Stephane Berghmans** (Director of Research and Innovation at the European University Association), **Marin Dacos** (National Open Science Co-ordinator at the French Ministry of Higher Education, Research, and Innovation), and **Johan Rooryck** (Executive Director of cOAlition S and Editor-in-chief of 'Glossa: a journal of general linguistics').

The panel discussed the achievements of the past two decades in which the transition to open science has come a long way. Dacos talked of the mature and converging community that has developed in this field. Today's policy agenda, roadmaps, financial support, champions at all levels, and so on, have been built up steadily over the last twenty years. In short, Dacos and other panellists agreed that the community has firmly established itself and is now carried by a strong forward momentum.

The transition to open science was discussed as a joint effort and a shared responsibility between actors from across the research sector and policy makers at all levels. Dacos noted that this process is driven in large part by the wide range of actors from the research sector that have engaged in this effort, including universities and other research performing organisations, research funding organisations, academic libraries, learned societies, and individual champions. The Open Science Policy Platform was instrumental in this regard, with stakeholders delivering their recommendations in 2018 and their final report on the progress made in 2020.

Policy makers have joined actors from the research sector in the pursuit of open science. Berghmans pointed to the unprecedented political consensus in support of open research practices that has formed between the European Union's institutions and national governments. A recent string of communications from the European Commission and conclusions by the Council of the European Union in relation to the new European Research Area illustrate the broad support for open science and flanking measures such as research assessment reform, the European Open Science Cloud (EOSC), and Open Research Europe.

The panel also discussed the open science community becoming increasingly ambitious in its scope and long-term goals. Rooryck reflected on the role played by Plan S and cOAlition S, which constitute an ambitious step forward for full and immediate open access to research publications. Driven by the mature and converging community, the transition to open science now looks beyond open access to publications. Opening up other research outputs (such as data and software) and the research process itself (for example, open peer review, open research methods) is now actively being discussed, as evidenced by the breakout session of this conference.

However, the panellists also highlighted uneven implementation of open science in practice. While there is a clear consensus and forward momentum at policy level, the daily reality for researchers can differ wildly depending on their personal, institutional, disciplinary, and national context. Berghmans pointed to survey results collected from European universities to make clear that open science is far from the norm across all these contexts. Aubert Bonn reflected that open research practices and the shift to a new culture is held back by lack of incentives and rewards, as well as uncertainty for (early-stage) researchers about the impact on their careers.

Are we seeing a potential tension between the two core dynamics shaping the transition to open science? Convergence and forward momentum on the one hand, and diversity and uneven implementation on the other. The panellists felt the key to resolving any potential conflict is to keep seeing the transition as a joint effort and a shared responsibility, wherein an open and inclusive dialogue between the sector and policy makers can resolve issues. The process that led up to the Coalition for Advancing Research Assessment (CoARA) was highlighted as a recent example. However, Aubert Bonn cautioned that an inclusive dialogue does not automatically mean that all actors are equally represented, pointing specifically to ongoing difficulties to include voices by early-stage researchers. This would be further explored during the conference discussion on equity.

Are we seeing a potential tension between the two core dynamics shaping the transition to open science?

Considering Equity

The Place of Equity Within the Transition to Open Science

The conference introduced equity as an essential and multifaceted, but often overlooked aspect of open science. Keynote speakers **Tony Ross-Hellauer** (Leader of the Open and Reproducible Research Group at the Graz University of Technology and Know-Center in Austria) and **Mari Sundli Tveit** (Governing Board Member of Science Europe and Chief Executive of the Research Council of Norway) in a session moderated by **Melanie Welham** (Governing Board Member of Science Europe and Executive Chair Biotechnology and Biological Sciences Research Council at UK Research and Innovation) discussed the need to make the transition to open practices just and equitable within Europe and globally.

Ross-Hellauer started his keynote address by pointing out that equity has been a key goal of open science since the very beginning, alongside inclusivity, democratisation, and so on. The 'Budapest Open Access Initiative' already included these goals in 2002.

However, Ross-Hellauer continued that 'open science' is an umbrella term for a wide range of principles, practices, and long-term goals. While each of these are independently a worthwhile cause, as a whole this transition cannot be optimised for all of them and choices will have to be made. Who will be making this choice and whose agenda will end up being prioritised among the range of possibilities? This relates to comments by Aubert Bonn cautioning against unequal representation within the dialogue on open science.

