

# Open Research publishing

## Changing minds and practices

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F1000

Open Science (Research) aims at:

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

*Open science is a human rights issue... encapsulated in Article 27 of the 1948 Universal Declaration of Human Rights:*

*“Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.”*

*Open science and research leads to surprising discoveries and creative insights*

**Open science and research roadmap 2014–2017**, Reports of the Ministry of Education and Culture, Finland 2014:21

# What does this mean in the context of scholarly communication?

*increasing research quality → integrity, reproducibility, validation*

*boosting collaboration → supporting better use and reuse of research outputs*

*speeding up the research process → more rapid access to new findings, of all types*

*making the assessment of research more transparent → fairness, accountability, trust*

*promoting public access to scientific results → visibility, accessibility, equitability*

*introducing more people to academic research → trust, access, public engagement*

# Challenges and needs of the different communities

nature

Published: 10 February 2016

## Does it take too long to publish research?

Scientists are becoming increasingly frustrated by the time it takes to publish a paper. Something has to change, they say.

They say that journals are taking too long to review papers and that reviewers are requesting more data, revisions and new experiments than they used to. "We are demanding more and more unreasonable things from each other".

### Researchers as authors

- Rapid credit for work
- Get credit for all their outputs
- Democratize the sharing of research
- Fair treatment in validation process
- Ability to update publications as work evolves
- Rapid / simple process to get work published
- Minimize publication payment admin burden

nature

Nature Video | 25 May 2016

## Is there a reproducibility crisis in science?

Reproducibility is a hot topic in science at the moment, but is there a crisis? *Nature* asked 1,576 scientists this question as part of an online survey. Most agree that there is a crisis and over 70% said they'd tried and failed to reproduce another group's experiments.

### Readers / users

- Access to research data and associated methods information to support reuse & independent validation of findings
- Balanced view on research – both positive and negative/null findings
- Rapid access to the latest discoveries
- Visibility of article validation
- Access to expert perspectives

thebmjopinion

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## Paul Glasziou and Iain Chalmers: Is 85% of health research really "wasted"?