These insights led Ross-Hellauer to ask conference participants a key question: "Might open science be at risk in some cases of reinforcing existing privileges or creating new ones?" If we accept that scholarly research is an unequal place, does this not require us to purposefully consider existing inequalities and how these might interact with the transition to open research practices? Failing to do so has real-life consequences, as evidenced by the new barriers to open access created by the article processing charge (APC) model.

Building on these insights, Sundli Tveit in her keynote address highlighted the power and responsibility of research funding and performing organisations to create a well-functioning research system. Much like the fiduciary duty highlighted by Schiltz, public sector actors are responsible that this system is open, equitable, and just within Europe and globally. Indeed, steps are being taken in this direction with the launch of CoARA and the 'Action Plan for Diamond Open Access' as global initiatives as the most recent examples. To take this even

Might open science be at risk in some cases of reinforcing existing privileges or creating new ones?

further, the ON-MERRIT (Observing and Negating Matthew Effects in Responsible Research & Innovation Transition) project has developed recommendations for maximising equity in open and responsible research.

A Global Perspective on the Transition to Open Science

The conference expanded on the theme of equity with a discussion on building a global dialogue on open science. A panel discussion moderated by **Lidia Borrell-Damián** (Secretary General of Science Europe) reflected on the goals and objectives of such a dialogue, as well as how to ensure it is a collaborative and inclusive process. Bringing together views from different world regions, the panel consisted of **Arianna Becerril-García** (Executive Director at Redalyc/AmeliCA), **Michael Arentoft** (Head of Unit Open Science at the Directorate-General for Research and Innovation of the European Commission), **Lyn Horn** (Director at the Office of Research Integrity of the University of Cape Town and Extraordinary Associate Professor at the Centre for Applied Ethics of Stellenbosch University, South Africa), **Adrian Curaj** (Governing Board Member of Science Europe and Director General of the Executive Agency for Higher Education, Research, Development and Innovation Funding of Romania), and **David Mellor** (Director of Policy Initiatives at the Center for Open Science).

The panel expanded on the benefits of placing equity at the centre of the discussion on open science. Becerril-García pointed out that looking through the lens of equity is a subtle, but important shift in perspective. It has the potential to reveal hidden assumptions and aspects that are being overlooked. Agreeing with this, Mellor added that this shift in perspective would also facilitate a truly global dialogue between organisations from across the world. According to Arentoft, this dialogue could be seen as one on global principles and values that are then being adapted to diverse, local practices. As an example, he pointed out EOSC and CoARA as European contributions to this dialogue, ready for revision and adaptation to the contexts of other world regions.

All the Pieces Matter

The conference provided a comprehensive overview of the discussions taking place within the transition to open science. Fourteen breakout sessions organised around five main areas relevant to open science explored a wide range of topics and the recurring themes that connect them within the overall pursuit of open research. Expert speakers introduced each topic and set the stage for participants to discuss the challenges and opportunities going forward.

Four breakout sessions explored open science and society, five breakout sessions explored open access to the research process and its outputs, two breakout sessions explored research assessment reform, two breakout sessions explored research infrastructures, and one breakout session explored open science policy making.

Open Science and Society

What have we learned from the COVID-19 pandemic in relation to open science?

The COVID-19 pandemic has been a stress test for the scholarly communication system, adding urgency to consider the way forward. The Research on Research Institute (RoRI) published a report on the immediate response by the scholarly community to this health crisis, including short-term commitments by publishers to make research on COVID-19 openly available. Participants and speakers agreed that the pandemic provided important lessons on the scholarly communication system, notably the functions of peer-review and how these will have to evolve to keep up with new innovations and open research practices. However, these lessons have not yet been fully unpacked, nor is it clear whether the short-term commitments will result in a longer-term, more sustainable shift to open access.

Lessons from the COVID-19 pandemic were presented by **Ludo Waltman** (Professor of Quantitative Science Studies and Deputy Director at the Centre for Science and Technology Studies, Leiden University in the Netherlands and Associate Director at the Research on Research Institute) and **Stephen Pinfield** (Professor of Information Services Management at the University of Sheffield in the United Kingdom and Associate Director at the Research on Research Institute) in a session moderated by **Lidia Borrell-Damián** (Secretary General at Science Europe). **Nicola Francesco Dotti** (Senior Policy Officer at Science Europe) was rapporteur.

Are all (critical) voices heard in the transition to open science?

This session discussed how inclusive the transition to open science is to diverse, sometimes critical voices. Participants and

speakers agreed that currently not all voices are being heard equally, either because of structural inequalities (such as voices from the Global South) or inequalities specific to scholarly research (for example, voices from interpretivist disciplines, early-stage researchers, and administrative/professional support staff). The session concluded that a focus on 'why' we transition to open science will help raise awareness of these inequalities, while an exclusive focus on 'how' would blind us to them.

Our handling of diverse, sometimes critical voices in the transition to open science was presented by **Sarahanne M. Field** (Postdoctoral researcher at CWTS Leiden in the Netherlands), **Marion Boland** (Head of Research Policy at the Science Foundation Ireland), and **Maria M. Pawłowska** (Director International Relations at Visnea) in a session moderated by **Kristin Danielsen** (Executive Director at the Research Council of Norway). **Isabel Bolliger** (Scientific Officer at the Swiss National Science Foundation) was rapporteur.

Is Open Science bringing research closer to society? Challenges and opportunities of science communication and beyond

This session focussed on the role of open science in bringing scholarly research closer to society. How can we communicate research outputs to a wider audience in an understandable way? And how can societal actors meaningfully participate in the research process? Participants and speakers agreed that open research practices are already making the boundaries between academia and the rest of society more porous and creating more and better opportunities for them to interact. However, it was also agreed that more will be needed to fully shift to an evidence-based society wherein science guides political and other decisions. Reforming research assessment practices was highlighted alongside funding and capacity building measures.

The challenges and opportunities of bringing science closer to society were presented by **Stephen Curry** (Professor of Structural Biology and Assistant Provost for Equality, Diversity and Inclusion at Imperial College London in the United Kingdom and Chair of the San Francisco Declaration on Research Assessment) and **Annely Allik** (Chair of the Science Europe Working Group on Communication and Head of the Science Communication Department at the Estonian Research Council) in a session moderated by **Thierry Damerval** (Governing Board Member of Science Europe and President and CEO of the French National Research Agency). **Tom Jakobs** (Head of Data Management and Digital Transformation at the National Research Fund of Luxembourg) was rapporteur.

How can we individually and collectively champion open and ethical scholarly publishing systems?

This session focussed on how researchers can individually and together champion open and ethical scholarly publishing systems. Participants and speakers agreed on the need to move to a more collaborative research culture throughout the scholarly system. While individual researchers, communities, and organisations in principle support a more open and ethical approach to research, the competition-based model creates a variety of barriers for taking action.

How to champion open and ethical scholarly publishing was presented by **Véronique De Herde** (Postdoctoral Researcher at the Rotterdam School of Management – Erasmus University Rotterdam in the Netherlands) and **Fernando Racimo** (Associate Professor at the Globe Institute of the University of Copenhagen in Denmark) in a session moderated by **Lidia Borrell-Damián** (Secretary General of Science Europe). **Rachel Bruce** (Head of Open Research at UK Research and Innovation) was rapporteur.

Open Access to the Research Process and its Outputs

Relevance and openness of research software

This session focussed on the policy landscape for software in scholarly research, as well as the opportunities and challenges for its future development. Participants discussed how the policy framework for research software is still in the early stages of development. While software has become critically important for scholarly research, policies have neither kept up with the community of practice in this field, nor is there sufficient awareness among researchers. It was agreed that a more modern and appropriate policy framework will be necessary for the future sustainability and openness of research software.

The relevance and openness of research software was presented by **Michelle Barker** (Director at the Research Software Alliance) and **Neil Chue Hong** (Director and Principal Investigator at the Software Sustainability Institute and Professor of Research Software Policy and Practice at the University of Edinburgh in Scotland) in a session moderated by **Matthias Katerbow** (Programme Director Scientific Library Services and Information Systems at the German Research Foundation) and **Ioana Spanache** (Policy Specialist at the Romanian Executive Agency for Higher Education, Research, Development and Innovation Funding). **Katharina Rieck** (Open Science Manager at the Austrian Science Fund) and **Carlos Martinez-Ortiz** (Community Manager Natural Sciences and Engineering at the Netherlands eScience Center) were rapporteurs.

Opportunities and challenges for open access to academic books

This session focussed on opportunities and challenges for open access to academic books from the perspective of different actors, not least that of the researchers themselves. Key takeaways from the discussion among participants were the great demand for longform scholarly publications, especially, but not only, in the humanities and social sciences. Going forward, open access to academic books will have to navigate the prestige model that is shaping this market and aim to maintain the great diversity of smaller, more specialised publishers serving specific disciplinary and national communities.

The opportunities and challenges for open access to academic books were presented by **Ronald Snijder** (Deputy Director of the OAPEN Foundation) and **Dagmar Meyer** (Policy Adviser at the European Research Council Executive Agency) in a session moderated by **Tobias Philipp** (Scientific Officer at the Swiss National Science Foundation). **Jean-Claude Kita** (Policy Officer at the Fund for Scientific Research in Belgium) was rapporteur.