January 14, 2016

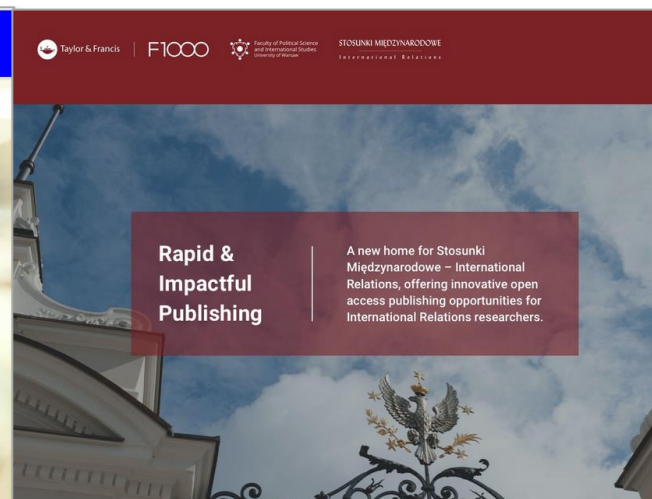
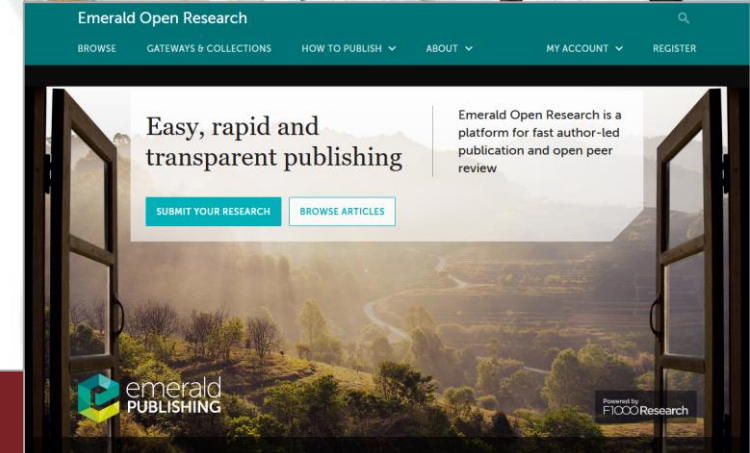
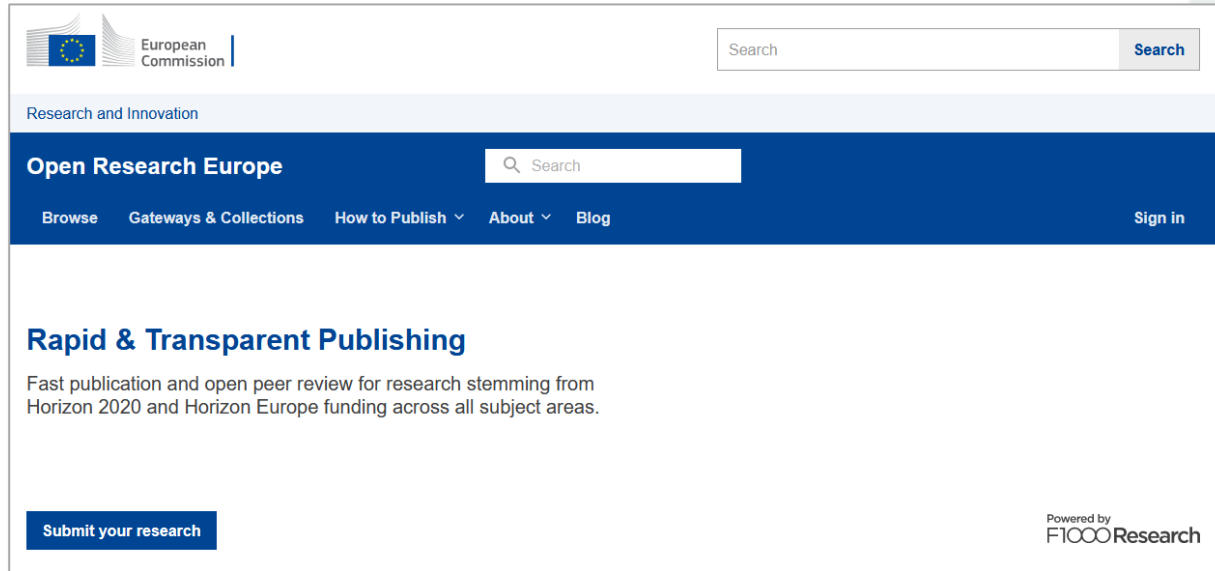
Our estimate that 85% of all health research is being avoidably "wasted" [Chalmers & Glasziou, 2009] commonly elicits disbelief. ...Of 100 projects, 50 would be published. Of these 50 published studies, 25 would be sufficiently well reported to be usable and replicable. And of those 25, about half (12.5) would have no serious, avoidable design flaws. Hence the percent of research that does NOT satisfy these stages is the remainder, or 87.5 out of 100.

### Funders / institutions / governments

- Reduce research waste; maximize ROI
- Rapid and broad impact of funding
- Increased research quality – integrity, reproducibility, validation
- Minimize publication-related admin
- Boost collaboration & Team Science
- Maximize adherence to their policies



# Open research platforms across stakeholders



# Lessons learned: challenges and opportunities

- Tackle barriers to engage with new venues and new approaches (e.g. requirement to have Web of Science indexing to have an Impact Factor)
- Need more progress towards adjustment of incentives system
  - Collaboration with other key stakeholders crucial to ensure policy alignment
  - Disciplinary and regional variations needed
  - Open and active support / collaboration required to encourage and reassure researchers to adopt newer infrastructures that support open research practices
- Need better training on core skills to support open research practices
- Need to build awareness of open research amongst researchers at all levels, including the benefits