Authors' rights retention: what are the challenges and opportunities?

This session focussed on authors' rights retention as a critical tool in the transition to open science, allowing scholars to retain copyright as well as other rights that are necessary to make their work immediately available under an open license. While authors are the original copyright holder and should assert ownership of their work, speakers and participants agreed that rights retention is a joint effort. Greater awareness, a shared understanding, and, in time, a more robust legal framework in Europe and globally, will all be necessary for rights retention to become a common and effective part of scholarly publishing.

The challenges and opportunities of authors' rights retention were presented by **Robert Kiley** (Head of Strategy at cOAlition S) and **Mattias Björnmalm** (Secretary General at CESAER) in a session moderated by **Tom Jakobs** (Head of Data Management and Digital Transformation at the National Research Fund of Luxembourg). **Alina Irimia** (Open Science Projects Co-ordinator at the Executive Agency for Higher Education, Research, Development and Innovation Funding of Romania) was rapporteur.

Which business model for open access to research publications?

This session focussed on the changing landscape of scholarly publishing, which is seeing shifts in the 'mixed economy' of for-profit (such as gold open access with article processing charges, transformative agreements) and not-for-profit (such as green and diamond open access, funder open access platforms) open access publishing models. Participants and speakers discussed the diversity of models and the ideal of these being readily available alternatives tailored to the diverse needs of

researchers. The discussion addressed various factors to make this a reality, notably the need for price transparency to be able to consciously direct funding streams and investments in infrastructure. Equitable access to scholarly publishing was also discussed.

Business models for open access to research publications were presented by **Stephan Kuster** (Head of Public Affairs at Frontiers), **Pierre Mounier** (Co-Co-ordinator at OPERAS), and **Colleen Campbell**, (Co-ordinator at OA2020) in a session moderated by **Mathilde Reumaux** (Senior Policy Officer at Science Europe). **Marte Qvenild** (Senior Advisor at the Research Council of Norway) was rapporteur.

Open research methods?

This session focussed on the role of open research methods in the transition to open science. While receiving comparatively little attention, speakers and participants pointed out that open research methods (such as protocols, study designs, workflows) are essential to shift the research culture away from its focus on outputs and onto robust and reproducible research practices, albeit recognising that in certain disciplines and research fields these methods can be difficult to reproduce. This is one venue through which open research practices will lead to higher quality research. However, speakers and participants acknowledged that open research methods go against the current research culture and proactive steps will therefore need to be taken in practice and at policy level to increase attention for this field.

The role of open research methods was presented by **Leo Lahti** (Associate Professor at the University of Turku in Finland) and **Tracey Weissgerber** (Group Leader Meta-research and Automated Screening at the QUEST Center for Responsible Research, Berlin Institute of Health, Charité - Universitätsmedizin Berlin in Germany) in a session moderated by **Bregt Saenen** (Senior Policy Officer at Science Europe). **Harri Hautala** (Science Adviser at the Academy of Finland) was rapporteur.

Research Assessment Reform

Building an academic career in times of research assessment reform

The session focussed on the impact of research assessment reform on academic careers. It was highlighted that this discussion has a direct influence on people's careers. This makes it a high stakes discussion that needs clarity and careful guidance from all actors, especially during the transition phase. Speakers represented the perspectives of universities and research funding organisations, further highlighting the shared responsibility to ensure (early-stage) researchers are not negatively impacted by reforms. However, participants

and speakers nevertheless agreed on the need to reform research assessment practices as part of a broader cultural change towards open research practices.

Academic careers in times of research assessment reform were presented by **Toma Susi** (Associate Professor of Physics at the University of Vienna in Austria), **Jan-Ingvar Jönsson** (Vice-Chancellor of Linköping University in Sweden), and **Véronique Halloin** (Secretary General of the Fund for Scientific Research in Belgium) in a session moderated by **Mathilde Reumaux** (Senior Policy Officer at Science Europe). **Wiktoria Wojtyra** (Programme Officer at the Foundation for Polish Science) was rapporteur.

Alternatives to journal-based metrics in research assessment

This session focussed on the problems stemming from research assessment practices with an excessive focus on journal-based metrics and the solutions being proposed by alternative approaches. Against the backdrop of a bigger culture change in research, participants and speakers discussed how we can broaden our perspective on what we value and how to optimise our assessment practices for those values. Publishing pre-prints with (open) peer review, narrative CVs, the 'INORMS SCOPE Framework for Research Evaluation', and 'NOR-CAM toolbox for recognition and rewards in academic careers' were discussed for their potential.

Alternatives to journal-based metrics in research assessment were presented by **Elizabeth Gadd** (Chair of the INORMS Research Evaluation Group and Research Policy Manager at Loughborough University in the United Kingdom) and **Alexander Refsum Jensenius** (Member of the EUA Expert Subgroup on Research Assessment and Professor and Director at RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion at the University of Oslo in Norway) in a session moderated by **Helena Burg** (Head of International Relations at the National Research Fund of Luxembourg). **Katharina Rieck** (Open Science Manager at the Austrian Science Fund) was rapporteur.

Research Infrastructures

What role for academic libraries in the transition to open science?

This session focussed on the role of academic libraries in the transition to open science. Participants and speakers agreed that libraries play a multi-faceted role as advisors, promotors, service providers, and funders. While the transition is and must remain a joint effort and shared responsibility, libraries bridge the gap between strategic policy and practical implementation. They are central to providing guidance to researchers and navigating their institutions through this transition.

The role of academic libraries in the transition to open science was presented by **Demmy Verbeke** (Head of KU Leuven Libraries Artes and Associate Professor of Open Scholarship at KU Leuven in Belgium) and **Julien Roche** (President of the Association of European Research Libraries) in a session moderated by **Bregt Saenen** (Senior Policy Officer at Science Europe). **Agnès Ponsati Obiols** (Director Digital Library and Information Systems at the Spanish National Research Council) was rapporteur.

Are services and infrastructures in place to support open science across the entire research cycle?

This session focused on the services and infrastructures that should be in place to support open science across the entire research cycle. Many are already in place at institutional, national, and European level, but important challenges remain in terms of seamless co-ordination, collaboration and accessibility. Participants and speakers agreed that it is important to view research infrastructures and services in a comprehensive way and continue to invest in this ecosystem working together across national borders in Europe and globally.

Services and infrastructures in support of open science were presented by **Sarah Jones** (EOSC-A Board of Directors, EOSC Future, and GÉANT) and **Carthage Smith** (Lead Co-ordinator at the OECD Global Science Forum) in a session moderated by **Maria Cruz** (Chair of the Science Europe Working Group on Open Science and Senior Policy Officer at the Dutch Research Council). **Kathrin Winkler** (Programme Director at the German Research Foundation) was rapporteur.

Open Science Policy Making

The role of nationally co-ordinated open science strategies

This session focussed on the role of national strategies in the development and implementation of open science policies. Participants and speakers explored the various ways in which these strategies and action plans provide coherence to national systems, notably ensuring that all relevant actors and especially (early-stage) researchers are meaningfully engaged in the process. It was agreed that they organise a crucial dialogue within the national context, as well as anchor this dialogue to international developments.

The role of nationally co-ordinated open science strategies was presented by **Stan Gielen** (Chair of the Dutch National Programme Open Science) and **Marin Dacos** (National Open Science Co-ordinator at the French Ministry of Higher Education, Research, and Innovation) in a session moderated by **Kristin Danielsen** (Executive Director at the Research Council of Norway). **Dejana Carić** (Scientific Projects and Programmes Co-ordinator at the Croatian Science Foundation) was rapporteur.

Next Steps for Science Europe and its Member Organisations

Science Europe and its research funding and performing member organisations are committed to supporting open science as part of a well-functioning research system. Over the years, our work has resulted in tangible progress for open research practices within the communities we serve. Yet, much is still needed to be done to make Open Science the norm. This conference was organised to take stock and further expand our shared understanding of the transition to open science and to better align our efforts.

Sharing good practices and mutual learning between members and with partners is the foundation of Science Europe's work in this field. The Science Europe Working Group on Open Science regularly meets to discuss the transition to open science and align policies whenever relevant. These discussions are informed by national developments in practice and at policy level.

Conference speakers and participants made it clear that the momentum towards making Open Science the norm in research and innovations systems needs to be sustained. Strong support at the political level and a broad coalition of actors from across the research sector are driving the transition to open practices, a process that is becoming increasingly ambitious. However, speakers and participants also cautioned that an uneven implementation and other important challenges, including equity of access, remain. The breakout sessions made clear these are not abstract insights, and that these need to be placed at the core of the dynamics that shape and influence the policy initiatives, research assessment reforms, and financial support measures that are driving the transition to open science.

Science Europe and its members are taking this to heart and make use of these insights in their work.