# Alignment between stakeholders needed

## Need more coordinated National Open Science Plans

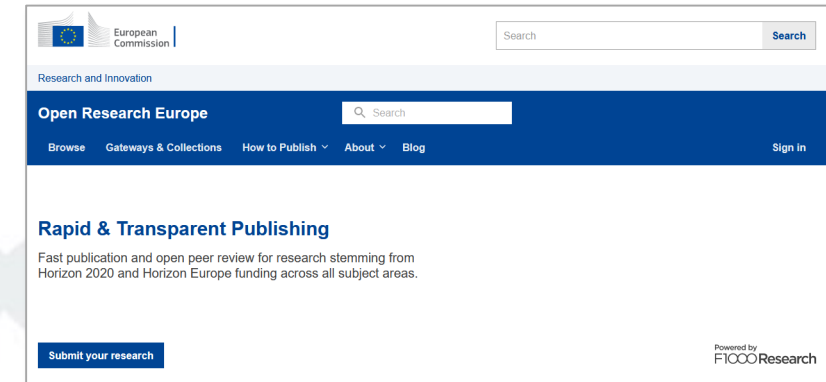




# Towards collaborative broad venues

## Regional, national, disciplinary

- Open Research Europe – exploring how to expand beyond Horizon 2020/Europe to other organisations across Europe
- Materials Open Research – launching with IOM3 as a partner, and bringing on other major organisations involved in materials research
- Launching similar approaches in other regions of the world – bringing together funders, research institutions, societies, industry





# Open Research Central

To foster the re-imagination of the research dissemination system to facilitate trust, collaboration, and transparency through setting norms and standards.

Open Research Central (ORC) has four core aims:



**Define** standards based on inclusive principles for the open dissemination of primary research outputs from across the research cycle and iterate these standards over time to ensure they continue to support the needs of all researchers and their communities, around the world.



**Build** a movement to expand the adoption of these standards by researchers, research funders, research performing organisations and others.



**Encourage** the community to provide researchers with services that meet these open research dissemination standards.



**Promote** these standards by certifying providers, implementing a platform to index compliant content, and establishing metrics to assess adoption and community benefit of these principles.

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# Open Research Central

## Changing the paradigm for primary research dissemination

### Open Research Central principles

Below are five core principles that underpin the responsible dissemination of original research.

1

#### **Equitable participation in research communication**

Platforms, policies and practices should be designed to enable inclusive and diverse collaboration in research and its dissemination.

2

#### **Rapid access to research**

Research outputs should be made openly accessible as quickly and broadly as possible, and in the case of research articles, no later than the date of publication.

3

#### **Transparent and accountable processes**

Policies and practices should support research integrity and establish trust in the research and in the way it is disseminated.

4

#### **Maximise reuse of research outputs**

Researchers should be supported by community standards and policies to enable the widest possible reuse of research outputs.

5

#### **Value all research outputs and processes across the research lifecycle**

All components of a research project should be shared and acknowledged through appropriate credit.

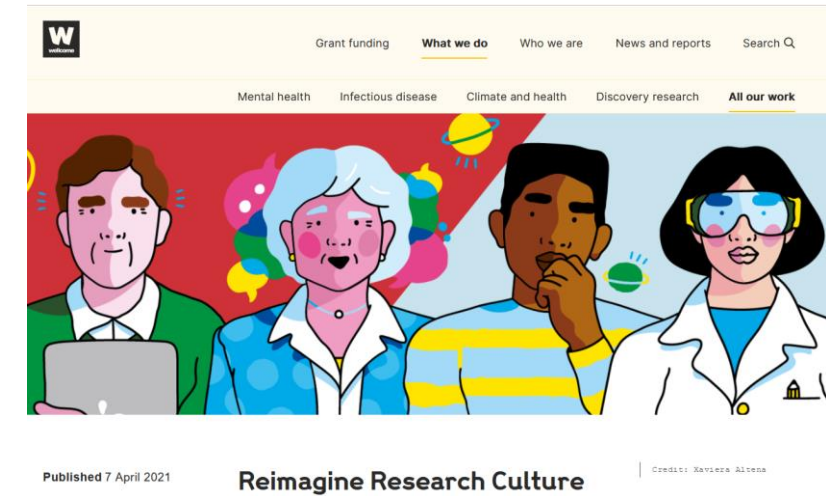
Aligned with:

- UNESCO Recommendations
- International Science Council (ISC) recommendations
- NASA Transform to Open Science (TOPS)



# Summary

- Open Science/Research is crucial to our success: as a research community, as society, as humanity
- Tools and infrastructures are available to enable researchers to adopt open research practices
- We need to work actively together, across stakeholders, to ensure the cultural shift needed to incentivise adoption





# THANK YOU

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