In this context, the position paper launched during the conference, the 'Science Europe Direction Paper on Open Science', sets out a direction for our future work and aims to achieve two key goals. Firstly, open and seamless collaboration between all actors involved in the research process, as well as open access to research outputs. Secondly, meaningful involvement of societal actors whenever relevant in the research process. These goals are supported by purposeful action to make the transition to open science equitable, ensuring all research communities can take part and all segments of society will be able to reap its benefits.

Science Europe and its members will continue to play a variety of roles based on the strategic priorities of national contexts, in the 'Strategy Plan 2021–2026' and the Direction Paper on Open Science. We will promote further alignment of policies in Europe to incentivise open science and facilitate basic and applied research across disciplinary, geographical, and other borders; raise awareness and advocate open science at global level to policy makers and the broader society on the importance, urgency, and added value of the transition to open science, with a focus on equity; and provide input to European legislation and global and European policies and funding mechanisms shaping the research landscape.

The transition to open science is a joint effort and a shared responsibility between partners in policy and practice. As we continue our journey in this field, Science Europe and its members welcome all researchers, universities, research funding and performing organisations, academic libraries, learned societies, and policy makers who want to join us in this effort.

The momentum towards making Open Science the norm in research and innovations systems needs to be sustained.

Conference Programme

TUESDAY 18 OCTOBER 2022

09.00

Welcome
- **Lidia Borrell-Damián**, Secretary General, Science Europe

KEYNOTE PRESENTATIONS
The state of Open Science in 2022
- **Marc Schiltz**, President, Science Europe, and Chief Executive Officer, National Research Fund of Luxembourg (FNR)
- **Ezra Clark**, Director Division of Science Policy and Basic Science, Natural Sciences Sector, UNESCO (*video recording*)

PLENARY PANEL DISCUSSION

10.00

All the Pieces Matter: how to make Open Science the new normal?
Policy initiatives, research assessment reforms, financial support, and champions at all levels are driving the transition to Open Science. But are these developments coherent, focussed, and effective in making open research practices the new normal?

- **Noémie Aubert Bonn**, Postdoctoral Researcher, University of Hasselt, Belgium and Amsterdam University Medical Center, the Netherlands
- **Stephane Berghmans**, Director of Research and Innovation, European University Association
- **Marin Dacos**, National Open Science Co-ordinator, French Ministry of Higher Education, Research, and Innovation
- **Johan Rooryck**, Executive Director, cOAlition S and Editor-in-chief, 'Glossa: a journal of general linguistics'

MODERATOR   **Maria Cruz**, Chair of the Science Europe Working Group on Open Science, and Senior Policy Officer, Dutch Research Council (NWO)

11.00

Break

PARALLEL BREAKOUT SESSIONS

11.30

Open Science in practice: making it possible and rewarding
Which opportunities and challenges are being created for researchers, their teams, and institutions by the transition to Open Science? Which challenges do they face?

Breakout sessions offer a comprehensive insight into how this transition is being experienced in practice. They highlight the main areas where researchers are currently navigating the opportunities and challenges of Open Science in the daily practice of their research. Discussions on this wide range of elements will focus on what we value and the actions needed to make those values both possible and rewarding.

OPEN SCIENCE AND SOCIETY

1. **What have we learned from the COVID-19 pandemic in relation to Open Science?**
- **Ludo Waltman**, Professor of Quantitative Science Studies and Deputy Director, Centre for Science and Technology Studies (CWTS), Leiden University and Associate Director, Research on Research Institute (RoRI)
- **Stephen Pinfield**, Professor of Information Services Management, University of Sheffield and Associate Director, Research on Research Institute (RoRI)

MODERATOR **Lidia Borrell-Damián**, Secretary General, Science Europe
RAPPORTEUR **Nicola Francesco Dotti**, Senior Policy Officer, Science Europe

RESEARCH ASSESSMENT

2. **Building an academic career in times of research assessment reform**
- **Toma Susi**, Associate Professor of Physics, University of Vienna, Austria
- **Jan-Ingvar Jönsson**, Vice-Chancellor, Linköping University, Sweden
- **Véronique Halloin**, Secretary General, Fund for Scientific Research (FNRS), Belgium

MODERATOR **Mathilde Reumaux**, Senior Policy Officer, Science Europe
RAPPORTEUR **Wiktoria Wojtyra**, Programme Officer, Foundation for Polish Science (FNP), Poland

OPEN SCIENCE AND SOCIETY

3. **Are all (critical) voices heard in the transition to Open Science?**
- **Sarahanne M. Field**, Postdoctoral researcher, CWTS Leiden, the Netherlands
- **Marion Boland**, Head of Research Policy, Science Foundation Ireland (SFI)
- **Maria M. Pawłowska**, Director International Relations, Visnea

MODERATOR **Kristin Danielsen**, Executive Director, Research Council of Norway (RCN)
RAPPORTEUR **Isabel Bolliger**, Scientific Officer, Swiss National Science Foundation (SNSF)

RESEARCH INFRASTRUCTURES

4. **What is the role for academic libraries in Open Science?**
- **Demmy Verbeke**, Head of KU Leuven Libraries Artes and Associate Professor of Open Scholarship, KU Leuven, Belgium
- **Julien Roche**, President of the Association of European Research Libraries (LIBER)

MODERATOR **Bregt Saenen**, Senior Policy Officer, Science Europe
RAPPORTEUR **Agnès Ponsati Obiols**, Director Digital Library and Information Systems, Spanish National Research Council (CSIC)

OPEN ACCESS

5. **Relevance and Openness of Research Software**
- **Michelle Barker**, Director, Research Software Alliance
- **Neil Chue Hong**, Director and Principal Investigator, Software Sustainability Institute and Professor of Research Software Policy and Practice, University of Edinburgh

MODERATOR **Matthias Katerbow**, Programme Director Scientific Library Services and Information Systems, German Research Foundation (DFG), Germany

OPEN ACCESS

6. **Opportunities and challenges for Open Access to books**
- **Ronald Snijder**, Deputy Director, OAPEN Foundation
- **Dagmar Meyer**, Policy Adviser, European Research Council Executive Agency (ERCEA)

MODERATOR **Tobias Philipp**, Scientific Officer, Swiss National Science Foundation (SNSF)
RAPPORTEUR **Jean-Claude Kita**, Policy Officer, Fund for Scientific Research (FNRS), Belgium

OPEN ACCESS

7. **Authors' Rights Retention: what are the challenges and opportunities?**
- **Robert Kiley**, Head of Strategy, cOAlition S
- **Mattias Björnmalm**, Deputy Secretary General, CESAER

MODERATOR **Tom Jakobs**, Head of Data Management and Digital Transformation, National Research Fund of Luxembourg (NFR)

RAPPORTEUR **Alina Irimia**, Open Science Projects Co-ordinator, Executive Agency for Higher Education, Research, Development and Innovation Funding of Romania (UEFISCDI)

13.00 *Break*

14.30 **PARALLEL BREAKOUT SESSIONS**

OPEN SCIENCE AND SOCIETY

8. **Is Open Science bringing research closer to society? Challenges and opportunities of science communication and beyond**
- **Stephen Curry**, Professor of Structural Biology and Assistant Provost for Equality, Diversity and Inclusion, Imperial College London and Chair of the San Francisco Declaration on Research Assessment (DORA)
- **Annely Allik**, Chair of the Science Europe Working Group on Communication, Head of Science Communication Department, Estonian Research Council (ETAG)

MODERATOR **Thierry Damerval**, Governing Board Member, Science Europe, and President & CEO, French National Research Agency (ANR)

RAPPORTEUR **Tom Jakobs**, Head of Data Management and Digital Transformation, National Research Fund of Luxembourg (FNR)

RESEARCH ASSESSMENT

9. **Alternatives to journal–based metrics in research assessment**
- **Elizabeth Gadd**, Chair of the INORMS Research Evaluation Group, and Research Policy Manager, Loughborough University, United Kingdom
- **Alexander Refsum Jensenius**, Member of the EUA Expert Subgroup on Research Assessment, and Professor and Director RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion, University of Oslo, Norway

MODERATOR **Helena Burg**, Head of International Relations, National Research Fund of Luxembourg (FNR)

RAPPORTEUR **Katharina Rieck**, Open Science Manager, Austrian Science Fund (FWF), Austria

OPEN SCIENCE AND SOCIETY

10. **How can we individually and collectively champion open and ethical scholarly publishing systems?**
- **Véronique De Herde**, Postdoctoral Researcher, Rotterdam School of Management – Erasmus University Rotterdam, Netherlands
- **Fernando Racimo**, Associate Professor, Globe Institute, University of Copenhagen

MODERATOR **Lidia Borrell-Damián**, Secretary General, Science Europe

RAPPORTEUR **Rachel Bruce**, Head of Open Research, UK Research and Innovation (UKRI), United Kingdom

RESEARCH INFRASTRUCTURES

11. **Are services and infrastructures in place to support Open Science across the entire research cycle?**
- **Sarah Jones**, EOSC-A Board of Directors, EOSC Future, and GÉANT
- **Carthage Smith**, Lead Co-ordinator, OECD Global Science Forum

MODERATOR **Maria Cruz**, Chair of the Science Europe Working Group on Open Science, and Senior Policy Officer, Dutch Research Council (NWO)

RAPPORTEUR **Kathrin Winkler**, Programme Director, German Research Foundation (DFG)

OPEN ACCESS

12. **Which business model for Open Access to research publications?**
- **Stephan Kuster**, Head of Public Affairs, Frontiers
- **Pierre Mounier**, Co-Co-ordinator, OPERAS
- **Colleen Campbell**, Co-ordinator, OA2020

MODERATOR **Mathilde Reumaux**, Senior Policy Officer, Science Europe
RAPPORTEUR **Marte Qvenild**, Research Council of Norway (RCN)

OPEN SCIENCE POLICIES

13. **The role of nationally co-ordinated Open Science strategies**
- **Stan Gielen**, Chair, Dutch National Programme Open Science, the Netherlands
- **Marin Dacos**, National Open Science Co-ordinator, French Ministry of Higher Education, Research, and Innovation

MODERATOR **Kristin Danielsen**, Executive Director, Research Council of Norway (RCN)
RAPPORTEUR **Dejana Carić**, Scientific Projects and Programmes Co-ordinator, Croatian Science Foundation (HRZZ), Croatia

OPEN ACCESS

14. **Open research methods**
- **Leo Lahti**, Associate Professor, University of Turku, Finland
- **Tracey Weissgerber**, Group Leader Meta-research and Automated Screening, QUEST Center for Responsible Research, Berlin Institute of Health, Charité – Universitätsmediz, Germany

MODERATOR **Bregt Saenen**, Senior Policy Officer, Science Europe
RAPPORTEUR **Harri Hautala**, Science Adviser, Academy of Finland (AKA)

16.00 ## Wrap-up and Introduction to Day 2
- **Bregt Saenen**, Senior Policy Officer, Science Europe

18.00 ## Reception
A reception is organised for speakers attending in person and locally based participants in the conference. It will feature additional talks from:

- **Michael Arentoft**, Head of Unit Open Science, DG RTD, European Commission
- **Hans de Jonge**, Head of Open Science Policies, Dutch Research Council (NWO)
- **Robert-Jan Smits**, Executive Board President, Technical University Eindhoven, the Netherlands

MODERATOR **Lidia Borrell-Damián**, Secretary General, Science Europe

WEDNESDAY, 19 OCTOBER 2022

09.00

Welcome
* **Lidia Borrell-Damián,** Secretary General, Science Europe

09.05

KEYNOTE PRESENTATIONS
Why consider equity?
Why include equity as an explicit consideration in the policies, reforms, and support mechanisms driving the transition to Open Science? The second day of the conference explores this essential and multifaceted, but often overlooked aspect of Open Science.

* **Tony Ross-Hellauer**, Leader Open and Reproducible Research Group, Graz University of Technology and Know-Center, Austria
* **Mari Sundli Tveit**, Governing Board Member, Science Europe, and Chief Executive, Research Council of Norway (RCN)

MODERATOR   **Melanie Welham**, Governing Board Member, Science Europe, and Executive Chair Biotechnology and Biological Sciences Research Council, UK Research and Innovation (UKRI)

10.30

Break

11.00

PLENARY PANEL DISCUSSION
Launching the Science Europe 'Direction Paper on Open Science' and panel discussion on building a global dialogue on Open Science
The 'UNESCO Recommendation on Open Science' has established an international framework with the potential of driving the global discussion. What should be the goals and objectives of this dialogue? And how do we build a collaborative and inclusive process to achieve them?

Launch of the 'Science Europe Direction Paper on Open Science'
* **Thierry Damerval**, Governing Board Member, Science Europe, and President & CEO, French National Research Agency (ANR)

Panel discussion
* **Arianna Becerril-García**, Executive Director, Redalyc/AmeliCA
* **Michael Arentoft**, Head of Unit Open Science, DG RTD, European Commission
* **Lyn Horn**, Director, Office of Research Integrity, University of Cape Town and Extraordinary Associate Professor, Centre for Applied Ethics at Stellenbosch University, South Africa
* **Adrian Curaj**, Governing Board Member, Science Europe, and Director General, Executive Agency for Higher Education, Research, Development and Innovation Funding of Romania (UEFISCDI)
* **David Mellor**, Director of Policy Initiatives, Center for Open Science

MODERATOR   **Lidia Borrell-Damián**, Secretary General, Science Europe

12.30

Concluding remarks
* **Lidia Borrell-Damián**, Secretary General, Science Europe

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